

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG



FACULTY OF HUMANITIES SCHOOL OF EDUCATION

Masters of Education

2025

RESEARCH REPORT

Name of Student: Sydney Xolani Noyile

Student Number: 883337

Degree: Masters of Education

Division: Educational Leadership and Policy Studies (ELPS)

Supervisor: Dr Beverley Blake

Research Topic: Exploring the integration of Information Communication Technology (ICT) into the pedagogy of Business Studies in Johannesburg Central District Schools.

A Research Report submitted in fulfilment of the requirement for the independent Research Module (Masters of Education) in the discipline of Educational Leadership and Policy Studies.

Supervisor: Dr B.S. Blake

By

Mr S.X. Noyile

Declaration

I, Sydney Xolani Noyile, declare that “**Exploring the integration of Information Communication Technology (ICT) into the pedagogy of Business Studies in Johannesburg Central District Schools**” abides by the following rules:

1. The ideas reported in this project, except where otherwise indicated, are my own.
2. This project does not contain other persons’ data, pictures, graphics, or other information unless specifically acknowledged as being sourced from other persons.
3. This project does not contain other persons’ writings unless specifically acknowledged as being sourced from other researchers. Where other written sources are quoted:
 - ✓ Their words were not written, but their general information attributed to them was referenced.
 - ✓ Where their exact words were used, their writing was placed inside quotation marks and referenced accordingly.
4. This project does not contain text, graphics, or tables copied and pasted from the internet unless specifically acknowledged; the source is detailed in the project and reference section.

I declare that this has not been previously submitted for any degree at another university.

Signature :



Date: 17 March 2025

Mr S.X Noyile

Dedications

I dedicate this research to my late grandmother, Mabel Bukeka Noyile, whose unwavering belief in the power of education shaped the foundation of my academic journey. From a young age, you instilled in me a love for learning, and I honoured your memory by striving to contribute meaningfully to the body of knowledge, which I know would bring you immense pride.

I also dedicate this work to my mother, Thandi Muriel Noyile. Your unwavering support throughout the challenges of my academic journey has been a pillar of my strength. Although circumstances did not allow you to pursue higher education, you never stopped believing in me, pushing me to reach greater heights. Your sacrifices and encouragement continue to inspire me, and I smile with gratitude when I reflect on how far we have come together.

Finally, this research is dedicated to every young child growing up in the townships. Let this stand as proof that no matter where you come from, be it the dustiest streets or the humblest homes, education remains a powerful tool for breaking barriers and achieving greatness.

Acknowledgements

Re be jwale ka difate, Tse hlomiloeng pel'a metsi

(May we be like the trees, that are planted beside the waters)



Created by: MetaAI

Edited by: Msibi, T.C

Stream of Water = *Knowledge through Education.*

Tree with roots in the water = *A human who has invested his life to learn*

Green Leaves = *The rewards that come with education*

Dry tree away from water = *Those who take education for granted.*

He is like a tree planted by the rivers of water, which brings forth its fruit in its season.

Whose leaf also shall not wither, and whatever he does shall prosper

—Psalm 1 v 3 (New King James Version)

To God be the Glory. I extend my deepest gratitude to God for the gift of life and for the opportunity to embark on this academic journey in pursuit of my master's degree. Without His guidance and strength, this achievement would not have been possible. Thank you, God, for the talent and the countless abilities you have gifted me. Acknowledging you before anyone else is therefore the right thing to do. *Zize zakho iinto zonke, wena uyingcwele.*

I would like to express my heartfelt appreciation to my supervisor, Dr. Beverley Blake. This journey began with challenges marked by rejection and denial from others. However, you graciously opened your door and agreed to supervise me. Your unwavering encouragement, availability, and kindness have made this endeavour worthwhile. I have heard horrifying stories about students and supervisors, but with you, it has been a smooth sail. Your support and care sustained me through the process, and it was your compassionate and understanding nature that kept me going. I hope that there is still time for one more.

I would also like to extend my sincere gratitude to Professor Emmanuel Ojo. Thank you for taking the time to listen to my story and for your invaluable guidance. Your exposure to postgraduate studies, while I was still an undergraduate, inspired me to dream of becoming an academic in the future. Thank you for reminding me of this aspiration and encouraging me to pursue it. Today, I can confidently say that this is worth it.

I would like to express my deepest appreciation to the Noyile family. In particular, I thank my mother, Thandi Muriel Noyile, for her support. Thank you for carrying me and bringing me into this world. My wish is to make you proud every day that we share together on earth. I hope that this will be an achievement that will put a smile on your face. To my uncle Paul Noyile and my sisters Lindiwe Nhlapo and Zanele Noyile. Your direct and indirect support throughout this journey means the world to me. I hope that this research serves as a small token of appreciation that brings you joy. *Ndithi enkosi kini nina nonke bo Mnguni, Mpofana, Mpangezitha, Chumane, abawela uThukela. Kheswa...*

I am profoundly grateful to the Motseare family. Though I entered your family as a son-in-law, you welcomed me with love, care, and unwavering support in all my endeavors, including this academic pursuit. I especially thank Mma Puseletso Motseare for her encouragement and support. I also extend my appreciation to Bandile Motseare for her persistent reminders that this qualification must be completed. Your words, always optimistic, have served as a source of motivation. To Portia and Mzwakhe Motseare, though you may not speak much about

academia, your kind gestures have been more than enough encouragement for me to continue my journey, even though it has been tough at times. Your gestures always reached me at the right moment.

To my beloved wife, Boitumelo Naledi Motseare, I express my deepest gratitude. Since the beginning of this journey, you have stood by my side and offered unwavering support. Thank you for taking care of me, ensuring that I had nourishing meals to sustain my energy, and for those late-night cups of coffee that kept me going. Your love and dedication has played a vital role in this accomplishment. You never complained; instead, you reminded me of how all this will be worth it one day. To you, I say, *Mme Mohlakhwana wa pholo ya disema napo mosito...*

To my son, Zukhanye, I dedicate my gratitude to you. At the time of submission, you were just three years and four months old. Whenever you approached me to play, I often responded, “Daddy is a little busy right now.” I hope that one day you will read this and understand that whenever I was unable to play, I was working towards this achievement. Your spontaneous hugs and kisses during my solitary work moments kept me going. Although you may not yet realise it, you have played an important role in my success.

I extend my appreciation to my colleagues and comrades for their support. From the moment you learned of my enrolment in the master’s program, you showered me with words of encouragement. In particular, I thank my school principal, Mr. Salikram, and deputy principal, Mr. Masoga. Your leadership and commitment to excellence has provided an environment that has enabled me to reach this milestone. My gratitude also goes to Ms. Mafolo, Ms. Maboe, Ms. Makeketlane, Mr. Moloisi, Mr. Moremi, Mr. Ntsiko, Mr. Mokoena, and Ms. Mongatane. You have been more than just colleagues; you have become family. This achievement belongs to all of us.

As the saying goes, *It takes a village to raise a child*. I extend my deepest thanks to the families that made it their mission to keep me in their prayers and offer encouragement, guidance, and wellness support. To the Masoga, Mafolo, and Gomba families, your contributions to my journey are invaluable. I also acknowledge the Ngwane family, led by Mr Innocent Ngwane. Your prayers and words of wisdom have made a lasting impression, and I will always treasure your support.

To my brother and friend, Dr. Thembinkosi Trevor Zwane, Mangethe Baba, words cannot fully express my gratitude. Your achievements stand as a beacon of inspiration, pushing me to strive for greater heights in my career. Your unwavering support throughout this journey has been nothing short of invaluable. The path of academia can often be a lonely one, but your presence has eased that solitude. Thank you for your intellectual contributions and motivation; you have played a pivotal role in my growth.

During my undergraduate years at Wits, I formed friendships that evolved into lifelong bonds. I extend my gratitude to my friends in academia and in life: Siyabonga Mdekazi, Charles Msibi, Ziyanda Ndawonde, and Fortunate Cindi. Thank you for checking in on me and for those much-needed moments of relaxation when the pressures of academia became too overwhelming. Your unwavering support has been instrumental to my success. This qualification is a shared achievement, and its light will shine upon our entire community. I also thank my dear comrades, Smanga Nhlengethwa and Sifiso Ngubelanga. Those meetings just to eat inyama yenhloko were very relaxing. When the going got tough, it was your conversations and advice that kept me going; for that, I acknowledge and salute you, maqabane.

Lastly, I extend my heartfelt thanks to my dear brother Vusi Ben Khuboni. Whenever I was away from home due to academic or professional commitments, you ensured that my mother and sisters were taken care for. I want you to know that your efforts have not been in vain. *Bhele*, you may not realise it, but you have contributed immensely to this journey, and for that, I am eternally grateful.

Abstract

The integration of Information and Communication Technology (ICT) in education has become a global priority for enhancing teaching and learning. In South Africa, ICT supports diverse learning styles, improves classroom engagement, and equips learners with skills for the digital economy. This study explores ICT integration into Business Studies pedagogy in six secondary schools within Johannesburg Central District, examining how six teachers understand, implement, and experience ICT in their classrooms. The Substitution, Augmentation, Modification, and Redefinition (SAMR) model guided the analysis of ICT integration levels and their pedagogical implications.

A qualitative research design was employed, using semi-structured interviews and document analysis to generate rich, contextualised data. All participants taught in township schools and agreed that ICT is essential for effective teaching. However, they expressed concerns about top-down curriculum expectations, such as ATP coverage and facilitator directives, which limited their instructional autonomy. Participants reported significant challenges, including limited technological resources, load-shedding, inadequate training, and poor technical support, creating uneven learning environments across schools.

Findings indicate that teachers' ICT practices varied: some primarily used ICT at the substitution level, while others demonstrated advanced integration at the modification and redefinition levels, employing interactive and technology-driven approaches. Key benefits of ICT integration included increased learner engagement, improved understanding of business concepts, and opportunities for practical application. Effective practices identified included interactive web applications, digital collaboration tools, and virtual simulations for teaching practical business concepts.

The study recommends targeted professional development, investment in ICT infrastructure, and strengthened policy support to facilitate meaningful ICT integration. By addressing these challenges and implementing these recommendations, Business Studies teachers can create a technology-driven learning environment that enhances pedagogy and prepares learners for the demands of the 21st-century economy. This research contributes to the discourse on digital transformation in education by providing empirical insights into ICT use in South African classrooms, informing educators, policymakers, and curriculum developers seeking to bridge gaps between business education and technological advancement.

Keywords: ICT integration; Business studies education; Digital Transformation; Innovative Pedagogy; Teacher development.

Table of Contents

CHAPTER 1:	1
OVERVIEW OF THE STUDY	1
1.1 INTRODUCTION	1
1.2 RATIONALE AND MOTIVATION OF THE STUDY	1
1.3 BACKGROUND AND STUDY CONTEXT	2
1.4 PROBLEM STATEMENT	4
1.5 RESEARCH QUESTIONS	5
1.5.1 The main research question is:	5
1.5.2 The secondary (sub-research) questions are:	5
1.6 AIM AND OBJECTIVES OF THE STUDY	5
1.6.1 Research aim	5
1.6.2 The research objectives:	6
1.7 SIGNIFICANCE AND CONTRIBUTION OF THE STUDY	6
1.8 RESEARCH DESIGN AND METHODOLOGY	7
1.8.1 Research design	7
1.8.2 Research methodology	7
1.9 RESEARCH POPULATION AND SAMPLING	8
1.10 DATA GATHERING INSTRUMENTS	8
1.10.1 Semi-structured one-on-one interviews	8
1.10.2 Document analysis	9
1.11 ETHICAL CONSIDERATIONS	9
1.12 EXPLANATION OF OPERATIONAL TERMS	9
1.13 OVERVIEW OF THE STUDY	10
1.14 CHAPTER SUMMARY	12
CHAPTER 2:	13
LITERATURE REVIEW AND CONCEPTUAL ANALYSIS	13
2.1 INTRODUCTION	13
2.2 LITERATURE REVIEW ON BUSINESS STUDIES AND ICT INTEGRATION	13
2.2.1 Introduction to the field of Business Studies and ICT integration	14
2.2.2 Context of Business Studies in South Africa	14
2.2.3 Business Studies in the Curriculum and Assessment Policy Statement (CAPS)	15
2.2.4 The purpose of Business Studies as articulated in the CAPS document	17
2.2.5 Teacher requirements for Business Studies	17
2.3 IMPORTANCE OF ICT IN EDUCATION	18
2.4 THE PERCEPTION OF TEACHERS ON THE USE OF ICT	21

2.5	THE PERCEPTIONS OF CONSTRUCTIVISTS ON THE USE OF ICT	23
2.6	TEACHER PRACTICES WHEN INTEGRATING ICT	25
2.6.1	Orthodox View vs Emerging View in ICT integration	27
2.6.2	Process Approach vs Product Approach in ICT integration	35
2.6.3	The Generative use of ICT vs The Representational Use of ICT	37
2.7	DIFFERENT APPROACHES TO TEACHING BUSINESS STUDIES	37
2.7.1	Project Based learning.....	40
2.7.2	The Cooperative and The Collaborative learning	41
2.8	ICT INTEGRATION AND TEACHER PRACTICES- A CONCEPTUAL REVIEW.....	47
2.8.1	Interactive Equivalency Theorem	48
2.8.2	Taxonomy of ICT Affordance	49
2.8.3	The ICT classroom context.....	51
2.8.4	The interactive Flat Panel display in the classroom	52
2.9	CHAPTER SUMMARY	54
CHAPTER 3: THEORETICAL AND CONCEPTUAL FRAMEWORK		55
3.1	THEORETICAL FRAMEWORK.....	55
3.1.1	INTRODUCTION	55
3.1.2	BACKGROUND OF THE SAMR MODEL.....	56
3.1.2.1	Substitution	59
3.1.2.2	Augmentation	59
3.1.2.3	Modification	60
3.1.2.4	Redefinition	60
3.1.3	EVOLUTION AND TRAJECTORY OF THE SAMR MODEL	61
3.1.4	BENEFITS OF USING SAMR MODEL.....	63
3.1.5	CRITICISM OF THE SAMR MODEL	64
3.1.5.1	Oversimplification of technology integration.....	65
3.1.5.2	Lack of Empirical Evidence.	65
3.1.5.3	Focus on Technology Over Pedagogy.....	65
3.1.5.4	Limited Scope of Application	65
3.1.5.5	Potential for Misinterpretation	66
3.1.6	THE APPLICATION OF THE SAMR MODEL INTO THIS STUDY.....	66
3.2	CONCEPTUAL FRAMEWORK	67
3.3	CHAPTER SUMMARY	68
CHAPTER 4:.....		69
RESEARCH DESIGN AND METHODOLOGY		69
4.1	INTRODUCTION	69

4.2	RESEARCH PHILOSOPHY AND RESEARCH PARADIGM	69
4.2.1	Research philosophy	69
4.2.2	RESEARCH PARADIGM.....	70
4.3	RESEARCH DESIGN AND METHODOLOGY.....	72
4.3.1	Research design.....	72
4.3.2	Research methodology.....	73
4.4	RESEARCH SITE, POPULATION, SAMPLING AND PARTICIPANTS' PROFILES	75
4.4.1	Research site.	75
4.4.2	Research Population	75
4.4.3	Research sampling.....	76
4.4.4	Research profiles.	77
4.5	DATA COLLECTION TOOLS.....	80
4.5.1	Semi-structured individual interviews	80
4.5.2	Document Analysis	81
4.6	DATA ANALYSIS AND INTERPRETATION	82
4.6.1	Method of qualitative data analysis	82
4.7	THE STANDARDS RELATING TO VALIDITY, RELIABILITY, AND TRUSTWORTHINESS OF THE STUDY	85
4.7.1	Transferability	87
4.7.2	Credibility	87
4.7.3	Conformability	87
4.7.4	Dependability	88
4.8	ETHICAL CLEARANCE	88
4.8.1	Consent for Voluntary Participation	89
4.8.2	Privacy, anonymity, and confidentiality.	89
4.8.3	Deception of participants	90
4.8.4	Researcher's Actions and Competency	90
4.9	LIMITATIONS OF THE STUDY.....	90
4.10	CHAPTER SUMMARY	91
	CHAPTER 5: ANALYSIS OF RESEARCH CONVERSATIONS.....	92
5.1	INTRODUCTION.....	92
5.2	RESEARCH QUESTIONS RESTATED.....	92
	The main research question is:	92
	The secondary (sub-research) questions are:	92
5.3	DATA ORGANISATION: THEMES AND SUB-THEMES.....	92

5.4	IN-DEPTH EXPLORATIONS OF THEMES GARNERED FROM THE SEMI STRUCTURED INDIVIDUAL INTERVIEWS.	95
5.4.1	THEME 1: The impactful role of educational stakeholders in advancing ICT integration in schools.	95
5.4.2	THEME 2: Teachers' experiences and perceptions of integrating ICT tools into their daily teaching practices.	106
5.4.3	THEME 3: The impact of ICT integration on teaching practices in Business Studies.	126
5.5	CHAPTER SUMMARY	141
CHAPTER 6.....		142
FINDINGS AND RECOMMENDATIONS		142
6.1	INTRODUCTION.....	142
6.2	FINDINGS EMULATED BY THE LITERATURE REVIEW AND EMPIRICAL RESEARCH COVERED BY THIS STUDY.	142
6.2.1	The significant role of teachers in promoting ICT integration in schools.....	142
6.2.2	Teachers' experiences and perceptions of integrating ICT tools into their daily teaching practices.....	145
6.2.3	The impact of ICT integration on teaching practices in Business Studies.....	148
6.3	FINDINGS NOT EMULATED BY THE LITERATURE REVIEW AND THEORETICAL FRAMEWORK COVERED IN THIS STUDY.	152
6.4	RECOMMENDATIONS	153
6.4.1	Recommendations to the significant role of teachers in promoting ICT integration in schools	153
6.4.2	Recommendations for teachers' experiences and perceptions of integrating ICT tools into their daily teaching practices.	155
6.4.3	The impact of ICT integration on teaching practices in Business Studies.....	159
6.5	RECOMMENDATIONS FOR FINDINGS EMANATING FROM THE THEORETICAL FRAMEWORK.....	165
6.6	RECOMMENDATIONS FOR FINDINGS NOT EMULATED BY THE LITERATURE REVIEW AND THEORETICAL FRAMEWORK COVERED IN THIS STUDY.....	165
6.7	CHAPTER SUMMARY	166
CHAPTER 7.....		167
SUMMATIVE REMARKS AND CONCLUSIONS.....		167
7.1	INTRODUCTION.....	167
7.2	SYNOPSIS OF THE STUDY.....	167
7.3	SUMMARY OF RECOMMENDATIONS EMANATING FROM THE STUDY.	169
7.3.1	Summarised recommendations for teachers.....	169
7.3.2	Summarised recommendations for Learners.....	170

7.3.3	Summarised recommendations for Subject Advisors or District Officials	170
7.3.4	Summarised recommendations for Policy Makers	171
7.3.5	Summarised recommendations for the Department of Basic Education	171
7.3.6	Summarised recommendations for Teacher Training Institutions (Universities and Colleges)	171
7.4	FUTURE RESEARCH DIRECTIONS	172
7.5	CONCLUSIONS	172
APPENDICES		203
Appendix A: Turnitin Report Summary		203
Appendix B: University ethics clearance.....		204
Appendix C: GDE clearance letter.....		205
Appendix D: Research Tools		206
PROPOSED INTERVIEW QUESTIONS FOR TEACHERS		206
LETTER TO THE PRINCIPAL		207
LETTER TO THE TEACHER		209
Teacher's Consent Form.....		211
INFORMATION SHEET PARENTS		215
PARENT'S CONSENT FORM		217
INFORMATION SHEET LEARNERS		219
LEARNER'S ASCENT FORM		221

List of Figures

Figure 1: TPACK Model	26
Figure 2: Process approach vs Product approach	36
Figure 3: Interactive Equivalency Theorem	49
Figure 4: ICT Mediated Classroom	52
Figure 5: SAMR Model	58
Figure 6: Conceptual Framework of the Study.....	68
Figure 7: Stages in Qualitative data analysis and interpretation.....	85

List of Tables

Table 1: The four “main topics and sub-topics in Business Studies for the FET” phase.	16
Table 2: Taxonomy of ICT Affordance	51
Table 3: School Profile and Resources	78

Table 4: Participants Profiles	79
Table 5: Themes and Sub-Themes.....	94
Table 6: Themes and sub-themes on the impact of educational stakeholders in advancing ICT integration.	95
Table 7: Themes and sub-themes on the teachers’ experiences and perceptions of integrating ICT tools into their daily teaching practices.	106
Table 8: Themes and sub-themes on the impact of ICT integration on teaching practices in Business Studies.	126

CHAPTER 1:

OVERVIEW OF THE STUDY

1.1 INTRODUCTION

This chapter presents the study entitled "Exploring the integration of Information Communication Technology (ICT) into the pedagogy of Business studies in Johannesburg Central District Schools". The main goal of this study is to determine how school stakeholders (teachers, department heads, principals, subject education specialists, and curriculum designers) have supported and facilitated the conceptual learning of Business Studies in schools through the integration of ICT. First, I will provide the study's background and offer a detailed overview of teaching business studies using ICT instruments. Next, I provide a clear overview of the study's purpose, objectives, assumptions, and significance. Thereafter, I aim to provide a concise overview of the research methodology I have selected, with a more comprehensive analysis in Chapter three. In conclusion, I will provide a concise overview of the chapters in this study, followed by a brief explanation of the key concepts and a summary of this chapter.

1.2 RATIONALE AND MOTIVATION OF THE STUDY

As a child growing up in Zola, Soweto, I witnessed firsthand the difficulties young people face in accessing quality education. Township schools often lacked efficiency, resources and consistent standards, which limited learner achievement. While some teachers showed remarkable dedication, others delivered lessons in ways that did not meet learners' diverse needs.

At secondary school level, teaching followed a "one-size-fits-all" approach. Lessons were rushed, textbook-bound and rarely catered to different learning styles. This left many learners disengaged, particularly those with short attention spans. I personally struggled to remain focused, even in subjects I cared deeply about, such as Business Studies.

After matric, I worked as a computer lab facilitator under the Gauteng Online programme, which aimed to provide township learners with basic computer skills. This role gave me the opportunity to engage with both learners and technology. Later, I qualified as an end-user computer trainer, supporting professionals with ICT tools. Through this work, I built strong relationships with teachers and even stepped in to teach Business Studies lessons when asked.

Encouraged by a friend who had just qualified as a teacher, I eventually left the corporate sector to pursue teaching Economics and Business Studies.

As a student teacher, I gained further experience through Saturday classes at Bhukulani Secondary. Around this time, Gauteng's push for "paperless classrooms" introduced Smart Boards and digital learning, aligning with my own comfort as a "digital native" (Autry Jr. & Berge, 2011). I could see how these tools helped learners with different learning styles remain engaged and I wished I had benefited from such resources in my own schooling. This experience, however, also highlighted that teaching Business Studies with ICT was not straightforward. Schools faced persistent challenges such as limited resources, inadequate infrastructure and insufficient policy support (Amin & Mahabeer, 2021). These barriers slowed implementation and left many teachers hesitant to embrace ICT, often due to differing perceptions of its value. This realisation led me to question how best to support learners who are drawn to technology but not always benefiting from it in meaningful ways.

Previous studies (Koc, 2005; Mohammadi, Abrizah, Nazari & Attaran, 2015; Gebremeskel, Kebede, & Chai, 2016; Tarling & Ng'ambi, 2016) have examined ICT integration, but mostly in terms of training, access, and infrastructure. Few explore teachers' own philosophies and motivations, or learners' perspectives. Wilson-Strydom and Thomson (2005) argue that it is essential to consider both the concept of "integration" and the reasons behind it. These gaps provide the starting point for this study, which seeks to explore how ICT can be integrated into the pedagogy of Business Studies in Johannesburg Central District schools.

1.3 BACKGROUND AND STUDY CONTEXT

The Business Studies curriculum in South Africa is designed to provide learners with a foundational understanding of business concepts, principles, and practices. According to the Curriculum and Assessment Policy Statement (CAPS), the subject aims to equip learners with the knowledge and skills necessary to navigate the complexities of the business world, foster entrepreneurial thinking, and promote economic literacy (Department of Basic Education, 2011). The teaching of Business Studies provides learners with essential knowledge of management, marketing, finance, and entrepreneurship, which are valuable for employment, self-employment, and economic contribution. However, the subject has traditionally been

delivered through lectures, textbooks, and classroom discussions, which limit opportunities for innovation and learner engagement.

The COVID-19 pandemic exposed further weaknesses in the system. Statistics South Africa (2022) found that only 11.7% of schools were able to provide remote learning during the 2020 lockdowns, largely due to technological limitations. This highlighted not only the lack of ICT access but also the limited skills needed to use digital tools effectively in many schools. UNICEF (2021) reported a 54% reduction in contact time across South Africa, a decline that was compounded by poor ICT readiness among both teachers and learners. Such deficiencies risk undermining education and job productivity in the future. As Kim and Park (2020) caution, declining skills among current learners may have significant long-term consequences.

Integrating ICT into Business Studies has therefore become a priority, as it can enhance learning, bridge the gap between education and industry, and improve learners' practical competencies (Bright, 2022; Chen, 2022; Jumde et al., 2023). With rapid technological change and the proliferation of digital tools, there is growing recognition of the need to embed ICT in Business Studies teaching. Research confirms the pedagogical benefits of ICT integration. Bright (2022) shows that digital technologies can improve planning, presentation, assessment, and administrative tasks. Moreover, ICT tools prepare learners for the evolving skill demands of industry by aligning teaching practices with digital workplace realities (Goh, Pan & Yuen, 2020; Jumde et al., 2023).

ICT also improves engagement, collaboration, and learner participation. Torres (2023) notes that digital tools foster collaborative activities and learner confidence, while Malik (2023) highlights their impact on academic achievement, knowledge retention, and critical thinking. Learners themselves express positive attitudes toward technology, recognising its influence on their skills, confidence, and motivation (Yilmaz, Williams, Alegre & Kendrick, 2023). Platforms such as Moodle, Blackboard, and Canvas provide flexible access to content, allow immediate feedback, and support self-assessment (Hamaluba, 2022; Pšenák, Pšenáková, Szabó & Kováč, 2019; Yasa, Agung & Sulindawati, 2023). These findings point to the value of innovation in the classroom and the need for professional development to sustain ICT integration.

In addition to digital platforms, emerging technologies like Virtual Reality (VR) are increasingly applied in education. VR enhances presentation skills, engagement, and creativity

by offering immersive environments where learners can practise and refine competencies (Rencewigg & Joseph, 2024; Yoffie, Jain, Villasenor, Xu & Yang, 2020). Studies indicate that learners using VR display higher cognitive engagement and produce more creative outcomes than those taught through traditional methods (Al-Gindy et al., 2020). Other research shows that VR supports knowledge acquisition, motivation, and practical skills development across disciplines (Moslehi et al., 2022; Luo, 2023). These innovations hold particular promise for Business Studies, where applied, real-world learning is vital.

The broader significance of Business Studies in South Africa underscores the importance of ICT integration. The subject prepares learners for tertiary education in commerce, entrepreneurial ventures, and future participation in the economy (Olatunji, 2017). Entrepreneurship education can reduce unemployment and stimulate economic growth, especially if introduced early at the Further Education and Training phase (Prasakti & Idrus, 2024). Given the role of Business Studies in economic development and the proven value of ICT in improving pedagogy, there is a need to explore how ICT can be effectively integrated into Business Studies teaching and learning. This study therefore examines ICT integration in Business Studies classrooms in schools within Johannesburg Central District.

1.4 PROBLEM STATEMENT

The integration of ICT into educational practice has recently gained considerable attention for its potential to enhance pedagogy (Kandel, 2022). This interest arises within a rapidly changing education system where the role of ICT in teaching remains a central focus of research (Rana & Rana, 2020). Although access to ICT tools and resources is expanding, schools still face persistent challenges in harnessing these technologies effectively, highlighting the need to explore both the obstacles and opportunities of ICT integration in education (Simin, Logeswary & Annreetha, 2016; Mlambo, Rambe & Schlebusch, 2020).

In Business Studies classrooms, these challenges are particularly pressing. This study seeks to investigate the extent to which ICT is currently utilised in teaching, the barriers educators and learners encounter, and the pedagogical benefits that may arise from effective integration. Addressing these issues could enhance the quality of Business Studies instruction and better prepare learners for a business environment increasingly shaped by digital technologies (Kumar et al., 2022).

Recent performance statistics highlight the urgency of this problem. The National Senior Certificate report (GDE, 2018) reveals a decline in Business Studies achievement nationally, with the pass rate dropping from 77.9% in 2014 to 64.9% in 2018. In Gauteng, results fell from 87.7% in 2016 to 74.3% in 2018, with most successful candidates averaging only 30%. Research suggests that continued reliance on conventional lecture methods contributes to this underperformance (Sithole, 2018). Despite evidence that such approaches foster rote learning, low retention, and passive participation (Kimotho, 2016), they remain dominant in classrooms. ICT integration therefore presents an opportunity to enrich pedagogy in Business Studies and raise learner performance. The central aim of this study is to explore how ICT can be meaningfully embedded into the teaching of Business Studies in schools within Johannesburg Central District.

1.5 RESEARCH QUESTIONS

1.5.1 The main research question is:

Is Information Communication Technology (ICT) integrated into the pedagogy of business studies in Johannesburg Central District Schools?

1.5.2 The secondary (sub-research) questions are:

1. What do teachers understand by ICT integration when teaching Business Studies in Johannesburg Central District Schools?
2. How do teachers currently integrate ICT into their teaching of Business Studies in Johannesburg Central District Schools?
3. What are the experiences of teachers who have integrated ICT into their teaching of Business Studies in Johannesburg Central District Schools?

1.6 AIM AND OBJECTIVES OF THE STUDY.

1.6.1 Research aim.

Considering the above research question and secondary questions, the aim of the study is to explore the integration of ICT into the pedagogy of Business studies in Johannesburg Central District Schools.

1.6.2 The research objectives:

The research objectives of this study are as follows:

1. To explore the understanding of teachers with respect to ICT integration into Business Studies in Johannesburg Central District Schools.
2. To examine ways in which teachers integrate ICT in their teaching and learning encounters in the current South African Business Studies classroom in Johannesburg Central District Schools,
3. To unpack the experiences of teachers who have integrated ICT into their teaching of Business Studies in Johannesburg Central District Schools.

1.7 SIGNIFICANCE AND CONTRIBUTION OF THE STUDY

Several studies have investigated modern curricula and teaching methods worldwide, with particular attention to the effectiveness of ICT in supporting teaching and learning (Amin & Mahabeer, 2021; Pinar, 2021). Research shows that curriculum implementation often varies across economic sectors, largely due to infrastructural limitations that hinder the use of ICT during times of crisis (Manyongo & Ngubane, 2021). Against the backdrop of the Fourth Industrial Revolution and increasing reliance on technology, it is essential to conduct empirical research on ICT integration in Business Studies. This study therefore seeks to generate insights for stakeholders on how ICT can be effectively embedded in FET Business Studies to enhance pedagogy and extend learning beyond the classroom.

The study also aims to identify both the challenges and benefits Business Studies teachers experience when using ICT to deliver the curriculum in today's demanding context. Its findings are expected to inform curriculum designers and policymakers by highlighting the relationship between policy intentions and classroom realities, contributing both theoretical and practical knowledge to the field.

Most previous research on ICT integration has focused mainly on infrastructure and access (Lim & Khine, 2006; Ndlovu & Lawrence, 2012) and has struggled to establish a comprehensive conceptual framework (Du Plessis & Webb, 2008; Graham, 2011). This study extends the literature by examining the teaching practices used to incorporate ICT in Business Studies, particularly within South African schools where such challenges are most acute.

1.8 RESEARCH DESIGN AND METHODOLOGY

1.8.1 Research design.

Research design (RD) provides a framework for collecting and analysing data to answer research questions (Johnson & Christensen, 2024). In their explanation, McMillan and Schumacher (2010) provide a clear and structured definition of research design. They describe it as a detailed plan encompassing the necessary conditions, steps and methods for collecting and analysing data. Specifically, this study adopts a qualitative research design (see chapter four). RD outlines the methodology for gathering empirical evidence to address each research question. Maree (2007) explains that RD involves selecting specific participants, determining appropriate data-gathering methods and collecting data. To address the research question and sub-questions, the selection of RD was a crucial decision made for this study. The formulation of RD helps to outline the structure of my study by summarising the procedures and processes used to conduct it. The RD was utilised to effectively strategise and generate concrete evidence to address the research questions (McMillan & Schumacher, 2006). In addition, the crucial enquiries posed in the determination of the RD, as outlined by Wilson (2014), were carefully examined. This provided a comprehensive understanding of the effectiveness and constraints of different research methodologies and methods.

1.8.2 Research methodology.

Research methodology, as described by Leedy and Ormond (2005), refers to the fundamental methods that researchers use in their projects, including the tools and techniques applied in the study. Nyathi (2015) expanded the scope of research methodology to encompass the full research process, spanning from theoretical underpinnings to the collection and interpretation of data. Betts (2024) defines research methodology as the collection of methods, tools, processes, techniques, and procedures that are distinctive to a study. The primary classifications of research methodologies include quantitative, qualitative, and mixed methodologies (McMillan & Schumacher, 2010). These methodologies impact the research procedures, data gathering, analysis tools, and guiding philosophies. According to McMillan and Schumacher (2010), several approaches can be appropriate when used correctly. This study employed a qualitative research methodology to explore the integration of Information Communication Technology (ICT) into the pedagogy of business studies in Johannesburg Central District Schools. A qualitative research methodology was chosen to address the study's enquiries.

Pandey (2024) argues that qualitative research prioritises the exploration of real-world contexts and does not rely on statistical processes or quantification to generate findings. According to Hasan Emon (2024), qualitative research entails gathering data through words, which are then analysed through interpretation rather than statistical approaches. This study utilised a generic qualitative research approach within an interpretive paradigm to obtain a thorough comprehension of participants' experiences, events, and situations (Cleland, 2017). The study employed semi-structured individual interviews and document analysis to explore the research questions.

1.9 RESEARCH POPULATION AND SAMPLING

According to McMillan and Schumacher (2010), a population is a collection of objects, events, or individuals meeting specific criteria used to streamline research findings. This study focuses on six purposefully selected secondary public schools in the Johannesburg Central district of the Gauteng Province of South Africa. Utilising purposive sampling, the study involved six Business Studies teachers from six purposefully chosen schools within the Gauteng province, all of which adhered to the CAPS curriculum as prescribed by the Department of Basic Education. This selection allowed for a comparative analysis of ICT integration across different schools to identify successful systems that could be implemented in other schools. As Lix, Ahmed, Fung, Al-Azazi, and Hamm (2024) advocated, research should be conducted across multiple sites to yield more reliable results. It is worth noting that while all schools offering Business Studies are recognised as research sites, they employ different strategies for teaching, learner engagement, and assessment due to technological variations.

1.10 DATA GATHERING INSTRUMENTS

Document analysis and semi-structured individual interviews were the two data collection methods that I used for collecting data for this study. This is briefly explained below.

1.10.1 Semi-structured one-on-one interviews

This study adopted a semi-structured one-on-one interview which allowed the use of open-ended questions to gather information. The aim of the interview was to gather information that would be essential in providing facts, perspectives, sentiments, ideas, opinions, beliefs, and philosophies pertaining to the subject matter being reviewed (Maree, 2007; Punch, 2009; Cohen, Manion & Morrison, 2011). According to Bloom, Alexander-Urquhart, and Falcão

(2024), interviews provide a wealth of opportunities for interviewers to gather data based on participants' firsthand experiences and the interpretations attached to those experiences.

1.10.2 Document analysis.

Document analysis is a technique used to gather research data from sources such as videos, journals, letters, internal and external school policies, diaries, minutes of meetings, and other structured note-taking methods (McMillan and Schumacher, 2010). Consequently, the CAPS document for teaching business studies, the updated yearly teaching plans (R-ATP), and the updated examination rules for business studies were the basis for the document analysis conducted in this study. This is also in accordance with Johnson and Christensen (2012), who view document analysis as one of the most useful sources of data for research.

1.11 ETHICAL CONSIDERATIONS

According to McMillan and Schumacher (2010), the researcher is ethically and legally responsible for protecting the interests and well-being of the participants in a study. Therefore, written consent from the principals of the designated schools as well as the Gauteng Department of Education (GDE) was obtained to conduct this research in an ethical and legal manner. Furthermore, before beginning the data generation procedure, ethical clearance from the University of Witwatersrand Ethics Committee was acquired. All participants were required to sign a consent form. This form gave a brief overview of the study conducted and made it clear that participation was completely voluntary.

To ensure the privacy and anonymity of all information collected for this study, pseudonyms were employed to guarantee the confidentiality of all participant names and school names (Leedy & Ormrod, 2010).

1.12 EXPLANATION OF OPERATIONAL TERMS

For the purposes of this study, the following terms are understood and interpreted as follows:

Information and communication technology (ICT) is the combination of networks, hardware, and software with tools for engagement, collaboration, and communication (Department of Education, 2004). Moreover, the Basic Department of Education (2004) keeps bringing up a few instances that are thought to be fundamental components of ICT. Hardware including PCs,

laptops, DCs, DVDs, scanners, digital cameras, and interactive whiteboards are among them (Siddiqui, 2024; Thomas & Schmid, 2010).

Curriculum and Assessment Policy Statement (CAPS): a curriculum that was enhanced to provide excellent teaching and learning through standardised curriculum coverage. The National Curriculum Statement contains "policy documents stipulating the aim, scope, content, and assessment for each subject" (DBE, 2011, p. 3).

Annual Teaching Plan (ATP): An official document provided to aid educators and provide guidance on how to carry out the teaching plan. It also highlights important details and offers recommendations for the abilities that educators should possess to successfully teach the material as it is written. According to Ajibade and Bertram (2020), ATP is supplied to illustrate the projection of a specific portion of content coverage for a given subject that should be addressed.

Blended learning refers to a variety of instructional strategies that combine traditional classroom teaching techniques with online digital media (Watson, 2008).

1.13 OVERVIEW OF THE STUDY

-Chapter 1-

This chapter aims to provide background information about the study and the context from which it is coming. The overall goal and purpose of this investigation are presented in this chapter. The problem statement is described, the reasoning behind the research, the study's importance, and its contribution are covered. A summary of the research methodology, techniques, ethical issues are also provided in this chapter.

-Chapter 2-

This chapter reviews the literature to place the study within the current conversation about the use of ICT in business studies instruction. The Curriculum and Assessment Policy Statement (CAPS) criteria for teaching business studies are covered in the first section of this chapter. A discussion of constructivist perceptions regarding the ways in which teachers use ICT in the classroom—to of business studies, as well as instructors' perspectives on this regard, is included. Finally, this chapter discusses several methods of teaching business studies and aims to clarify the necessity of integrating ICT into business studies instruction.

-Chapter 3-

In this chapter, I present the Theoretical Framework for this study which will be the lens that I use to both interpret and analyse the data that will be collected. The SAMR model will be discussed at length, where its background will be clearly explained, its benefits and criticism will be considered, and lastly, how it applies to this study will be explained. The SAMR model will also be used to guide the recommendations for the findings established in this study.

-Chapter 4-

Throughout this chapter, I go over the research design and technique that were used in this study to give the reader a better understanding of the strategy I used to collect and analyse participant data. Finally, an explanation of the ethical and trustworthy issues is also included in this chapter.

-Chapter 5-

This chapter presents the data generated through semi-structured individual interviews. The presentation of the data will be guided by the themes and subthemes that emerge from the patterns of responses provided by the participants. Direct quotation of the participants will be used in this chapter to ensure that their responses are captured in their true context.

-Chapter 6-

The purpose of this chapter is to present findings and propose recommendations which will be relevant to the research objectives as well as the context of South Africa. The findings and recommendations will also be presented under the same themes and subthemes established in Chapter 5. The recommendations presented will be linked to the literature reviewed in Chapter 2, as well as the theoretical framework discussed in Chapter 3.

-Chapter 7-

This chapter presents a summary of the study, giving specific attention to the research aims and objectives. A synopsis of the study will be presented in this chapter, followed by a summary of the recommendations according to all stakeholders that may be affected in this study. This chapter also presents the limitations of the study and future research directions. A conclusion of the study will then be presented before the list of references is presented.

1.14 CHAPTER SUMMARY

This chapter attempts to elucidate the study's background and viewpoint. Additionally, this study attempts to solve the present gaps in the subject of Business Studies which may be caused by the integration or lack of integration of ICT in the teaching process. Furthermore, claims are also made to support the necessity of doing this study by pointing out the successes and achievements that business studies teachers have made in incorporating ICT learning into the classroom in the recent past.

Chapter Two presents the literature review.

CHAPTER 2

LITERATURE REVIEW AND CONCEPTUAL ANALYSIS

2.1 INTRODUCTION

The previous chapter introduced the study on ICT integration in the subject of Business Studies through the framing of the background, the problem statement, purpose and rationale, research objectives, and outline of the entire study guided by three sub-questions: (a) What do teachers understand by ICT integration when teaching Business Studies in Johannesburg Central District Schools? (b) How do teachers currently integrate ICT into their teaching of Business Studies in Johannesburg Central District Schools? (c) What are the experiences of teachers who have integrated ICT into their teaching of Business Studies in Johannesburg Central District Schools? These questions sought to serve as guidance in answering the main question which seeks to determine whether or not ICT is being integrated into the pedagogy of business studies in Johannesburg Central District Schools. This chapter reviews pertinent literature on ICT integration, drawing precisely from theory and empirical studies which were conducted on ICT integration in the field of education. It draws upon domestic and international literature with respect to what shapes the discernments, attitudes and practices of teachers in integrating ICT in the classroom by interrogating the hypothetical point of view on what influences ICT integration and how these hypothetical viewpoints influence the utilisation, perceptions and practices of teachers.

2.2 LITERATURE REVIEW ON BUSINESS STUDIES AND ICT INTEGRATION.

A literature review is well defined as an analysis of trends and debates in a certain discipline which defines the past as well as the current research on a particular topic (Pandey, 2024). In support of the above statement, Ebidor and Ikhide (2024) state that a literature review makes available a level of consciousness and limitations of what previous studies have to say on a particular matter. Ferreira (2012) declares that literature review gives a basis of knowledge for the enquiry at hand and empowers the researcher to better comprehend the research problem and the ground of study. Hence, appropriate viewpoints in the literature which include the background of the subject of Business Studies as stated in the Curriculum and Assessment Policy Statement (CAPS), were reviewed. This led to a review of the literature on the different

approaches to teaching Business Studies. This is followed by a review on literature about the teachers' perceptions on the use of ICT as well as teacher practices in the use of ICT.

2.2.1 Introduction to the field of Business Studies and ICT integration.

The integration of ICT into education has transformed the teaching landscape, particularly in subjects such as Business Studies, where digital tools can enhance learning experiences and engagement (Makura, 2014; Msila, 2015). As teachers increasingly adopt these technologies, understanding their perceptions is crucial for effectively implementing ICT strategies that align with pedagogical goals and improve learner outcomes (Akram et al., 2022; Chisango et al., 2020; Kgosi et al., 2023). This literature review aims to explore the various perceptions of teachers regarding ICT usage in Business Studies classrooms, examining factors such as training, access to resources, and the impact on teaching methodologies (Akram et al., 2022; Chisango et al., 2020; Kgosi et al., 2023). The findings of this review will provide valuable insights into the challenges and opportunities that teachers face, ultimately guiding future professional development initiatives and policy decisions in South Africa's educational context (Investigating the Barriers of ICT Use in Teaching and Learning at Public Schools in South Africa, 2022). By identifying the key areas of concern and success, this review contributes to a more nuanced understanding of how ICT can be used to foster an engaging and effective learning environment in Business Studies (Akram et al., 2022; Shambare & Jita, 2024). This exploration also highlights best practices and innovative strategies that can be adopted to enhance the integration of technology in teaching, ensuring that both teachers and learners benefit from a more interactive educational experience.

2.2.2 Context of Business Studies in South Africa

Business studies in South Africa is a vital component of the educational landscape, providing learners with essential knowledge and skills related to economics, finance, and entrepreneurship that are crucial for navigating today's competitive job market (Shah, 2022). Integrating real-world applications and case studies into the curriculum can further enhance learners' understanding of these concepts, preparing them for future challenges in the business environment (Memon & Abdullah, 2024). By fostering partnerships with local businesses and industry leaders, educational institutions can create opportunities for learners to engage in practical experiences that bridge the gap between theory and practice (Wilson, 2017). This hands-on approach not only enriches the learning experience but also equips learners with the confidence and expertise needed to succeed in their careers (Guo, Everage, & Zhang, 2024).

Employers increasingly seek candidates who can demonstrate not only theoretical knowledge but also practical skills that are applicable in real-world situations, making such initiatives vital for learner success (Ansari, 2024). As a result, integrating experiential learning into academic programs is essential for cultivating a workforce that is both knowledgeable and adaptable to the ever-evolving demands of the job market (Horany, 2022). The integration of ICT into this can enhance the learning process by providing learners with access to a wealth of resources, tools, and platforms that facilitate collaboration, innovation, and problem-solving in real-time scenarios which can also be beneficial for those who collaborate with diverse teams across various industries (Anastasopoulou, Tsagri, Avramidi, Lourida, Mitroyanni, Tsogka, & Katsikis, 2024). This approach not only prepares learners for immediate employment but also equips them with the skills necessary to thrive in a dynamic and interconnected global economy. By fostering critical thinking and creativity, experiential learning combined with ICT empowers learners to become proactive and navigate complex challenges and contribute meaningfully to their organisations (Thaanyane & Jita, 2024). This transformative educational model encourages lifelong learning, enabling individuals to adapt to the ever-evolving demands of the workforce while cultivating a sense of responsibility and ethical awareness in their professional pursuits (Jedrinović et al., 2019).

2.2.3 Business Studies in the Curriculum and Assessment Policy Statement (CAPS).

South Africa is a former British colony and therefore shares features of the curriculum restructurings that took place in countries such as the United Kingdom, Australia, New Zealand, Canada and briefly the United States of America (Gumede & Biyase, 2016). These colonial influences have shaped South Africa's educational landscape, resulting in a diverse system that aims to address both historical inequalities and contemporary global standards in education (Rapanyane, 2024). The integration of various educational philosophies and practices has led to a unique approach that seeks to balance local needs with international benchmarks, fostering an environment where learners can thrive in a globalised world (Tella, 2022). Therefore, it is not surprising that the subject of Business Studies is offered in secondary schools in South Africa. There are 12 organising fields for approved subjects in terms of the National Qualifications Framework (NQF), and the subject of Business Studies is categorised in the field of Business, Commerce and Management Studies (DBE, 2011). There is a total of 29 subjects (including Business Studies) offered in the Further Education and Training (FET)

phase that fall under commercial subjects (Russel, 2009). Business Studies is described as a subject that:

deals with the knowledge, skills, attitudes, and values critical for informed, productive, ethical, and responsible participation in the formal and informal economic sectors. The subject encompasses business principles, theory, and practice that underpin the development of entrepreneurial initiatives, sustainable enterprises, and economic growth (CAPS document, 2011).

The subject of Business Studies is divided into four main topics”, namely the “Business Environment, Business Ventures, Business Roles and Business Operations” (CAPS document, p. 8). Each of these topics has a variety of subtopics and has a total of 25% weighting per main topic. The main topics are standardised in the FET phase for Business Studies. There are two main topics covered per schooling term, with a selection of sub-topics (GDE, 2017). Table 1 shows the list of all subtopics covered throughout the year.

Table 1: The four “main topics and sub-topics in Business Studies for the FET” phase.

Weighting of Curriculum	Topic
Business environment (weighting 25%)	Micro, market and macro environments
	Business sectors
	Contemporary socioeconomic issues
Business venture (weighting 25%)	Entrepreneurship
	Business opportunity and related factors
	Business Plan
	Management and Leadership
	Forms of ownership
	Setting up a business
	Contracts
	Business location
	Investment: securities and insurance
	Presentation of business information
Business role (weighting 25%)	Creative thinking and problem-solving
	Self-management, professionalism and ethics
	Human rights, inclusivity and environmental issues.
	Social Responsibility
	Stress, crisis, change and conflict management
	Relationship and team performance
Business operation (weighting 25%)	Business functions
	Quality of performance

Source 1: Business Studies CAPS document (2011, p. 8)

2.2.4 The purpose of Business Studies as articulated in the CAPS document

The purpose of Business Studies is articulated in the CAPS document (2011, pp 8-9). First, it guarantees that learners will “acquire and apply essential business knowledge, skills, and principles to productively and profitably conduct business in changing business environments”. Second, learners will “create business opportunities, creatively solve problems and take risks, respecting the rights of others and environmental sustainability”. Third, the purpose of Business Studies is to produce learners that “apply basic leadership and management skills and principles while working with others to accomplish business goals”. The fourth purpose is to scaffold learners into being “motivated, self-directed, reflective lifelong learners who responsibly manage themselves and their activities while working towards business goals”. The fifth purpose is to produce learners that “are committed to developing themselves and others through business opportunities and ventures”. The sixth and last purpose of Business Studies is to ensure that learners “are able to secure formal employment and are in a position to pursue sustainable entrepreneurial and self-employment career pathways” (CAPS document, 2011, pp 8-9). With technology playing a role in many different sectors of the economy, integrating ICT in teaching Business Studies becomes a necessity when attempting to align learners with the purpose of the subject. ICT integration could also assist in producing learners who are technologically inclined, as they will be exposed to technology before they exit the schooling system.

2.2.5 Teacher requirements for Business Studies

The CAPS document (2011, p. 9) states that a teacher should have a variety of textbooks for reference and a “Partnership’s Articles of Association”. Furthermore, the CAPS document (2011, p. 9) states that there should be a collection of legislation that the teacher should have. This collection of legislation includes [but is not limited to] the “Companies Act, 71 of 2008, Employment Equity Act No. 55 of 1998, National Credit Act No. 34 of 2005, Consumer Protection Act No. 68 of 2008, Basic Conditions of Employment Act No. 75 of 1997, Labour Relations Act No. 66 of 1995, Black Economic Empowerment Act No.53 of 2003, Skills Development Act No.97 of 1998, Compensation for Occupational Injuries and Diseases Act No. 130 of 1993, Hire Purchase Act, Long-term Insurance Act No. 52 of 1998 [and the] Short-term Insurance Act No. 53 of 1998” (CAPS Document, 2011, p. 9).

In addition to the requirements stipulated in the CAPS document, Sithole and Lumadi (2012) asserts that to effectively teach Business Studies, a teacher needs to possess extensive knowledge of instruction and learning, content knowledge of the subject, technical and soft skills which are accompanied by relevant qualifications that enable them to engage learners effectively and adapt their teaching methods to meet the diverse needs of learners in the classroom. In concurrence, Mohsin (2024) states that to teach Business Studies with the aim of promoting the learners' learning and engaging in lifelong learning, the teacher needs to master the subject knowledge and know effective pedagogy. Schreurs and Dumbraveanu (2014) suggested the attributes that teachers must possess and be able to do. These attributes include a teacher being able to: (a) "identify and to describe the learning outcomes of the curriculum"; (b) "construct and to implement the curriculum map of alignment"; (c) "define the learning outcomes per each program course"; (d) "identify and implement the appropriate teaching, learning and assessment techniques to guarantee the fulfilment of the constructive alignment"; and lastly (e) "provide evidence of quality assurance of the approaches used" (Schreurs & Dumbraveanu, 2014, p. 1). Integrating ICT into the above-mentioned attributes could enable teachers to promote life-long learning and also allow teachers to effectively execute their duties in a quicker and sustainable way.

2.3 IMPORTANCE OF ICT IN EDUCATION

The successful integration of ICT in Business Studies classrooms not only depends on teachers' perceptions but also significantly relies on their professional development and ongoing support systems (Shambare & Jita, 2024). Research indicates that while many teachers acknowledge the potential benefits of digital tools, a lack of adequate training can lead to feelings of inadequacy and resistance to adopting new technologies (Msila, 2015). This highlights the necessity for comprehensive teacher training programs that encompass not only basic computer skills but also pedagogical strategies tailored for integrating ICT into specific subjects such as Business Studies (Gamage & Tanwar, 2018; Ndlovu & Moll, 2016; Shambare & Jita, 2024). By fostering an environment where teachers feel competent and supported, schools can enhance the overall educational experience, ultimately leading to improved learner engagement and learning outcomes. As such, crafting targeted professional development initiatives is vital for equipping teachers with the confidence and skills needed to effectively utilise technology in their teaching practices. Investing in these initiatives not only empowers teachers but also creates a ripple effect that benefits learners, preparing them for a technology-driven future and

fostering the critical thinking skills essential for success in the modern workforce (Kgosi et al., 2023). This holistic approach ensures that both teachers and learners are well prepared to navigate the complexities of a rapidly evolving digital landscape, ultimately bridging the gap between traditional education and innovative learning methodologies (Padayachee, 2017). Such initiatives include hands-on workshops, collaborative learning sessions, and ongoing support networks that encourage teachers to share best practices and innovative strategies for integrating technology into their classrooms. (Boobalakrishnan & Pichandy, 2016).

These efforts not only enhance the teaching experience but also cultivate a culture of continuous improvement, where teachers feel motivated to adapt and evolve their methods in response to emerging trends and tools (Zarabanda, 2019). This dynamic environment fosters a sense of community among teachers, enabling them to collectively tackle challenges and celebrate successes as they embrace new technologies that enhance learner engagement and outcomes (Zarabanda, 2019). By prioritising professional development and fostering collaboration, educational institutions can bridge the gap between conventional teaching methods and modern pedagogical approaches, ultimately preparing learners for a rapidly changing world (Kumar et al., 2022). As technology continues to advance, it becomes imperative for teachers to remain agile and open-minded, continuously seeking innovative ways to incorporate digital tools that not only support their teaching but also empower learners to take an active role in their learning journeys (Gaur, 2025).

While the integration of ICT in education, particularly in Business Studies, is often presented as a transformative approach, it is essential to critically examine the potential drawbacks and limitations associated with this trend. Many teachers may perceive ICT as a beneficial tool, but this perception does not necessarily translate into effective implementation or improved outcomes (Bai, Mo, Zhang, Boswell, & Rozelle, 2016; Kafu-Quvane & Chikoko, 2019). The emphasis on technology can overshadow fundamental pedagogical principles, leading to a reliance on digital tools that may not enhance learning but complicate it (Memon & Abdullah, 2024). Moreover, the assumption that ICT will automatically improve learner engagement and outcomes is overly optimistic. A significant number of teachers face challenges that go beyond training and resource access, such as large class sizes, varying learner abilities, and a curriculum that may not align with digital learning strategies (Ntsobi, 2022; Nyathi & Joseph, 2024; Orhani & Saramati, 2023). These factors can hinder the effective use of ICT and lead to frustration among teachers who feel pressured to adopt technology without adequate support

or consideration of their unique classroom dynamics. Additionally, focusing on professional development initiatives aimed at enhancing teachers' ICT skills may inadvertently divert attention from other critical areas of teacher training, such as classroom management and differentiated instruction (Ghavifekr & Rosdy, 2015). While equipping teachers with technological skills is important, it should not come at the expense of developing their fundamental teaching abilities (Kennedy & Cronjé, 2023). Furthermore, the push for ICT integration in Business Studies may widen the digital divide, creating disparities between schools with ample resources and those without (Thakral, 2015). This can worsen inequalities in education, as learners in under-resourced environments may miss out on the benefits of technology-enhanced learning (Fletcher et al., 2020; Kaur, 2023). In light of these concerns, it is crucial to approach the integration of ICT in education with a balanced perspective, recognising that while technology has the potential to enrich learning, it is not the overall solution (Karpliuk, Moyseyenko, Lysenko, Moroz, & Ігорac, 2024). Effective teaching requires a thoughtful blend of traditional and innovative methods, ensuring that all learners receive a comprehensive education that prepares them for the future without compromising the quality of their learning experience (Chuaungo, Lalnunsiami, & Mishra, 2022).

Furthermore, the challenge of integrating ICT in Business Studies is worsened by the varying levels of digital literacy among both teachers and learners, which can lead to a lack of confidence and uneven participation in technology-enhanced learning environments (Tayaban, 2022). For instance, research indicates that while some teachers show positive perceptions of technology integration, many still struggle with the fundamental skills necessary for effective implementation, often remaining at basic levels of proficiency (Bingimlas, 2009; Dhir & Dubey, 2021). This discrepancy affects teaching methodologies and learner engagement, as learners may feel disengaged or overwhelmed when faced with advanced technological tools without adequate guidance (Chuaungo et al., 2022). Consequently, educational institutions must prioritise tailored training programs that address these disparities, ensuring that all teachers possess a foundational understanding of ICT, alongside pedagogical strategies that foster inclusivity and adaptability within diverse classroom settings (Guo et al., 2024; Jiang, 2023; Ngcapu et al., 2024; Sithole & Mbukanma, 2024). By doing so, schools can create an equitable environment where every learner has the opportunity to thrive in a digitally enriched curriculum, ultimately bridging the gap between varying skill sets and enhancing overall educational outcomes (Akram et al., 2022). Furthermore, collaboration among teachers, technology specialists, and administrative staff is essential to develop comprehensive

professional development initiatives that not only equip teachers with the necessary skills but also promote a culture of continuous learning and innovation within the institution. (Akram et al., 2022; Shah, 2022).

2.4 THE PERCEPTION OF TEACHERS ON THE USE OF ICT

As a Business Studies teacher, I have witnessed first-hand the hesitancy of other teachers to integrate ICT in the teaching process. This could be the result of the different perceptions that the teacher could have. A number of studies have explored teacher perceptions on the use of ICT for teaching and learning (Koc, 2005; Mohammadi, et al., 2015; Gebremeskel et al., 2016; Tarling and Ng'ambi, 2016). These studies however focus more on the barriers that exist which have to do with issues of access to ICT infrastructure, the training of teachers and the learning environment. These studies rarely focus on integral perceptions and motivations related to the philosophies or beliefs of teachers. The reason for this could be the argument put forward by Wilson-Strydom and Thomson (2005) which states that it is challenging to locate the teachers' perceptions on the use of ICT for teaching and learning because it is a task that necessitates the conceptualisation of the concept 'integration' and also the conceptualisation of 'why' teachers integrate.

Answers could be traced back to when teachers were training to become teachers. Assuming that the perception of teachers on the use of ICT is influenced by their attitude towards ICT combined with the lack of exposure to ICT related teaching experience, Dogan (2010) argues that these factors need to be attended to during the training period as a way of ensuring that the skills acquired are used efficiently when stating that:

If trainee teachers have demonstrated proficiency in integrating technology into their teaching but do not believe that technology has a use in the classroom, they will probably avoid teaching with technology. In this respect, attitudes and beliefs about teaching with and about technology [...] could exclude well-planned teaching in teacher training. On the other hand, trainee teachers who believe in the potential and utility of technology in the classroom may persevere through the many challenges that novice technology users face and become models for learners to follow (Dogan, 2010, p. 690).

The attitudes and lack of exposure to ICT should be addressed at the teacher training stage. This can help curb ignorance or lack of interest in integrating ICT into the classroom.

In-service teachers serve as mentors to pre-service teachers, and therefore, ICT-related teaching is minimised during teacher training practicum. Experienced teachers are less likely to integrate ICT into their lessons, while young teachers are more eager to integrate ICT into their lessons (Ankiewicz, 2021). This generational gap in technology adoption can lead to varied teaching approaches, significantly influencing learner engagement and learning outcomes (Memon & Abdullah, 2024). To concur with this statement, Kafu-Quvane and Chikoko (2019) argued that mentor teachers' expectations generally do not cater to ICT integration in the classroom. This negative perception of ICT from in-service teachers is the major opposition to pre-service teachers' use of ICT in their classroom, even when ICT is believed to provide adequate opportunities for meaningful learning and pushing learner conceptualisation in a faster and effective manner (Ankiewicz, 2021; Padayachee, 2017). This is because they are mostly focused on achieving milestones rather than teaching with the intention of providing meaningful knowledge that learners understand and can relate to, as mentioned in the CAPS document (Memon & Abdullah, 2024). Consequently, addressing these perceptions and fostering a culture of innovation among mentor teachers is essential for empowering pre-service teachers to fully utilise ICT tools in their teaching practices, ultimately enhancing learner engagement and learning experiences (Jita & Sintema, 2022; Msila, 2015). Teachers therefore need to find ways of planning the delivery of their lessons while staying in line with the Annual Teaching Plan (ATP) which guides them on what they should be teaching at the time. Proper planning of the presentation of the lesson while using ICT could lead to a more effective and exciting classroom which provides meaningful knowledge which they can visualise and relate to because of how ICT was utilised to present the content.

Dinh (2015) and Steiner and Mendelovitch (2017) attest that meaningful knowledge that learners understand is feasible through the integration of ICT. Their findings suggest that most teachers have a positive perception of ICT integration because it promotes simulated learning and relevance. Furthermore, Steiner and Mendelovitch (2017) found that in the subject of science, teachers found ICT useful in their teaching, especially in promoting learners' concentration and active learning.

The teachers' role in utilising ICT is contingent to their willingness to use it (Alzaidiyeen, Leong, & Fong, 2010; Groff & Mouza, 2008; Hew & Brush, 2007; Mirzajani, Mahmud, Ayub, & Wong 2016). Teachers need to be willing to prepare lessons through ICT and learn new skills which can assist them in the process of interacting with the technology in the ICT classroom. However, Dinh (2015) believed that teachers' beliefs, knowledge, skills, and attitudes are important factors in utilising ICT in the teaching process. Similarly, Shah and Empungan (2015) posit that attitudes toward the utilisation of ICT tend to imitate the general feelings of teachers and learners towards ICT. Wilson-Strydom and Thomson (2005) are of the view that teachers' epistemological assumptions influence their perceptions of the use of ICT for teaching and learning. Similarly, Mohammandi et al. (2015) posit that the skills, pedagogic value, and philosophy that teachers endorse reflect the choice of technologies that teachers choose. Unlike previous studies (Hew & Brush, 2007; Groff & Mouza, 2008) which contend that teachers' role is more important in ICT, Sabiri (2020) proclaims that the teacher is the most significant factor in the process of integrating ICT in teaching. Furthermore, Sabiri (2020) found a link between the use of technology and the years of experience of the teacher; nevertheless, did not find no connection between gender and ICT use was found. The above debates clearly indicate the gaps that exist in relation to the perceptions of teachers and the utilisation of ICT in teaching. The training process and age of the teachers seem to be the major influences on the perception of integrating ICT into the classroom.

2.5 THE PERCEPTIONS OF CONSTRUCTIVISTS ON THE USE OF ICT.

Considering that the theoretical framework adopted in this study is extracted from constructivism as a learning theory, this section will focus on constructivism as a learning philosophy, in which Moll (2013) states that it will provide a different way of thinking about integration. Therefore, I will expand on how this learning philosophy influences the perceptions of teachers, in other words, this approach challenges the reader to think and work in light of teacher practice, action and motivation inside the classroom about the utilisation of ICT for teaching and learning.

Constructivism is an expansion which originates from behaviourism, then moves to cognitivism, and finally to constructivism. This is not only growth in epistemology and progress in learning psychology, but it is also a transformation of the outdated traditional education methods into a more dynamic and interactive approach that encourages critical

thinking, collaboration, and real-world application of knowledge (Sharma & Bansal, 2017). This shift in educational philosophy emphasises the importance of active learning environments where learners can construct their own understanding through hands-on experiences and collaborative projects, thus preparing them for the complexities of modern society (Mijanović, 2023). By fostering an environment that values enquiry and exploration, constructivism not only enhances learner engagement but also cultivates essential skills such as problem-solving and adaptability, which are crucial for success in today's rapidly changing world (Mugambi 2018). As teachers embrace this paradigm shift, they are increasingly integrating technology and innovative teaching strategies that support personalised learning experiences, allowing learners to thrive in diverse ways, tailored to their individual strengths and interests (Ardiansyah & Ujihanti, 2017; Mijanović, 2023). This shift not only empowers learners to take ownership of their learning but also encourages a lifelong passion for knowledge that extends beyond the classroom (Mijanović, 2023). Additionally, Turza (2023) argues that the process of learning is where knowledge is constructed in which the learners are the main participants of the learning process where they independently construct knowledge on their own with the teacher guiding the process of knowledge construction. This collaborative approach fosters critical thinking and problem-solving skills, enabling learners to engage more deeply with the material and apply what they have learned in real-world contexts Turza, (2023).

Inside a classroom that subscribes to constructivism, the learners are presumed to be social and active participants in the process of learning. According to Gebremeskel et al. (2016), constructivism emphasises learners' ability to construct their own connotation of innovative information as they engage with the content and interact with others in the classroom. Subsequently, constructivism assumes that teachers should create an environment for learning which will grant learners the opportunity to construct their own skills and knowledge through interaction, experience, and the necessary support from an adult. As articulated in the CAPS document (2011), the subject of Business Studies requires learners to develop core problem-solving skills in their process of learning which they will be able to utilise on their quest of becoming active participants of the economy. In concurrence, Moll (2013) proposes three separate predispositions which are in support constructivism. First, Moll (2013) posits that knowledge is externally acquired and learned from experience or audio-visual presentations. The second predisposition links to the new conceptualisation of innate factors concerning the

development of reasoning and how these factors relate to maturation which is viewed as a precondition to learning but not regarded as the result of learning (Moll, 2013). The third predisposition relates to the idea of utilising applications or technologies that promote interaction among learners through activity-based learning (Moll, 2013). Therefore, the activities of learners should be based on problem solving driven by teachers' ability to formulate and structure activities that challenge learners and motivate them to become critical thinkers. ICT can be operationalised in this process through the use of ICT interfaces such as interactive whiteboards which allow learners to interact with the device and other learners through the proper planning of activities designed by the teacher. Based on the above discussion, it is evident that this learning theory has some assumptions about learners and teachers, as well as how learning ought to take place (Siddiqui, 2024). The next section focuses on ICT integration and the teacher practices used in teaching Business Studies. ICT can be linked to constructivism when taking into consideration how the subject matter is shared and how learning is achieved through active engagement with the learners (Chand, 2018). Furthermore, the link between ICT and constructivism exists through the integration of active learning which will be further discussed later on in this chapter under the model of cooperative or collaborative learning.

2.6 TEACHER PRACTICES WHEN INTEGRATING ICT.

On the one hand, a number of authors (Dinh, 2015; Empungan, 2015; Mohammandi et al., 2015; Wilson-Strydom & Thomson, 2005) are of the view that teacher practices are influenced by beliefs, perceptions, knowledge, and skills which results in effective teaching while using ICT. On the other hand, Koehler and Mishra (2009) utilised Technological Pedagogical Content Knowledge (TPACK) to identify knowledge domains required for effective teaching with ICT. TPACK is an instrument which can be utilised to investigate pedagogically sound ways in which technology can support both teachers' and learners' knowledge while ensuring that it remains on par with the technology, content, and pedagogy frameworks (Brantley-Dias & Ertmer, 2013). Hilton (2016) states that TPACK is an extension of Shulman's (1989) concept of Pedagogical Content Knowledge (PCK) which incorporates the links between Content Knowledge (CK), Pedagogical Knowledge (PK) and Technological Knowledge (TK) (Harris & Hofer, 2011; Voogt, Fisser, Pareja Roblin, Tondeur, & van Braak, 2013), which in turn contributes towards teacher competences which are needed for effective classroom technology integration (Brantley-Dias & Ertmer, 2013). Figure 1 below which was created by

Mishra and Koehler (2006), is a common representation of the TPACK model which seems to suggest that each of the three domains work individually and also together at the same time while demonstrating that effective teaching with technology needs the ability to comprehend and design learning activities that simultaneously draw on the three areas namely the CK, the PK and the TK (Archambault & Barnett, 2010; Harris & Hofer, 2011; Koehler & Mishra, 2009; Hofer & Grandgenett, 2012).

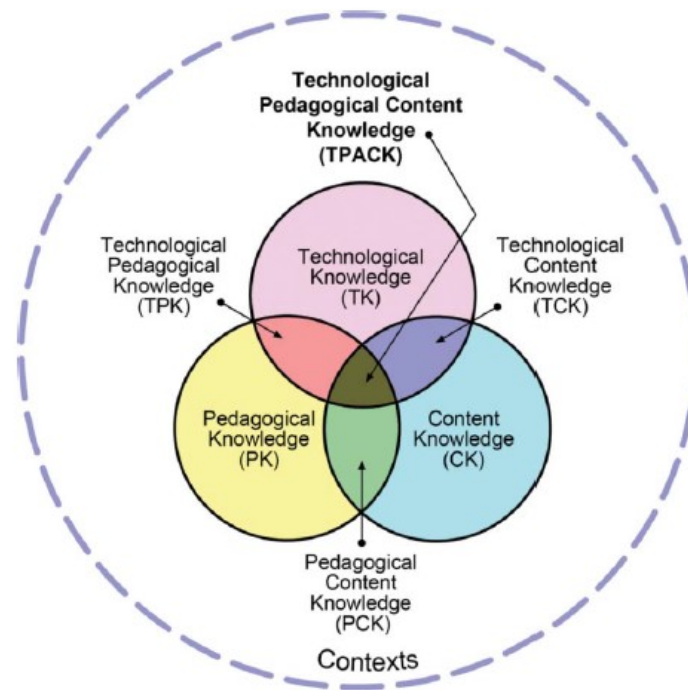


Figure 1: TPACK Model

Source: <http://www.tpack.org/>

However, Mishra and Koehler (2006) did not make it clear what these knowledge domains are in terms of attempting to define the type of knowledge that forms each constituent. Although it is easy to conceptualise ICT integration using the TPACK model, its shortcomings of TPACK are the difficulty in identifying these domains in teachers' practices. Meanwhile, CAPS (2011) is clear on its requirements that teachers should develop good content, pedagogical and assessment knowledge and skills which are necessary for teaching and learning given the deployment of ICT into schools to promote the latter.

Therefore, a more theoretical invention of the link between TPACK knowledge domains and what teachers do in precise learning contexts needs more than one theory to develop the link

between TPACK and teaching activities. Presented below are practices that have been observed.

2.6.1 Orthodox View vs Emerging View in ICT integration

Because there are two opposing positions that propose two different perspectives on how technology and pedagogy are both comprehended, it can be argued that the fields of educational technology and pedagogy are not yet conversing with one another. According to Dron (2012), there is the orthodox view of ICT integration as well as an emerging view of ICT integration. The debate surrounding the Orthodox and Emerging Views in ICT integration highlights the contrasting philosophies and approaches to incorporating technology into educational practices (Mishol-Shauli, Shacham, & Golan, 2019). These differing perspectives influence not only how technology is integrated into classrooms but also the broader implications for teaching and learning outcomes (Gros, 2016). Understanding these two viewpoints is essential for teachers and policymakers as they navigate the complexities of technology integration to enhance learner engagement and improve educational effectiveness (Chuaungo et al., 2022). The Orthodox View typically emphasises a structured, traditional approach to technology use, often focusing on established pedagogical methods and the importance of teacher-led instruction in the classroom. In contrast, the Emerging View advocates for a more flexible and innovative approach, prioritising learner-centred learning experiences that leverage technology to foster creativity, collaboration, and critical thinking skills (Bonfiglio-Pavisich, 2018). Balancing these perspectives can lead to a more holistic approach, where teachers can draw from both traditional and innovative practices to create an enriched learning environment that meets the diverse needs of learners (Bonfiglio-Pavisich, 2018; Luhamya, Bakkabulindi, & Muyinda, 2017). This synthesis encourages the exploration of diverse teaching methodologies, allowing teachers to tailor their approaches to maximise learner potential while effectively integrating technology into their curricula (Çapuk & Kara, 2015). This dynamic interplay between traditional and modern educational strategies not only enhances engagement but also prepares learners for the complexities of a rapidly changing world, equipping them with the skills necessary to thrive in various contexts (Çapuk & Kara 2015). By promoting an atmosphere of adaptability and creativity, teachers can cultivate a generation of learners who are knowledgeable and resilient problem solvers ready to tackle future challenges (Chuaungo et al., 2022). This holistic approach to education emphasises the importance of collaboration, critical thinking, and emotional intelligence, ensuring that learners develop a well-rounded skill set that extends beyond academic achievements (Dela Rosa, 2016). As a result, schools are

increasingly focusing on experiential learning opportunities that encourage learners to apply their knowledge in real-world situations, bridging the gap between theory and practice (Chuaungo et al., 2022; Luhamya et al., 2017).

2.6.1.1 Orthodox View of ICT Integration

The orthodox view of ICT integration is often characterised by a focus on technology as a mere tool for delivering content rather than as an integral part of the learning process that enhances engagement and fosters deeper understanding (Chuaungo et al., 2022). This perspective limits the potential of technology to transform education, as it overlooks the dynamic ways in which digital tools can facilitate collaboration and innovation among learners (Çapuk & Kara, 2015). In contrast, a more progressive approach recognises that technology can serve as a catalyst for interactive learning experiences, empowering learners to explore concepts creatively and collaboratively while preparing them for the demands of a rapidly evolving digital landscape (Feist & Reid, 2018). By embracing this comprehensive view of ICT integration, teachers can create a more inclusive and engaging learning environment that not only supports academic achievement but also nurtures critical thinking and problem-solving skills essential for success in the 21st century (Yilmaz, 2021). This shift towards a technology-enhanced educational framework encourages the development of personalised learning pathways, allowing learners to progress at their own pace and engage with material that resonates with their individual interests and strengths (Feist & Reid, 2018). This approach not only fosters a sense of ownership over their learning but also cultivates a lifelong love for knowledge, equipping learners with the adaptability needed to thrive in an increasingly complex world. Embracing ICT integration also empowers teachers to utilise data-driven insights, enabling them to tailor instruction and interventions that address the diverse needs of their learners more effectively (Jedrinović et al., 2019).

2.6.1.2 Characteristics of the Orthodox View

Moreover, the integration of ICT in education necessitates ongoing professional development for teachers to harness its full potential. Training programs should not only focus on technical skills but also emphasise pedagogical strategies that align with both Orthodox and Emerging Views, fostering a deeper understanding of how technology can enhance learning outcomes (Haji, Shiyo & Mrutu, 2023; Krishna, 2023; Theodorio, 2024; Umar, Isah, Ibrahim, Shuaibu, Musa, 2024; Van Slyck, 2019). This commitment to continuous growth ensures that teachers

are equipped to navigate the complexities of digital tools while adapting their instructional methods to meet diverse learner needs (Ramaila & Molwele, 2022). As teachers embrace innovative practices, they can create collaborative environments where learners actively participate in their learning journey, thus bridging traditional content delivery with interactive experiences that resonate with today's learners (Tan, Ji, Lim, & Tseng, 2017). Ultimately, this shift towards an integrated approach highlights the importance of community engagement and support among all stakeholders, namely teachers, administrators, and parents, in an effort to cultivate an educational ecosystem that champions both academic excellence and personal development (Orhani & Saramati, 2023; Padayachee, 2017). By promoting strong partnerships and open communication, schools can utilise collective resources and expertise to implement effective strategies that enhance both teaching and learning experiences, ultimately preparing learners for success in an increasingly digital world (Padayachee, 2017). This collaborative effort not only enriches the educational landscape but also empowers learners to take ownership of their learning, encouraging critical thinking and problem-solving skills essential for navigating the complexities of modern society (Orhani & Saramati, 2023). This holistic model not only benefits individual learners but also strengthens the entire community, promoting a culture of shared responsibility and continuous improvement that can adapt to future challenges and opportunities (Techno-Pedagogical Concepts with Digital Skills, 2022).

2.6.1.3 Advantages of the Orthodox View

Some advantages of the orthodox view of ICT integration include a strong emphasis on tradition and stability, which can provide a sense of continuity and identity for learners as they engage with established knowledge and practices (Ramaila & Molwele, 2022). This perspective often promotes a structured approach to learning, ensuring that foundational skills are prioritised and mastered before learners explore more innovative or experimental methodologies (Jones & McLean, 2012). This structured framework can help create a solid educational foundation, equipping learners with the essential tools they need to navigate complex subjects and fostering a sense of discipline that is crucial for lifelong learning (Adhikari, 2021; Valente, Monteiro, & Lourenço, 2018). In addition, the orthodox view encourages a clear assessment of learner progress through standardised evaluations, allowing teachers to measure learning outcomes effectively and identify areas that may require additional support or intervention (Quadros-Flores, Flores, Ramos, & Peres, 2019). Such evaluations not only provide insights into individual learner performance but also help refine

teaching strategies to better address diverse learning needs within the classroom (Shukla & Yadav, 2019). This approach ultimately promotes an inclusive educational environment in which all learners can thrive, ensuring that no learner is left behind in the pursuit of knowledge and skills (Techno-Pedagogical Concepts with Digital Skills, 2022; Karagianni & Drigas, 2023). By prioritising collaboration among teachers, parents, and learners, the orthodox view fosters a community-oriented approach to education that enhances motivation and engagement while reinforcing the importance of shared responsibility in the learning process (Manzoor, 2018). This collective effort not only enriches the educational experience but also cultivates a sense of belonging and accountability among all stakeholders involved (Lomos et al., 2023; Orhani & Saramati, 2023; Paone, 2020).

2.6.1.4 Limitations of the Orthodox View

Some of the limitations of the orthodox views of integrating ICT are that they may include a lack of flexibility in adapting to the unique needs of individual learners, as it often relies on standardised methods that may not resonate with every learner (Hussain et al., 2024). Additionally, this approach can sometimes overlook the importance of innovative teaching methods and technologies that could better address diverse learning styles and foster creativity in the classroom (Hussain et al., 2024). Recognising these limitations is crucial for teachers and policymakers, as it encourages the exploration of more personalised and adaptive teaching strategies that can effectively engage all learners while utilising the full potential of technology in education (Botello, Hernández, & de Luna Caballero, 2019). Emphasising the need for professional development and training for teachers is essential, as it equips them with the skills to implement these innovative strategies effectively and tailor their approaches to meet the varied needs of their learners (Valente et al., 2018). By fostering a culture of continuous learning and collaboration among teachers, schools can create an environment that not only embraces innovation but also encourages the sharing of best practices to enhance learner engagement and achievement (Gerhardt & Mackenzie-Philps, 2018). This collaborative approach can lead to the development of a more inclusive educational framework, where diverse learning styles are acknowledged and addressed, ultimately benefiting every learner in their academic journey (Sithole & Mbukanma, 2024). As a result, schools can cultivate a dynamic learning atmosphere that empowers both teachers and learners to thrive, fostering resilience and adaptability in an ever-evolving educational landscape (Mustafa et al., 2024).

2.6.1.5 Emerging View of ICT Integration

The emerging view of ICT integration is centered around the idea that technology should be seamlessly woven into the fabric of teaching and learning, enhancing instructional methods and providing learners with access to a wealth of resources (Hussain, Wen, Jiang, Waheed, Ali, & Khan, 2020). This integration of technology within the emerging view enriches learning experiences and necessitates a shift in assessment practices to align with new pedagogical frameworks (Budnyk & Kotyk, 2020). Traditional evaluation methods may fall short in capturing the depth of learner engagement and understanding fostered by interactive technologies; thus, formative assessments that emphasise creativity, collaboration, and critical thinking have become increasingly vital (Tok & Sora, 2013). Furthermore, as teachers embrace this dynamic landscape, they must consider how digital tools can facilitate differentiated instruction tailored to individual learner needs, promoting inclusivity and equity in educational settings (Tok & Sora, 2013). By adopting a more holistic approach to assessment, schools can better prepare learners for real-world challenges, ensuring that they are equipped not only with knowledge but also with the skills necessary to navigate an interconnected and rapidly evolving society (Quadros-Flores et al., 2019). This shift not only enhances the learning experience but also encourages learners to become active participants in their education, fostering a sense of ownership and responsibility towards their own learning journey (Quadros-Flores et al., 2019). This transformation calls for ongoing professional development for teachers, enabling them to effectively integrate these digital resources into their teaching practices and create engaging learning environments that inspire creativity and critical thinking (Karagianni & Drigas, 2023). By utilising technology, teachers can personalise learning experiences to meet the diverse needs of their learners, ultimately promoting a more inclusive educational landscape where every learner has the opportunity to thrive (Karagianni & Drigas, 2023). As a result, educational institutions must prioritise investment in training programs and resources that empower teachers to harness the full potential of technology, ensuring that they are well equipped to guide their learners through this dynamic learning landscape (Karagianni & Drigas, 2023; Montgomery, 2022). This commitment to professional development not only enhances teachers' skills but also fosters a culture of continuous improvement, where innovative teaching methods can flourish and adapt to the ever-evolving demands of the digital age (Karagianni & Drigas, 2023).

2.6.1.6 Characteristics of the Emerging View

Some characteristics of the emerging view of ICT integration in education emphasise collaboration, flexibility, and personalised learning experiences that cater to individual learner strengths and interests (Chandra & Mills, 2015). By embracing these principles, educational institutions can create an environment where learners are actively engaged in their learning journey, encouraging critical thinking and problem-solving skills that are essential for success in the 21st century (Chandra & Mills, 2015). Moreover, the integration of ICT in education can serve as a vital tool for promoting global citizenship among learners. By utilising digital platforms and collaborative technologies, learners can engage with peers from diverse cultural backgrounds, enhancing their understanding of global issues and promoting empathy (Thomas, 2019). This interconnectedness not only broadens learners' perspectives but also prepares them to navigate an increasingly multicultural world in which collaboration across borders is essential (Harris et al., 2020). As highlighted by recent studies, effective ICT integration has been linked to improved learner engagement and learning outcomes, particularly when it supports interactive and participatory learning environments (Godat, 2012; Jackson et al., 2011; Tok & Sora, 2013). Thus, embracing the emerging view of ICT integration enriches academic experiences and cultivates socially responsible individuals equipped to contribute positively to society (Dedrick & Esmail, 2018). By promoting critical thinking and problem-solving skills, these educational approaches empower learners to tackle real-world challenges collaboratively (Jones & Le Fevre, 2021). This holistic approach to education not only enhances academic performance but also instils a sense of global citizenship, encouraging learners to become active participants in addressing pressing societal issues (Karkuzhali & Senthilkumar, 2020). This transformation in educational practices is essential for preparing learners to navigate an increasingly complex and interconnected world, where their contributions can lead to meaningful changes (Choon & Patrick, 2018). Such an educational framework not only prepares learners for future careers but also inspires a lifelong commitment to learning and civic engagement, ultimately shaping a generation of leaders who prioritise innovation and social impact (Bloom et al., 2019; Coleman, Gibson, Cotten, Howell-Moroney, & Stringer, 2016). By promoting critical thinking and collaboration, this approach equips learners with the skills necessary to analyse problems from multiple perspectives and develop sustainable solutions that benefit both their communities and the world at large.

2.6.1.7 Advantages of the Emerging View

Some of the advantages of the emerging view of ICT integration include the enhancement of learner engagement through interactive learning experiences, improved access to information and resources, and the development of digital literacy skills that are essential in today's job (Tikam, 2021). This integration also encourages personalised learning pathways, allowing learners to progress at their own pace while cultivating a sense of ownership over their educational journey (Tikam, 2021). Furthermore, it fosters collaboration among peers and teachers, creating a dynamic learning environment that promotes creativity and critical thinking skills essential for success in an increasingly interconnected world (Van Slyck, 2019). These advantages not only prepare learners for future employment but also equip them with the adaptability needed to thrive in a rapidly evolving technological landscape (Omariba, 2019). Consequently, educational institutions are increasingly adopting innovative teaching methods and tools that harness technology to enhance learner engagement and improve learning outcomes (Rebelo & Guimarães, 2020). This shift towards personalised and technology-driven education is transforming traditional classrooms into vibrant hubs of exploration, where learners are encouraged to take the initiative and pursue their interests (Gunhold, 2015). This evolution promotes a culture of collaboration and lifelong learning, empowering learners to become not only consumers of information but also active contributors to their fields of interest (Tikam, 2021). By integrating project-based learning, interactive simulations, and digital resources, teachers are creating immersive experiences that cater to diverse learning styles and promote critical thinking skills essential for success in the 21st century (Yilmaz, 2021). Consequently, learners are better equipped to adapt to an ever-changing job market, developing the resilience and creativity needed to tackle complex challenges in their future careers (Murrie, 2019). This shift in educational paradigms not only enhances academic performance but also cultivates a sense of purpose and passion among learners, inspiring them to explore new ideas and innovate within their chosen disciplines (A Hybrid Connected Approach of Technologies to Enhance Academic Performance, 2022).

2.6.1.8 Limitations of the Emerging View

The limitations of the emerging view when integrating ICT include the potential for unequal access to technology, which can exacerbate existing educational inequalities and hinder the effectiveness of immersive experiences (Pezo, 2024; Yilmaz, 2021). Addressing these

disparities requires a concerted effort from policymakers, teachers, and communities to ensure that all learners have the necessary resources and support to thrive in a technology-driven educational landscape (González-Mohino et al., 2023). To effectively address the limitations of the emerging view, it is crucial to implement strategies that ensure equitable access to technology and resources across diverse educational settings. This includes developing partnerships with local businesses and community organisations to provide the necessary tools and training for both learners and teachers, thereby bridging gaps in technological availability (Tadeu et al., 2019). Additionally, schools must invest in ongoing professional development that focuses on the integration of ICT and emphasises cultural competency and inclusivity within their teaching practices (Aji, 2019). By promoting an environment in which all stakeholders, including teachers, parents, and community members, collaborate towards shared goals, educational institutions can cultivate resilience against disparities and enhance the overall learning experience for every learner (Dalal, 2016). Ultimately, this holistic approach not only mitigates the risk of exclusion but also enriches the educational landscape, preparing learners to thrive in a complex and interconnected world while nurturing their potential as innovative problem solvers (Putri & Ilmi, 2023). This commitment to inclusivity and collaboration empowers learners to develop critical thinking skills, adapt to diverse perspectives, and embrace the challenges of a rapidly changing global society (Anastasopoulou et al., 2024; Paulo et al., 2024; Teixeira et al., 2024). By integrating these principles into the curriculum, teachers can create a dynamic learning environment that values diversity and promotes equity, ensuring that every learner's voice is heard and respected (Patric, 2017). This inclusive framework fosters a sense of belonging among learners, encouraging them to actively engage in their education and collaborate with peers from various backgrounds (Bell et al., 2022). This collaborative spirit not only enhances their learning experiences but also prepares them for future roles as global citizens who can navigate and contribute positively to an increasingly diverse world (Scamati, 2020). Such an approach empowers learners to develop empathy and cultural awareness, equipping them with the tools necessary to address complex societal issues and build meaningful connections across differences (Ramos, 2023).

2.6.1.9 Comparative Analysis Between Orthodox and Emerging Views

In examining these contrasting perspectives, it becomes evident that orthodox views often prioritise traditional methods and established norms, whereas emerging views advocate for innovative approaches that embrace change and adaptability in educational practices (Garcia Garcia et al., 2022). This shift in perspective highlights the necessity for educational

institutions to evolve, fostering environments that encourage creativity and critical thinking while valuing diverse viewpoints and collaborative problem-solving (Pletser, 2017). This evolution not only enhances learner engagement but also prepares learners to navigate an increasingly interconnected world, where the ability to collaborate with individuals from various backgrounds is essential for success (Vong & Song, 2015). As educational paradigms continue to shift, it is crucial for stakeholders to recognise the implications of these changes on curriculum design and teaching methodologies. By prioritising interdisciplinary learning and integrating technology, teachers can create dynamic curricula that respond to the needs of a diverse learner population, ultimately equipping learners with the skills necessary to meet future challenges (Haniya, 2021). This holistic approach not only fosters a deeper understanding of complex concepts but also cultivates adaptability, resilience, and innovation among learners as they prepare to face the demands of a rapidly evolving global landscape (Clifford, 2021). By embracing collaboration among teachers, industry professionals, and community members, schools can further enhance their educational strategies to ensure that all learners are prepared to thrive in an interconnected world (Choy et al., 2018).

2.6.1.10 Impact on Educational Practices

The integration of interdisciplinary methods and technology in education is reshaping traditional practices, encouraging a shift towards more collaborative and experiential learning environments that prioritise learner engagement and real-world application (Miskioglu, 2016). This transformation not only enriches the learning experience but also equips learners with critical thinking skills and a sense of agency, empowering them to navigate challenges effectively in their future careers (Hayford & Kattwinkel, 2018). As educational institutions adapt to these changes, they must also prioritise inclusivity and accessibility, ensuring that all learners, regardless of their backgrounds or abilities, have equal opportunities to succeed in this dynamic environment (Mendoza & Venables, 2023). This commitment to inclusivity not only fosters a diverse learning community but also enhances the overall educational experience by bringing together varied perspectives and ideas that enrich discussions and collaborations. (Hayford & Kattwinkel, 2018; Kuryliak, 2023).

2.6.2 Process Approach vs Product Approach in ICT integration

Most studies that focus on ICT integration (Lloyd, 2005; Hennessy et al., 2010; Hennessy, 2010; Peeraer and Van Petergen, 2015; Ndlovu, 2015) seldomly attempt to define the concept

of integration. Lloyd (2005) makes it clear of what ICT integration is, while other studies (Hennessy, et al., 2010; Peeraer and Van Petergen, 2015; Ndlovu, 2015) approached the concept from theories

formulated in educational technology hence giving fragmented understanding of the concept. According to Lloyd (2005), the process of integration is to combine components into a harmonious whole. Lloyd (2005) uses the metaphor of language and attempts to convince the reader to view integration through the lens of a language which is at times measured against fluency. In this case, Lloyd (2005) advocates measuring integration through technological fluency. Interestingly, Lloyd (2005) views integration as either context or content. The difference between context and content is that context relates to the method of teaching, while content relates to technological and subject matter knowledge. The didactic interpretation of integration is captured as an argument in various studies (Dron, 2012; Peeraer and Van Petegen, 2015; Ndlovu, 2015), where others view integration in the form of levels of adoption, while other studies view integration in terms of types (Wilson-Strydom and Thomson, 2005; Ndlovu, 2015). Ndlovu (2015) uses her conceptual framework to explain ICT integration using the process approach which assumes integration to be an invisible operation hidden around dots meant to represent different resources, activities and classroom practices represented in figure 2 below.

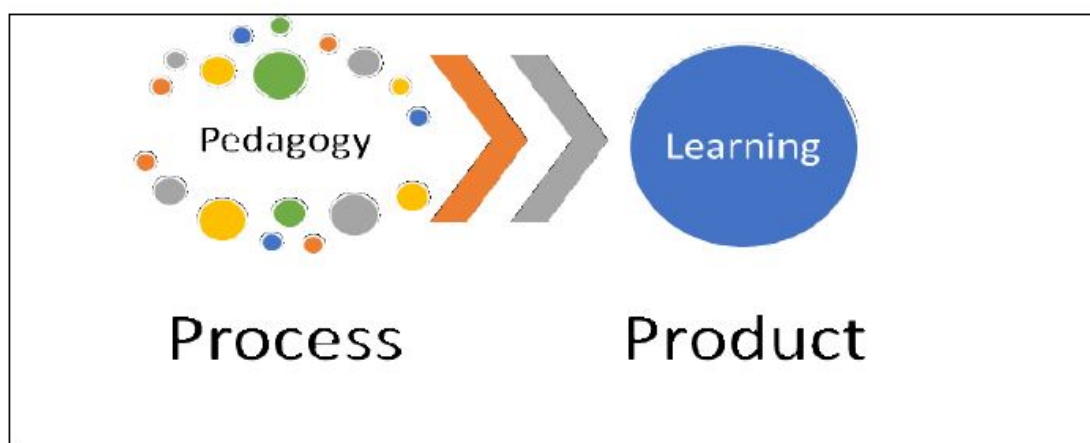


Figure 2: Process approach vs Product approach

Source: Ndlovu, 2015

This understanding is acknowledged by Lloyd (2005), who describes ICT integration as conditional knowledge which relates to “how” and “when”. I would assume that within Business Studies teaching, the “how” relates to the method and medium used to teach a concept or principle while the “when” will be determined by either teacher wisdom or feedback from

learners. This understanding of ICT is currently dominant in South Africa. The challenge with this interpretation is that it does not state explicitly how ICT integration should take place in practice, this is at odds with the current understanding of the two-guiding policy documents, namely the CAPS document for Business Studies (DBE, 2011) and the White paper (DBE, 2004) whose interpretation has been challenged as not translating to real classroom practice.

2.6.3 The Generative use of ICT vs The Representational Use of ICT

According to Du Plessis and Webb (2008), integration is the transformation which occurs in teaching practice. Their view attempts to distinguish between use and integration, where use is interpreted as a form of transposition of old practice into new mediums without change in pedagogy. While transformation relates to change in practice, Proctor, Watson, and Finger (2003) are of the view that ICT integration is a rare occurrence, somehow acknowledging Lloyd's (2005) assertion that ICT integration is easy to conceptualise but empirically difficult to ascertain its existence. Wilson-Strydom and Thomson (2005) distinguish between ICT use and integration; they assert that the acquisition of technical skills and learning about computers amounts to implementation without integration. Furthermore, they view implementation with integration as a situation where learners use ICT to learn and ICT being the centre for learning. Wilson-Strydom and Thomson (2005) coined two terms to explain the use of ICT in teaching: representational use of ICT, which involves using ICT to project content, and the assumption that learners are passive. On the other hand, they assert that generative use of computers involves the use of ICT to facilitate learning, and the assumption is that learners are active in the process of teaching and learning.

Gauteng province has experienced a lot of success in providing ICT infrastructure to schools. According to the GDE close out report on the ICT project (2016), ICT integration is reported to be very low in practice. The challenge is in identifying what constitutes an ICT integrated learning experience, hence this study seeks to determine whether teacher in Johannesburg do utilise ICT in the classroom, and if so, how do they utilise it.

2.7 DIFFERENT APPROACHES TO TEACHING BUSINESS STUDIES

Teaching is regarded as both an art and a science. As an art, it emphasises the imaginative and artistic abilities of the teacher in creating a worthwhile situation in the classroom to enable learners to learn. As a science, it sheds light on the logical,

mechanical, or procedural steps to be followed to attain effective goal achievement (Rajagopalan, 2019, p. 5).

Teaching is a collaborative process through which teachers share subject knowledge and skills with learners, with intentions of promoting learner's understanding of the social, economic, and political environment to improve their survival in the ever-changing global world (Odundo & Gunga, 2013). As Pele (2014) noted, the key objective of teaching is to create opportunities for learning to occur and develop a desire to learn. Therefore, the teacher ought to influence learners to critically think in certain ways as guided by the curriculum. In this regard, learners can be considered to have learned if they can display a clear understanding of the subject knowledge and skills, which are important for solving societal problems and improving human life in the ever-changing world. While current teachers' undergraduate training makes specific recommendations in favour of active teaching methods, the efforts of the teachers are in most cases motivated by the combination of cognitive orientation and objectives of the process of teaching and learning (Odundo & Gunga, 2013).

In the process of teaching and learning, the approach could be teacher-centred, learner-centred, or a mixture of both approaches (Moate & Cox, 2015). According to Mascolo (2009), the distinction between the two approaches is often linked to the sharing of expertise and authority in the classroom. Teacher-centred pedagogy, also known as traditional teaching methods, is generally defined by Kain (2003) as an approach in which the teacher accepts primary responsibility for the mediation of knowledge to learners. From this view, judgments about the appropriate body of knowledge, subject structure, and expertise rest with the teacher. Drawing upon Cichelli (1983), Hancock, Bray, and Nason (2003) as cited in Mascolo (2009, p. 366), teacher-centred pedagogy is defined as the process where the teacher:

(a) is the dominant leader who establishes and enforces rules in the classroom; (b) structures learning tasks and establishes the time and method for task completion; (c) states, explains, and models the lesson objectives and actively maintains learner on-task involvement; (d) responds to learners through direct, right/wrong feedback, uses prompts and cues, and, if necessary, provides correct answers; (e) asks primarily direct, recall-recognition questions and few inferential questions; (f) summarises frequently during and after a lesson; and (g) signals transitions between lesson points and topic areas (Cicheli 1983); Hancock et al., (2003) as cited in Mascolo (2009, p. 366).

Empirical evidence confirms that using teacher-centred pedagogies, such as the lecture method, notes writing and ‘chalk and talk’ to teach Business Studies, results in facts cramming, poor knowledge retention and constraints application as learners become inactive participants during teaching and learning process (Chand, 2018); Sithole, 2012; McDowell, 2001; Odundo & Gunga, 2013; Mkala & Wanjau, 2013). It is worth pointing out that literature suggests that there are teachers who, even in the age of technology are reluctant from leaving these traditional methods of teaching for the use of technology (Abedi, Prestridge, & Hodge, 2024; Boonmoh & Sanmuang, 2024; Kosiorek, 2023).

In contrast, learner-centred pedagogies originate from constructivist theory, in which mastery of the subject matter is shared and learning is achieved through active learners’ engagement (Chand, 2018) Odundo & Gunga, 2013 views learner-centred pedagogy as collaborative learning. According to Schreurs and Dumbraveanu (2014), when the learner-centred approach is employed, the focus changes from teacher to learner; now the learner assumes a participative role by engaging in self-directed learning while leading discussions in the classroom, while the teacher becomes a facilitator or coach. Learner-centred methods have many benefits; for instance, this approach promotes democratic participation in the learning process, elicits critical thinking in learners, improves learners’ communication needs, and results in a knowledgeable person (Mkala & Wanjau, 2013). ICT can form part of the learner-centred approach whereby in the facilitation process, the teacher could give instructions and then allow the learners to search for the information for themselves. For example; in the subject of Business Studies, the teacher could write down main concepts for a particular chapter or section and allow the learners to use their mobile phones to search for the meaning of those concepts and give feedback in the classroom through reading out of their findings.

It is for this reason that the current global education studies propose a shift from the teacher-centred to learner-centred approach with learning outcomes of deeper learning to equip learners with skills and competencies they will need to succeed in the (Martinez et al., 2016; Yelland, Neal & Dakich, 2008). The existing literature suggests that deep learning rather than surface learning of information, facts, and formulas should be the aim of education; a move well beyond test prep pedagogy to interactive pedagogies (Gore, 2019). Deep learning is defined as an “umbrella term for the skills, dispositions, and knowledge that learners must possess to succeed in 21st-century jobs and civic life. At its heart is a set of competencies learners must master to develop a keen understanding of academic content and apply their

knowledge to problems in the classroom and on the job” (William and Flora Hewlett Foundation’s Education Program, 2013).

Teachers who aim for deep learning outcomes, tend to focus more on empowering learners, rather than worrying about pass percentage (Smith & Colby, 2010). For this reason, they employ in their classroom learner-centred teaching methods that assist learners in becoming active participants during teaching and learning rather than becoming passive followers.

According to Mikala and Wanjau (2013, p.19), “team teaching, group assignments, field tours/visits, internet search, cooperative learning, print media, business plan, case study, problem-based learning, learner presentations seminars/workshops, decision-making exercises, attachment, internship, consulting assignments, actual running of a small business, research project on an existing business” are some of the recommended learner-centred pedagogies which can be utilised for delivering business content with the aim of ensuring that deep learning outcomes are achieved. For this study, only project-based learning, cooperative and collaborative teaching and learning, problem-based learning, and field tours/visits will be researched.

Inside the Business Studies classroom, the focus is on theory rather than the practical reality of how to be an asset in the competitive business world (Kimotho, 2016). The lack of developing business practicality in the classroom leaves Business Studies learners without the necessary skills and competencies needed for a future career in the global marketplace. Therefore, transforming the current teaching pedagogies will put learners at the advantage of being exposed to real-world problems and settings that enable them to become more effective.

2.7.1 Project Based learning

Sekwena (2014) describes project-based learning as an approach that uses a problem approach and allows learners to solve realistic problems that reflect the decisions and dilemmas that people face on a daily basis. Moreover, Vasiliki, Panagiota and Maria (2016) view this method as an experiential teaching method that helps learners develop many skills, such as the management and implementation of complex plans. The two studies agree that this method allows for active learning and participation. ICT can be operationalised in the project-based learning approach, where a teacher could present the real-life struggles of the business world and then ask learners to research international solutions which could be applied domestically to try and curb the presented problem. The international search for solutions could be done

with the use of ICT, where learners can engage in a web search, watch online videos, download and read journal articles, and have Skype or Zoom meetings with people who could assist with possible solutions.

2.7.2 The Cooperative and The Collaborative learning

The integration of the active learning approach has been used for decades, but in the current century, it has had a positive trend in both secondary school and tertiary education. These models are often referred to as cooperative or collaborative learning, both of which relate to the constructivist approach. Granting that cooperative and collaborative learning have two different meanings, for this study, the two terms will be used as synonyms. According to Sithole (2018), this is justifiable as both terms favour completion of tasks through small group efforts over passive learning. Similarly, Kirschner (2001) cited in Scager et al. (2016) noted that collaborative, cooperative, and team-based learning are usually considered similar concepts with different definitions. Sithole (2018, p.11) states that “cooperative learning is an instructional approach to teaching and learning that involves groups of learners working together to solve a problem, complete a task, or create a product”. A small group of learners collaborates to complete academic tasks with intentions of learning together as a team and get rewarded for the group's performance (Ng & Lee, 1996). Similarly, Vasiliki, Panagiota, and Maria (2016) state that cooperative learning involves the use of group work to complete tasks. They explain that groups are assigned tasks by the teacher or other learners and the key success of this method is the interdependence of learners in completing the task.

Furthermore, Klepetar (1992) and Scager et al. (2016) maintain that cooperative learning not only discourages passive learning but also encourages the development of interpersonal skills such as good communication, social skills, and independence. Carroll (1991) cited in Sithole (2012) contends that cooperative learning is the most appropriate teaching strategy for Business studies because businesses are in need of employees with interpersonal abilities that will enable the employees to work in a team with the common goal of producing quality products.

Like any other teaching method, cooperative/collaborative learning has some weaknesses. In a real classroom, some cooperative groups are dysfunctional, and other group members might be reluctant to perform difficult activities. Challenging tasks are left to be done by learners with capabilities, while those with fewer capabilities are deprived of the opportunity to develop new skills and are often referred to as ‘free riders’ (Scager et al., 2016). Additionally,

interpersonal conflicts and time factors are other weaknesses associated with this teaching methodology (Klepitar, 1992). Sithole (2018) advised that learners should be placed in groups of three to four, which will force collective participation. Sekwena (2014) points out that this is a common and preferred method, but it can be chaotic if not properly managed and structured. Although the cooperative/collaborative learning model is not without its weaknesses in execution, the benefits are incredible. Laal and Ghodsi (2012) argue that benefits of collaborative learning teaching method can be social and psychological.

ICT can be operationalised in cooperative/collaborative learning through the use of social media as a planning platform where the social skills and the psychological skills can be tested and developed with the aim of developing team players that will be workplace ready to work in a team and also have good communication skills that will drive the business forward.

2.7.3 Problem-based learning (PBL) pedagogy

The problem-based learning (PBL) teaching method is well recognised for developing professional proficiencies among learners and graduates. However, in the field of Business Studies, there is a narrow discussion about PBL teaching methods. According to Savery (2015, p.5), the PBL teaching method emerged more than three decades ago and continues to gain recognition in more professional schools in different educational domains. PBL teaching method first emerged in the medical field in North America as an answer to the criticism brought about by traditional teaching methods in preparing “medical learners for solving problems in clinical settings (Hung et al, 2008).” Traditional teaching methods that were employed mostly at that time required medical learners to study content knowledge and then practice in a problem-free environment, while PBL entrenches learners' learning progressions in real-life problems.

Leonard et al (2008) associate the PBL approach with the learning theories of "situated cognition, constructivism, social learning and communities of practice." According to Savery (2015, p.7) “PBL approach is an instructional (and curricular) learner-centred approach that empowers learners to conduct research, integrate theory and practice and apply knowledge and skills to develop a viable solution to a defined problem.” In agreement, Ali et al. (2010) describe the PBL model as a learner-centred teaching method that transforms learners from being passive listeners to being active participants and problem solvers. Ali (2010) views PBL as a philosophy aimed at empowering learners as it shifts the emphasis of educational programs from teaching to learning. Flint (2007) emphasises that implementation of the PBL approach

begins with placing learners in groups of five or eight and presenting them with a problem to solve. Once learners start discussing and analysing the problem at hand, deep learning occurs as they work towards the application of content knowledge to real-life problems. During this process, numerous skills such as communication, collaboration, critical thinking, and problem-solving skills tend to develop as they work towards achieving their set goals.

2.7.3.1 The characteristics of Problem-based learning pedagogy

Globally, teachers are using the PBL method as an educational tool that offers practical experience, resulting in many societal problems being solved. Barrows (1997) cited in Savery (2015) and Nazir & Zabit (2010) discuss in detail a set of eight generic PBL characteristics reduced into bullet forms below;

- Learners take responsibility for their learning (learner-centred)

Because PBL is learner-centred, the learner solely engages with the problem at hand, while the teacher becomes a facilitator that offers advice to the learner to make the right decisions while tackling the problem. Savery (2015) notes that learner enthusiasm escalates when responsibility for discovering a solution to a problem rests with the learner, new abilities start showing and learning starts occurring as they start working with the group to develop viable solutions.

- The problem to be used is ill-structured

The problems that exist in the real world are not well structured; therefore, learning must also contain ill-structured problems. In this way, learners can develop the critical skill of identifying problems as they arise and developing viable solutions (Savery, 2015). Margetson (1991: 45) cited in Nazir & Zabit (2010) share the same view that the second PBL characteristic encourages critical thinking and active learning.

- Learning that is integrated into a wide range of discipline

Savery (2015) declared that Barrows emphasised that learners should learn to integrate information from various disciplines that might be useful for developing a feasible solution to

a problem. "Multiple perspectives lead to a more thorough understanding of the issues and the development of a more robust solution" (Savery, 2015, p.8)

- Collaboration is vital

The PBL process requires group collaboration. Thus, the 21st-century world of work requires employees to share information and work effectively in teams when tackling business problems. Proper implementation of the PBL approach in the classroom enables learners to develop the essential skills required in the workplace. Group members share information when working on a group project to find a solution.

- Self-directed learning

According to Nazir and Zabit (2010), "learners can justify what they must learn and this is based on their task to solve the problem". In agreement with this statement, Savery (2015) asserts that, in a group project, learners are assigned research tasks to collect information to be used to develop a solution to a group problem. After the collection of information, all members must share what they have learned during the process and how their information can be used to derive a solution.

- Reiterative

Nazir and Zabit (2010) further state that when learners complete self-directed learning, they will then apply newly acquired knowledge to the problem at hand with the use of problem-solving. This will result in the construction of new knowledge. Learners use the experience they gain to construct new knowledge. This is similar to the view of Savery (2015) that PBL is consistent with the theory of constructivism that emphasises knowledge is constructed through practical experience.

- Self and peer assessment

After solving a group problem, learners must do self and peer assessment. According to Savery (2015) "the significance of this activity, is to reinforce the self-reflective nature of learning and sharpen a range of metacognitive processing skills."

- Self-monitoring

Barrows cited in Nazir & Zabit (2010) emphasise the importance of learner's self-evaluation to keep track of the progress made, including personal achievement. This self-evaluation is done through the use of teacher or peer responses.

Many scholars and researchers have reported the great benefits of the PBL approach when employed in the education field. According to Pawson et al. (2006) and Carrió et al. (2016), PBL pedagogy has the potential to promote deep learning through a greater understanding of concepts and foster learner participation through the meaningful application of information to real-life situations. Another study conducted by Chan (2000) revealed that through the correct use of PBL methodology, learners become motivated to conduct meaningful research that has the potential to solve some of the societal problems. In addition, Lian and He (2013) noted that the PBL approach increased learner satisfaction, as they became highly motivated to extend their learning beyond the borders of the subject of biochemistry. Finally, Nariman & Chrispeels (2016), recommend the PBL approach because it has helped their learners in their study to learn effectively and retaining information longer.

As mentioned earlier, PBL requires group collaboration in order to be effective. The 21st-century world of work requires employees to share information and work effectively in teams when tackling business problems. ICT can be operationalised well in such instances because of how quickly and effectively information can be shared and cross-referenced to ensure the validity of the sources. ICT can make communication more effective through the use of communicative applications which promote collaboration through group chats. This could push individuals to research a particular problem, present their findings to the group, and engage in discussions which will see the group members being active participants while striving to solve the realistic problem at hand.

2.7.4 Field trips

Constructivist learning theorists argue that collaboration between classroom and out-of-school learning is vital for effective learning (Sithole, 2012). For this reason, field trips are suggested as an effective pedagogical tool for supporting teaching and learning in Business Studies. According to Behrendt and Franklin (2014), field trips, also known as excursions, are class

trips organised by the school with academic intentions, in which learners familiarise themselves with the visited setting or exhibits to gain a practical connection to the theoretical subject concepts mediated in the classroom. Kenna (2014) described field trips as a visitation to an educational setting which is out of the school premises which aims at allowing learners the opportunity to gain primary knowledge and experience which could further support the theory learnt at school. Within a business context, Kalafsky and Raymond, (2025) noted that exposing learners to global business environment can be a crucial asset not only for enhancing teaching and learning of the subject theory but also for equipping the learners with valuable knowledge of the mechanisms driving the forever changing global markets.

According to Sorrentino and Bell (1970), field trips may be ventured into for the purpose of offering direct experience to learners, provoking interest and motivation in that particular subject, enhancing significance to learning and interrelationships, reinforcing awareness skills as well as observation skills, and to endorse social development in the learners.

Furthermore, Bell (1970) advises that careful planning needs to be considered before a field trip can be undertaken. Wong and Wong (2008) cited in Donovan, et al (2010) suggest a three-stage Porth's model of planning field trips can be utilised by trip organisers to plan. The first stage of Porth's model is pre-trip planning and research. In the first stage, the field trip organiser develops learning objectives aligned with the field trip activities. In addition, a pre-debriefing session should be organised with the learners to communicate and review the learning objectives. The second stage is known as the during the trip stage. The organiser and tour guide ensures the safety of the learners while constantly encouraging learners to engage in activities that support learning objectives through constant interaction. In addition, measures should be implemented for any unexpected crises that may arise. The final stage is the post-trip stage. In this stage, a post-debriefing session is held with the learners to emphasise what has been learned during the field trip. Learners share their experiences, while the teacher, on the other hand, gives feedback on written tasks submitted by the learners about learning objectives set at the beginning stage (Donovan et al, 2010).

Kenna (2014) revealed that teachers no longer plan for field trips as they believe these trips are more expensive and time-consuming. In this case, Sithole (2012) suggests that teachers should utilise local businesses and government companies in their communities to cut costs, while learners are exposed to the practical side of running a business. For example, teachers can organise educational visits to local supermarkets to enable the learners to learn about retail

trading or take the learners to a resident farm to learn more about business sectors and production processes. This pedagogic approach should be utilised, as it has the potential to elicit intellectual growth and cultural sensitivity, develop learner and teacher relationships while developing sensible individuals who in the future will be able to work effectively in a diverse business environment (Donovan et al, 2010).

ICT could be operationalised in field trips with the use of gadgets such as tablets and mobile phones to take note of the most critical information as well as taking pictures of the most significant activities which could assist with recalling information upon the presentation of pictures to learners. This could assist the teacher when he/she attempts to connect the content from the textbook with the practical activity which the learners had witnessed.

This section attempted to gain insight into ICT integration by reviewing debates in the field of ICT integration in teaching with the aim of understanding the teacher practices in ICT integration as well as the teacher practices used in teaching high school Business Studies in South Africa. In this section, I briefly explore the history of the Subject of Business Studies. From there, I explored the requirements specified under the CAPS document (2011) for teachers to teach the subject of Business Studies. This enabled me to explore the literature on the various conceptions of ICT integration and teacher practices used in the instruction of high school Business Studies. The main challenge identified was defining the concept of ICT integration since the concept takes many forms when applied to teacher practice.

2.8 ICT INTEGRATION AND TEACHER PRACTICES- A CONCEPTUAL REVIEW

While the literature review above attempts to grasp the pedagogical value of integrating ICT into the teaching of Business Studies, the question about teachers' understanding of integrating ICT as well as the question about how teachers integrate ICT in the classroom will be answered through empirical research. The fusion of two theories, namely the Interactive Equivalency theorem (Anderson, 2003) and ICT Affordances conceptualised by Colone and Dyke (2004), will be utilised to formulate a conceptual framework. In addition to these two theories, the context of the classroom which is an ICT-mediated classroom, must also be considered. I will

now engage in a discussion of the above-mentioned theories and conclude by presenting the conceptual framework.

2.8.1 Interactive Equivalency Theorem

According to Wagner (1994), interaction can be defined as a shared event which requires at least two actions to take place between at least two objects; however, these two objects and events can only be regarded as interacting objects if they influence each other. To put the above statement bluntly, interactions should cover only activities where a learner is in reciprocal contact with another person or multiple people (Daniel & Marquis, 1988).

Anderson (2003) argues that interaction greatly assists in various functions in the education sector. These functions make provisions for granting learners some control with the aim of facilitating program adaptation based on the inputs extracted from the learners, consenting to numerous formulas of involvement and communication, and thus assisting with the development of meaningful learning (Sims, 1999). Additionally, Lipman (1991) and Wenger (2001) advocate the notion that interaction is important in learning communities. Finally, Jonassen (1991) states that the value of the viewpoint of other people which is gained through interaction, is an important constituent in constructivist learning theories.

According to Moore (1989), there are three types of interactional modes that exist in the classroom: learner-to-teacher, learner-to-learner, and learner-to-content. I will utilise these three modes of interaction to analyse the observed teacher practices in this study. Anderson and Garrison (1998) further expanded on Moore's (1989) idea by including two more interactions, namely the teacher to teacher as well as the teacher to content. Anderson and Garrison (1998) do not explain how these two interactions are utilised in practice. Therefore, it can be assumed that these two elements are utilised during the process of the teacher preparing for the lesson. For the sake of this study, the interaction of teacher-to-teacher and teacher-to-content will not be utilised because this study does not focus on the teacher preparation process which may fall outside the scope of the classroom context. Only the three interactions proposed by Moore (1989) were utilised.

While the interactive equivalency theorem mentions the types of interactions that exist, it does not define the contents of the interactions. To put it bluntly, using the interaction of learner to content as an example, there is no specified kind of knowledge which makes up the content. In

addition, there is no clarity on the kind of activities involved in teacher to learner as well as learner to learner interaction. Therefore, in the context of teaching Business Studies in South Africa as adopted in this study, content will refer to the subject matter and its concepts, the procedures, ideas, as well as its explanations. In the context of this study, the interaction of learners with content is when the learner participates cognitively, physically, and emotionally with the content through digital media. Teacher to learner interaction could include acquiring knowledge which is transmitted from the teacher to the learner through technology. This could be activities which include guided or unguided learning. Learner-to-learner interaction could involve group and peer learning activities which could (or could not) be mediated through ICT. Below is a figure which demonstrates the flow of the Interactive Equivalency Theorem.

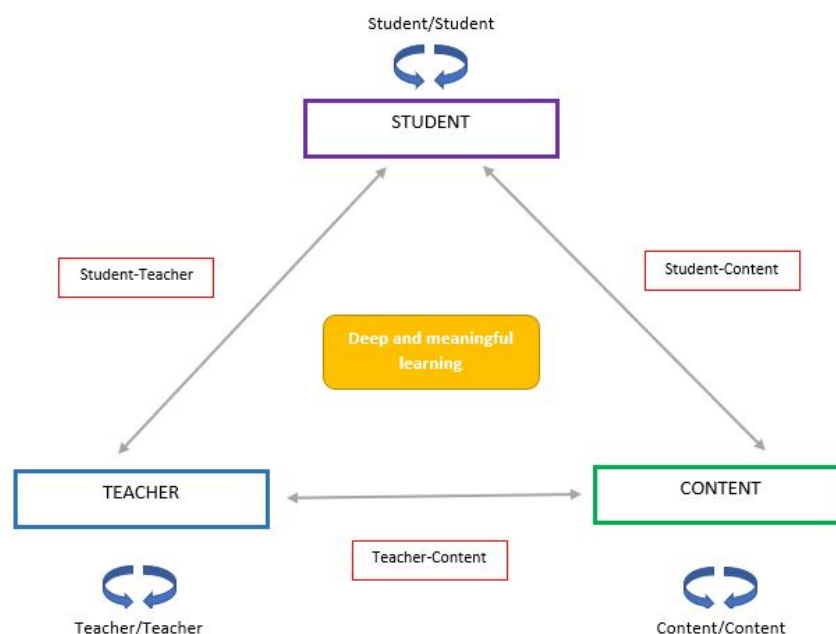


Figure 3: Interactive Equivalency Theorem

Source: Anderson, 2003

2.8.2 Taxonomy of ICT Affordance

According to Colone, Ingraham and Cook (2003), there has been a significant increase in research about the use of ICT which is also supported by evidence which shows that learning technology as a research discipline is growing rapidly. However, while there is an increase in research about the use of ICT, research still leans towards the focus of specific case studies and deviates from developing theories and approaches which will assist in underpinning research (Colone, 2004). Furthermore, Colone and Dyke (2004) are of the view that there is little

understanding about the ‘affordances’ of the various technologies and, more specifically, how these properties could be effectively used in the context of teaching and learning. This view was ignited by their belief that a better understanding of the nature and properties of technologies will result in a more efficient application of ICT for learning and teaching. To achieve this, Colone and Dyke (2004) build on Gibson’s concept of affordance (Gibson, 1979) coupled with Beck’s conceptualisation of ‘risk’ (Beck, 1992)

The concept of ‘affordance’ is contested and difficult to apply (Hammond, 2010). Gibson’s concept of affordance is described by Salomon as:

... the perceived and actual properties of a thing, primarily those functional properties that determine how the thing could possibly be used. (Salomon, 1993, 51)

forwards the idea that affordance could be viewed as a tool that gives a descriptive interpretation of actual and perceived use of ICT. Colone and Dyke (2004) drew from a number of theories and critiques, in particular the work of Giddens (1990, 1991) which focused on late modernity, Castells’ work, which focused on the networked society (Castells, 1996), and Engestrom’s critique of activity theory (Engestrom *et al.*, 1999). Finally, Colone and Dyke (2004) analysed the literature on the use of technology which resulted in a list of potential themes and commonalities which were condensed into the taxonomy of ICT affordances.

There are a total of ten affordances in the taxonomy of ICT affordances which was created by Colone and Dyke (2004). For the purpose of this study, only six of the ten affordances will be utilised because of their relevance to the use of ICT in the classroom for teaching and learning. The taxonomy of ICT affordance is valuable for this study because it helps capture teachers’ perceptions of how they use ICT in the classroom. It will also assist in understanding the reasons behind teachers’ choices of utilising certain features in particular ways. This study goes further by categorising the features and tools offered by the Smart Notebook. This will enable me to attach an affordance to the use of specific tools and features. The language used in describing affordances offers this study a technical language to describe the reasons behind the use of a tool or feature. The table below provides a list and interpretation of the six ICT affordances by Colone and Dyke (2004) which will be used in this study.

Table 2: Taxonomy of ICT Affordance

AFFORDANCES	INTERPRETATION
Accessibility	Relates to the variety of ICT which individuals are exposed to which offers uncomplicated access to information through the use of a range of diverse mechanisms.
Speed of Change	Refers to the convenience of access to information or events through technology which enables unparalleled speed of access to materials and world events as they happen.
Diversity	Refers to the access to the immense array of diverse experiences offered by ICT which can promote learning. For example, international websites, access to subject experts, and simulations which can assist with replicating complex behaviour.
Communication and Collaboration	Refers to the potential for learning which is enriched by an individual engaging with the 'other' through technology which allows the possibility of new dialogs and communication to exist.
Multimodal and non-linear	Refers to the different routes and forms of learning from the web which are non-sequenced and are characterised by hypertext and the use of search engines such as Google, Ask.com, Microsoft Bing and Yahoo just to name a few.
Immediacy	Refers to the expected response time by the user because of the speed in which information can be exchanged through the web and e-mails.

Source: Colone and Dyke (2004)

2.8.3 The ICT classroom context

Because the concept of ICT takes different forms when it is used by various education practitioners, it is difficult to define ICT in the context of education. Thus, Clark (2005) attempts to understand ICT integration by utilising two concepts, namely, instructional media' and 'multimedia'. Clark (2005) describes instructional media as any instrument which is utilised with the purpose of delivering and bestowing instructions such as the interactive flat panel display, computers, television, newspapers, books and people just to name a few. Clark (2005) further defines multimedia as the size and ability of computers to avail real time

representations of existing media and sensory modes of instruction. Therefore, both instructional media and multimedia are examples of ICT in education. According to Clark (2005), the gains of media originate from the cost of instruction, which he narrowed down to ‘time’ and ‘access’ to a number of instructional designs. Notwithstanding the cost advantage of ICT in teaching, Conole and Dyke (2004) contend that the kind of affordance that ICT can offer may impact its actual use in the classroom. The figure below depicts a classroom context which is an ICT mediated classroom.

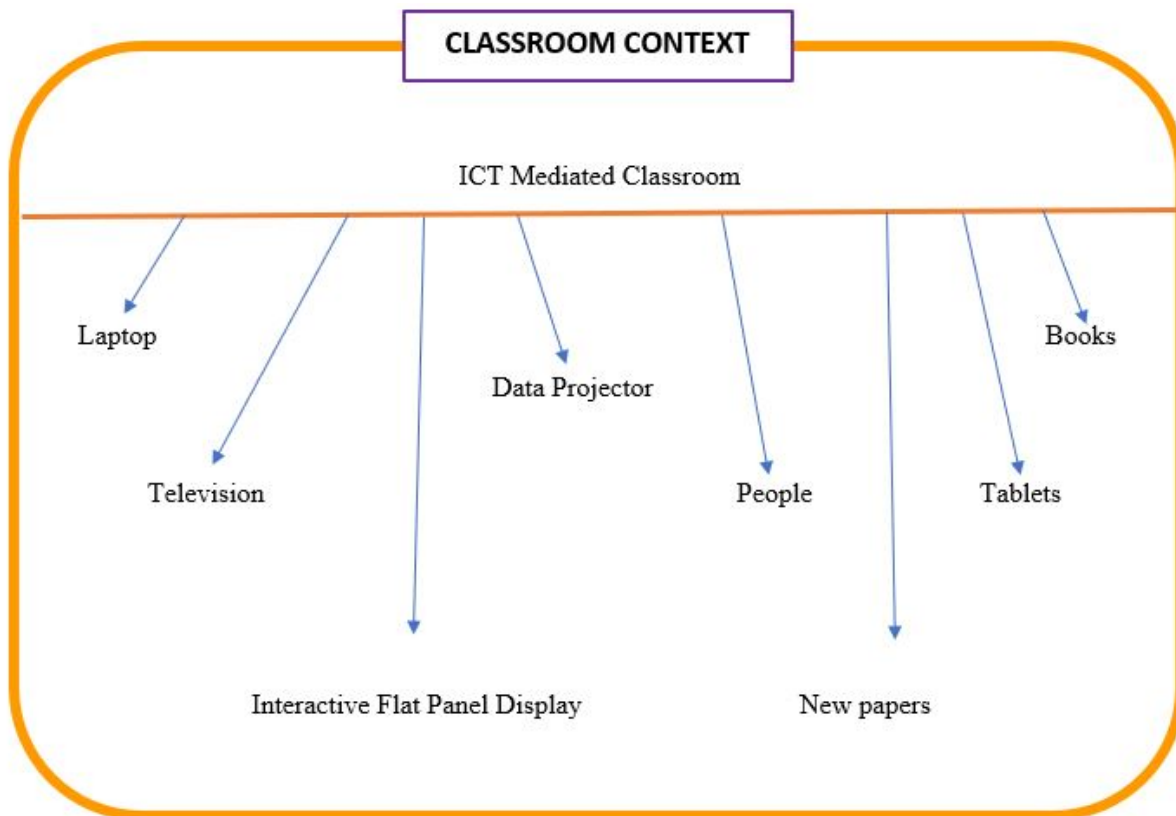


Figure 4: ICT Mediated Classroom

2.8.4 The interactive Flat Panel display in the classroom

In Gauteng classrooms, the most dominant instructional media is the interactive flat panel display, also known as the Smart Board. I only discuss the interactive flat panel display because it is a popular choice in the province of Gauteng and is the most relevant and utilised instrument in this study. According to Bourbour (2014), this is a type of hardware that looks like a standard whiteboard but is able to connect to a computer as well as a projector. Bourbour (2014) further described that the interactive flat panel is touch-sensitive which means that a person can perform certain activities by physically touching the board. When connected, it can also be

controlled by a mouse or a special pen. It can also be utilised in collaboration with special software which is pre-installed which allows it to project images, audio, and text. In Gauteng, Classrooms the Interactive flat panel display is used with Smart Notebook software which offers a variety of tools and features that can be manipulated to create the desired learning environment. The Smart Notebook features have been designed to accommodate educational activities; however, these tools are scattered across the software. In other words, most tools have not been categorised and packaged in such a way that teachers are able to identify a specific tool in relation to a particular pedagogic activity. This study discusses these tools and features through the taxonomy of affordance (see Table 2) and offers possible educational uses of the tools, although use is dependent on teacher innovation. For the purpose of this study, ICT and Interactive Flat Panel display will be used interchangeably.

With the Interactive Equivalency Theorem by Anderson (2003), the Taxonomy of ICT Affordance by Colone and Dyke (2004) as well as the context of the classroom (which is an ICT mediated classroom) has been discussed, I am now able to illustrate this in a graphical presentation where the diagram demonstrates the flow and link to the theory and concepts which may lead to meaningful learning. Ede et al (2024) found that integrating ICT into teaching allows teachers to cater to individual differences among learners. By providing various digital resources and instructional strategies, educators can create inclusive learning environments that accommodate the individual needs and preferences of all learners, regardless of their learning styles or abilities.

In addition, it was found that in South African secondary schools facing challenges of overcrowded classrooms, ICT integration can help alleviate some of the pressures associated with traditional instructional methods. Digital technologies enable educators to deliver content more efficiently and effectively, allowing for greater flexibility in instructional delivery and differentiation of instruction to meet the diverse needs of learners (Valtonen, Leppänen, Hyypiä, Kokko, Manninen, Vartiainen, Sointu, & Hirsto, 2021).

Vahedi and Zannella (2021) found that there is a downside to the integration of ICT in the classroom, such as learners using it for non-academic purposes while lessons are ongoing. This behaviour undermines the effectiveness of ICT integration, compromises the learning environment, and diminishes the educational experience for both learners and educators. Sabiri (2020) and Eden et al. (2024) assert that the lack of resources, the Internet, and technical support are demotivators of ICT integration in schools. These challenges not only disrupt

teaching and learning activities but also exacerbate existing disparities in educational opportunities, particularly for learners in underprivileged communities.

Teachers' knowledge of technology in the 21st century is another important factor in ICT integration. Many can operate some gadgets but find it difficult to integrate them into teaching learning activities in the classroom. Hero (2020) found a significant relationship between teachers' level of technology preparedness cum proficiency and integration of ICT to teaching and learning in many schools. Hafifah and Sulistyo (2020) found that a lack of skills and facilities may create fear in the minds of users, leading to resistance to embracing new technology.

The taxonomy of ICT affordances provides a useful lens for examining how teachers perceive and employ technology, while the interactive flat panel display represents a practical embodiment of these affordances in South African classrooms. Conole and Dyke's (2004) categories such as accessibility, immediacy, collaboration, and multimodality all materialise through Smart Board functions and software. In Gauteng, this device mediates opportunities for differentiated instruction and multimodal learning, yet its pedagogical value ultimately rests on teachers' capacity to interpret and mobilise its tools amid constraints of skills, resources, and learner behaviour. Positioning the Smart Board within the framework of ICT affordances thus enables this study to move beyond mere availability of technology to interrogate the pedagogical and contextual conditions shaping its educational impact.

2.9 CHAPTER SUMMARY

This chapter focuses on a literature review relating to the subject of Business Studies and the requirements to teach Business Studies in line with the CAPS document (2011). I also attempted to look at literature which could shed light on the research questions posed by exploring the various ways in which Business Studies can be taught. The literature reviewed then led to a discussion on Anderson's (2003) interactive equivalency theorem which unpacks the different dialogs which may exist in an ICT mediated classroom. Moving forward, I then engaged in a discussion about Colone and Dyke's (2004) taxonomy of ICT affordance which seeks to shed light on the pedagogical values of teachers in an ICT-mediated classroom. The chapter then expands on what an ICT-mediated classroom is and what it comprises. The next chapter, Chapter Three, focuses on the theoretical framework.

CHAPTER 3:

THEORETICAL AND CONCEPTUAL FRAMEWORK

3.1 THEORETICAL FRAMEWORK

3.1.1 INTRODUCTION

In an era defined by rapid technological advancement, effectively integrating ICT into education is no longer a luxury but a necessity. Teachers have the enormous task of moving beyond utilising technology as a substitute that seeks to stand in for traditional ways of teaching and moving towards a paradigm where technology transforms and enriches the learning experience. This chapter delves into the SAMR model, a widely recognised framework that provides a structured pathway for achieving transformative integration.

By exploring the model's development, its practical applications across the four levels of Substitution, Augmentation, Modification, and Redefinition, and its potential to enhance learner engagement as well as the learning outcomes, this chapter presents the SAMR model as a theory which seeks to equip Business Studies teachers in Johannesburg Central District Schools with a valuable tool for navigating the evolving scenery of educational technology in the South African Educational context, where Business Studies teachers face unique challenges and opportunities in integrating technology effectively. The SAMR model offers a particularly relevant framework for these teachers, as it addresses the need to move beyond the mere substitution of traditional tools with digital equivalents towards a more transformative use of technology. Given the diverse range of learners and the specific economic and social contexts within South Africa, Business Studies teachers can utilise the SAMR model to design engaging and relevant learning experiences that cultivate essential 21st-century skills, such as financial literacy, entrepreneurship, and data analysis, as specified in the CAPS document. By embracing the higher levels of the SAMR model, namely the modification and redefinition levels, these teachers can empower learners to become active participants in the digital economy and contribute meaningfully to South Africa's future.

While acknowledging critiques, the chapter ultimately positions the SAMR model as an enduring and adaptable framework which is meant to foster meaningful and impactful learning experiences in the 21st century classroom.

3.1.2 BACKGROUND OF THE SAMR MODEL

The SAMR model, developed by Dr. Ruben Puentedura in 2006, serves as a framework for teachers to evaluate and enhance the integration of technology into teaching and learning processes. The acronym SAMR stands for Substitution, Augmentation, Modification, and Redefinition, representing a continuum of technology integration that ranges from basic to transformative use. The model emerged from the need to provide teachers with a structured approach to effectively incorporate technology into their pedagogical practices, thereby improving student engagement and learning outcomes (Bicalho, Coll, Engel, & Oliveira, 2022; Romrell, Kidder, & Wood, 2014).

The historical context of the SAMR model can be traced back to the early 2000s, when educational technology began to gain traction in classrooms. As teachers began to adopt various digital tools, there was a growing recognition of the need for a framework that could guide them in making informed decisions about technology use. Puentedura's initial work focused on understanding how technology could not only support but also transform educational practices. The SAMR model was introduced to categorise the different levels of technology integration, allowing teachers to assess their current practices and identify opportunities for enhancement (Lyddon, 2019; Nyayu, Setiawan, & Sulaiman, 2019).

In the years following its introduction, the SAMR model gained popularity among teachers and researchers. Its simplicity and clarity made it an appealing tool for professional development and training programs that are aimed at enhancing teachers' technological pedagogical content knowledge (TPACK) (Koehler et al., 2013). The model's four levels—Substitution, Augmentation, Modification, and Redefinition—provide a clear pathway for teachers to progress from using technology as a direct substitute for traditional tools to employing it in ways that fundamentally change the learning experience (Romrell et al., 2014; Tseng, 2019).

Studies have shown that the SAMR model is particularly effective in promoting higher-order thinking skills and learner engagement. These studies indicate that when teachers apply the SAMR framework, they are more likely to create learning environments that encourage collaboration, creativity, and critical thinking (Ali et al., 2021; Lestari, 2022). For instance, the model has been successfully utilised in various educational contexts, including language learning, vocational education, and mobile learning, demonstrating its versatility and

adaptability across different subjects and teaching methodologies (Wahyudi, 2023; Arnold, 2019).

In addition, the SAMR model has been linked to other educational frameworks, such as Bloom's Taxonomy, which further enhances its applicability in the classroom.

Bloom's Taxonomy serves as a *de facto* framework influencing the South African educational landscape (Stumke, 2023). Its emphasis on higher-order thinking skills aligns with the national curriculum's goals of developing critical thinking, problem-solving, and creative abilities in learners (Lawley, 2020). While not always explicitly named, the principles of the taxonomy are embedded within curriculum documents across various subjects, including Business Studies. This is evident in the learning objectives and assessment criteria, which often progress from basic knowledge recall to more complex cognitive skills, such as analysis, evaluation, and creation (CAPS, 2011). In Business Studies, for example, learners are expected not only to understand business concepts but also to apply them to real-world scenarios, analyse case studies, evaluate business decisions, and create innovative solutions. This progression reflects the hierarchical structure of Bloom's Taxonomy, demonstrating its implicit influence on curriculum design and pedagogical practice in South Africa. By aligning the cognitive levels of the SAMR model with those of Bloom's revised taxonomy, teachers can better understand how to design learning activities that promote deeper learning and skill development (Ali et al., 2021; Rachman, Rochma, & Widiatmoko, 2022). It also makes possible a connection with the research aim of this study which is to explore the integration of ICT into the pedagogy of Business Studies. This connection highlights the importance of integrating technology in a way that not only supports the learning experience but also improves it substantially.

In recent years, the SAMR model has been extensively researched and discussed within the educational community. Scholars have explored its implications for teacher training, curriculum design, and learner outcomes, contributing to a growing body of literature that supports its efficacy as a framework for technology integration (Abdullah, Siraj, Hussin, & Leng, 2015; Moodley, 2023). For example, studies have highlighted how the SAMR model can guide teachers in selecting appropriate digital tools and resources that align with their instructional goals and the needs of their learners (Bicalho et al., 2022).

Moreover, the SAMR model has been instrumental in shaping the discourse on mobile learning (mLearning) and the use of ICTs in education. As mobile devices become increasingly prevalent in classrooms, the SAMR model provides a valuable lens through which teachers can evaluate the effectiveness of technology-enhanced learning activities (Romrell et al., 2014). Furthermore, research indicates that when teachers utilise the SAMR model to inform their mLearning practices, they are better equipped to create engaging and meaningful learning experiences that utilise the unique capabilities of mobile technologies (Arnold, 2019; Rachman et al., 2022).

The SAMR model is designed to help teachers critically assess their use of technology and encourage them to move beyond the mere substitution of traditional tools. Below is a graphical illustration of the SAMR model and what each level entails: Below follows a description of how the model is envisioned in this study, specific to the South African context.

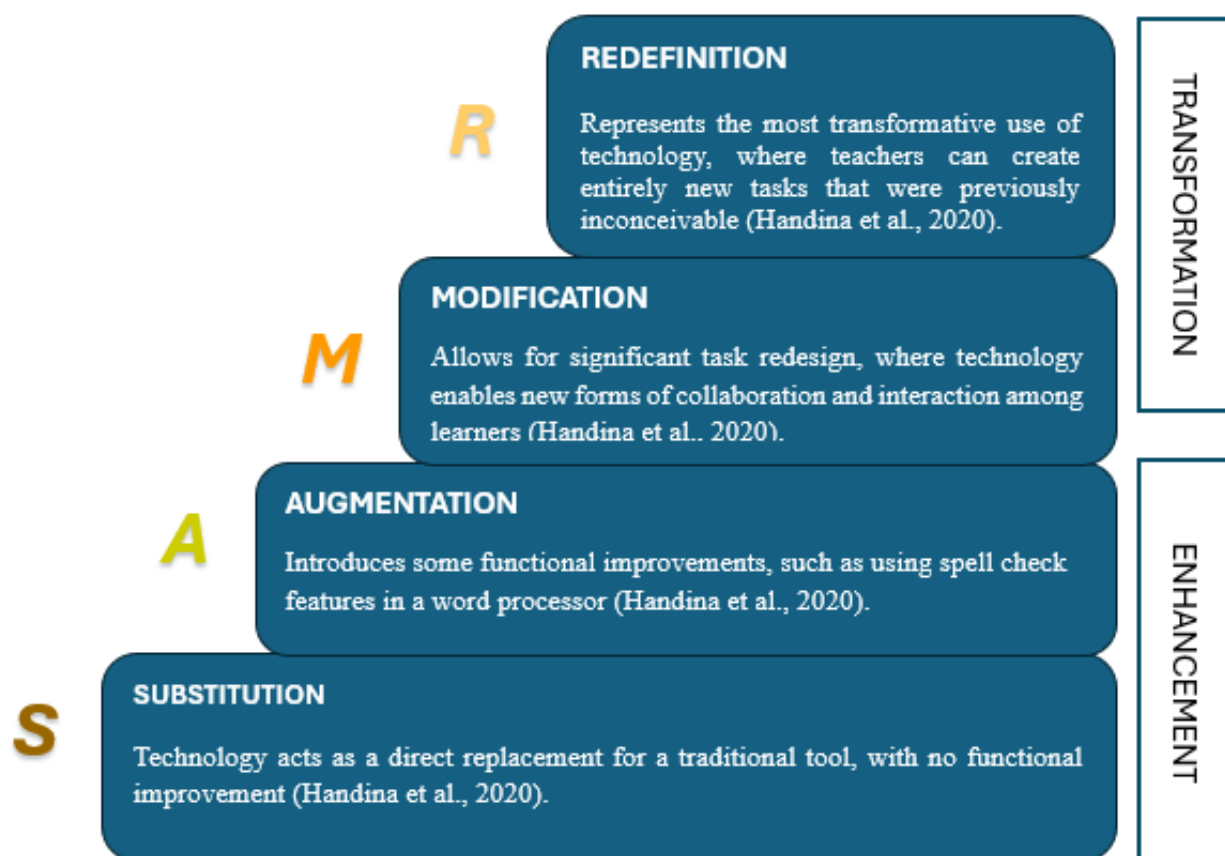


Figure 5: SAMR Model

Source: Puentedura (2006).

3.1.2.1 Substitution

At the Substitution level, technology acts as a direct replacement for traditional tools, with no functional improvement. For example, using a word processor instead of a pen and paper exemplifies this level. The primary functionality here is to maintain the same task while changing the medium through which it is performed. While this level may not significantly enhance learning outcomes, it does provide learners with access to digital tools that can facilitate their work. Research indicates that many teachers often remain at this level due to a lack of understanding of how to utilise technology effectively (Reedy, Carmichael, & Kelly, 2020). Substitution can serve as a starting point for teachers who are new to technology integration, allowing them to become comfortable with digital tools before progressing to more advanced levels of integration. In a Business studies classroom, this could be possible when looking at a scenario where a teacher asks learners to write a business plan. Instead of handwriting the plan, learners typed it using a word processor on a computer. The task remains the same (creating a business plan), but the tool changes (from a pen and paper to a digital word processor). This does not fundamentally change the learning activity, but it introduces learners to a digital tool commonly used in business environments.

3.1.2.2 Augmentation

The Augmentation level introduces functional improvements to the task, such as using a word processor with spell check and grammar suggestions enhances the writing process compared to traditional pen and paper. This level allows for increased efficiency and effectiveness in completing tasks, as technology provides additional features that support learning (Lyddon 2019). Augmentation can lead to improved learner engagement, as it often incorporates multimedia elements or interactive features that make learning more dynamic and engaging. Studies have shown that when teachers utilise technology at this level, they can positively influence learners' motivation and learning outcomes (Ames, 2023; Lestari, 2022). The functionality of augmentation lies in its ability to enhance the learning experience without fundamentally changing the task itself. In a Business studies classroom, this is possible in a case where the teacher instructs the learners to create a presentation about the different types of businesses, such as sole proprietorships, partnerships, and public companies (CAPS, 2011). Instead of using poster boards and markers, learners use presentation software such as Google Slides or PowerPoint. The software's features, such as readily available templates, embedded

videos demonstrating business concepts, and easy integration of charts and graphs, enhance the presentation and make it more engaging than a traditional poster. The core task (presenting on business types) remains the same, but digital tools improve the quality and impact of the learners' work.

3.1.2.3 Modification

At the Modification level, technology enables significant task redesign. This means that learning activities can be transformed in ways that were not possible without technology. For example, learners might collaborate on a shared document in real time, allowing for peer feedback and interaction that enhances the learning process (Choi & Lam, 2018; Mangwegape & Paseka, 2023). This level encourages teachers to rethink their instructional strategies and design activities that utilise technology to foster collaboration, creativity, and critical thinking. Research indicates that when teachers implement the SAMR model at the Modification level, they often see improvements in learner engagement and the quality of learning experiences (Zhai et al., 2018). The functionality of modification lies in its potential to create more interactive and collaborative learning environments, which can lead to a deeper understanding and retention of knowledge. In a classroom setup where ICT is utilised and the teacher is teaching the theme of Business Ventures, the teacher may want learners to understand the challenges and opportunities of running a small business (CAPS, 2011). Instead of assigning a traditional research project, the teacher may use ICT tools by utilising a free online simulation platform where learners manage a virtual business in groups. They make decisions about pricing, marketing, production, and staffing, experience real-time consequences, and compete with other virtual businesses run by their classmates. This online simulation transforms the learning activity, providing an interactive and engaging experience which is not possible without technology. The teacher acts as a facilitator, guiding learners through the simulation while explaining key concepts which may be specified in the CAPS document as well as the ATP that learners may encounter.

3.1.2.4 Redefinition

The Redefinition level represents the most transformative use of technology, where teachers can create entirely new tasks that were previously inconceivable. For instance, learners might engage in virtual reality experiences that allow them to explore historical sites or scientific phenomena in immersive ways (Paulauskaitė-Tarasevičienė et al., 2022). This level not only

enhances engagement but also allows authentic learning experiences that connect learners with real-world applications of their knowledge. Research has shown that when teachers successfully implement technology at the Redefinition level, they can significantly enhance the learning outcomes of learners as well as foster a deeper understanding of complex concepts (Handina, Rochintaniawati, & Nugraha, 2020; Rachman et al., 2022). The functionality of Redefinition lies in its ability to fundamentally change the learning experience, enabling learners to engage with content innovatively and meaningfully. This could be possible in an instance where the teacher wants the learners to develop their entrepreneurial skills and understanding of market research (CAPS, 2011). Instead of a traditional business plan assignment, the teacher uses a combination of online survey tools (such as Google Forms or SurveyMonkey), social media platforms (for market analysis and promotion), and collaborative project management software (such as Trello or Asana). Learners, in groups, develop a business idea, conduct market research using online surveys targeting real potential customers, analyse their findings, and refine their product/service based on the feedback. They then use social media to promote their products/services to a wider audience, gather further insights, and build a basic online presence. The teacher guides the process and provides feedback on the survey design, market analysis strategies, and online promotional activities. This project empowers learners to apply their business knowledge in a real-world context, using technology to create, research, and market a product/service in a manner not possible with traditional classroom methods. The teacher's role shifts from direct instruction to facilitation and mentorship, guiding learners as they navigate the complexities of entrepreneurship in the digital age.

3.1.3 EVOLUTION AND TRAJECTORY OF THE SAMR MODEL

The SAMR model has undergone significant evolution since its inception, adapting to the changing landscape of educational technology and pedagogical practices. Initially designed to help teachers assess and enhance their integration of technology in teaching, the model has gained traction as a framework for understanding the varying levels of technology use in educational settings. Its four levels provide a clear pathway for teachers to progress from basic technology use to transformative educational experiences (Vásquez, 2023).

In the early years following its introduction, the SAMR model was primarily utilised in K-12 education, where it served as a guide for teachers to evaluate their technology integration

practices (Shamir-Inbal & Blau, 2021). K-12 education refers to the educational system encompassing primary and secondary education, typically from ages 5 to 18. In the South African context, it includes compulsory nine years of education starting at age seven, followed by non-compulsory further education and training (FET) from grades 10 to 12. This structure aims to equip learners with the foundational skills and knowledge necessary for further studies or entry into the labour market, aligning with the goals of human capital development for economic growth (Matashu, 2023). In K-12 education, teachers began to recognise the importance of moving beyond the mere substitution of traditional tools to utilising technology in ways that could fundamentally change the learning experience. This shift was particularly relevant as schools increasingly adopted digital tools and resources, prompting the need for frameworks that could facilitate effective technology integration (Shamir-Inbal & Blau, 2021).

As the model gained popularity, it began to be applied in various educational contexts beyond K-12 settings, including higher education and professional development. Researchers and teachers have explored the implications of the SAMR model for different subjects and teaching methodologies, demonstrating its versatility and adaptability (Boateng & Kalonde, 2024; Krisbiantoro & Ashari, 2024). This broad applicability has contributed to the model's status as a foundational framework in the field of educational technology.

In recent years, the SAMR model has continued to evolve in response to the challenges posed by the COVID-19 pandemic, which necessitated a rapid shift to remote and online learning. Teachers worldwide were compelled to rethink their approaches to technology integration, and the SAMR model provides a framework for navigating this transition. Richardson, Sales, and Sentocnik (2015) highlighted how the model can guide teachers in selecting appropriate digital tools and resources that align with their instructional goals and the needs of their learners during times of crisis.

As the educational landscape continues to change, the SAMR model remains a relevant and practical tool for teachers seeking to enhance technology integration. Its structured approach allows for a clear progression from basic technology use to transformative educational experiences, thereby improving learner engagement and outcomes. Ongoing research and application of the SAMR model in diverse educational contexts demonstrate its enduring significance in the field of educational technology (Érsek, 2021).

3.1.4 BENEFITS OF USING SAMR MODEL

The SAMR model offers several advantages and benefits for teachers and learners that facilitate the effective integration of technology into teaching and learning processes. Each level of the model provides unique opportunities for enhancing educational practices and improving learning outcomes. These include having an enhanced learning experience, encouraging higher-order thinking skills, offering flexibility and adaptability while using the model, supporting collaborative learning and professional development for teachers, and having improved assessment practices.

One of the primary benefits of using the SAMR model is its ability to enhance learning experiences. By moving beyond the simple substitution of traditional tools, teachers can create more engaging and interactive learning environments. Studies have shown that when teachers implement the SAMR model effectively, learners demonstrate increased interest and participation in learning activities (Ames, 2023; Ayu et al., 2023). Additionally, the SAMR model is inherently flexible and adaptable, allowing teachers to tailor their technology integration strategies to meet the specific needs of their learners and learning contexts. This adaptability is particularly valuable in diverse educational settings, where learners may have varying levels of technological proficiency and learning preferences (Alfiana, 2021; Niswatin & Zainiyati, 2021). By providing a clear framework for technology integration, the SAMR model helps teachers make informed decisions about the tools and resources they use, ensuring that technology enhances rather than hinders the learning process (Bicalho et al., 2022).

Another benefit of using the SAMR model is that it encourages teachers to design learning activities that promote higher-order thinking skills (Setiyawati, Basori, & Efendi, 2023). As teachers progress to the Modification and Redefinition levels, they can create tasks that require learners to analyse, evaluate, and create, aligning with Bloom's higher-order thinking levels (Yok et al., 2020). This shift not only fosters critical thinking and problem-solving skills but also prepares learners for real-world challenges which aligns with the aims of the CAPS document for Business Studies (CAPS, 2011). Studies have indicated that learners engaged in tasks at these higher levels of the SAMR model tend to perform better academically (Drugova, Журавлева, Aiusheeva & Grits, 2021).

While the SAMR model encourages teachers to design learning activities that promote higher-order thinking, it also promotes collaborative learning by encouraging teachers to design activities that facilitate interaction among learners. At the Modification and Redefinition levels, technology can enable real-time collaboration, peer feedback, and group projects that enhance social learning experiences (Reedy et al., 2020). Research has shown that collaborative learning fosters a sense of community among learners, leading to improved communication skills and a deeper understanding of the subject matter (Ames, 2023; Ayu et al., 2023). This collaborative aspect is particularly important in today's interconnected world, where teamwork and communication are essential skills.

Implementing the SAMR model can also serve as a catalyst for teachers' professional development. As teachers reflect on their practices and seek to integrate technology more effectively, they engage in continuous learning and improvement (Lyddon, 2019; Arantes, 2022). The model encourages teachers to explore new pedagogical strategies and collaborate with colleagues, fostering a culture of innovation and growth within educational institutions (Wahyudi, 2023). This professional development benefits teachers and translates into better learning experiences for learners.

The SAMR model can enhance assessment practices by providing teachers with tools to evaluate the learning process for learners more effectively (Ames, 2023; Drugova et al., 2021). Additionally, the SAMR model allows for the creation of authentic assessments that reflect real-world applications of knowledge, making assessments more meaningful and relevant to learners (Ames 2023). This alignment of assessment with learning objectives subsequently contributes to improved educational outcomes.

3.1.5 CRITICISM OF THE SAMR MODEL

The SAMR model has gained significant attention in educational discourse, but it is not without its criticisms. Scholars and teachers have raised various concerns regarding its applicability, effectiveness, and assumptions underlying its framework. Below are some of the most noted criticisms of the SAMR model in academia.

3.1.5.1 Oversimplification of technology integration.

One of the primary criticisms of the SAMR model is that it oversimplifies the complex process of technology integration in education. Critics argue that categorising technology use into just four levels may not adequately capture the nuances of how technology can be effectively utilised in diverse educational contexts (Nair & Chuan, 2021; Binangbang, 2020). This simplification may lead teachers to focus on achieving higher levels of the model without fully understanding the pedagogical implications or specific needs of their learners (Wahyudi, 2023). As a result, the model may inadvertently promote a checkbox mentality, in which teachers feel pressured to reach the Redefinition level without a clear strategy for meaningful implementation (Arnold, 2019).

3.1.5.2 Lack of Empirical Evidence.

Another significant criticism is the lack of robust empirical evidence supporting the SAMR model's effectiveness in improving learning outcomes. While some studies have demonstrated positive results when implementing the model, critics argue that these findings are often subjective or based on small sample sizes, limiting their generalisability (Marlatt, 2018; Miles, 2019). Furthermore, the model's reliance on subjective interpretations of technology use can lead to inconsistencies in how it is applied across different educational settings (Lestari, 2022). This lack of empirical validation raises questions about the model's reliability as a framework for guiding technology integration.

3.1.5.3 Focus on Technology Over Pedagogy.

Critics also highlight that the SAMR model tends to prioritise technology over pedagogical considerations. While the model emphasises the role of technology in enhancing learning, it may unintentionally downplay the importance of sound pedagogical practices (Handina et al., 2020). Some teachers argue that effective teaching should be grounded in pedagogical theories and that technology should serve as a tool to support these theories rather than dictate them (Wahyuni, Mujiyanto, Rukmini, & Fitriati, 2020). This suggests that the SAMR model may lead to a technology-driven approach that neglects the foundational principles of effective teaching and learning.

3.1.5.4 Limited Scope of Application

The SAMR model has been criticised for its limited scope of application, particularly in terms of the types of technology it encompasses. Some scholars argue that the model does not adequately address the diverse range of digital tools and resources available to teachers today (Aiyegbayo 2014). For instance, the model may not fully account for the potential of emerging technologies, such as artificial intelligence and virtual reality, to transform learning experiences (Tunjera & Chigona, 2020). This limitation raises concerns regarding the model's relevance in an ever-evolving technological landscape.

3.1.5.5 Potential for Misinterpretation

The SAMR model framework can be subject to misinterpretation, leading to inconsistent application among teachers. For example, some teachers may mistakenly equate the levels of the model with a linear progression, assuming that all technology use must follow a specific path from Substitution to Redefinition (Adams, Cornford, Martin, & McCorquodale, 2019). This misunderstanding can result in frustration and disillusionment when teachers fail to achieve the desired outcomes. Additionally, the model's terminology may be confusing for some teachers, particularly those who are new to technology integration (Ames, 2023).

3.1.6 THE APPLICATION OF THE SAMR MODEL INTO THIS STUDY

While acknowledging the limitations of the SAMR model, this study recognises its value as a widely recognised framework for categorising and analysing technology integration in education. This study does not treat SAMR as a rigid hierarchy or a simplistic checklist for evaluating "good" technology use. Instead, it employs SAMR as an analytical lens to examine the depth and nature of ICT integration in Business Studies classrooms. The focus remains on pedagogy, with SAMR serving as a tool to understand how technology choices align with specific learning objectives and impact teachers and learners' experiences.

Furthermore, this study acknowledges the context-specific nature of technology integration. By focusing on a particular subject area and specific geographical location, this study aims to provide nuanced insights relevant to this unique setting. The findings do not present SAMR as a one-size-fits-all solution but rather as a starting point for critical reflection and ongoing dialogue about effective and meaningful ICT integration in diverse educational contexts.

3.2 CONCEPTUAL FRAMEWORK

3.2.1 INTRODUCTION

A conceptual framework in education provides a structured foundation for organizing and guiding research, curriculum development, and teaching practices by linking theories to specific educational challenges and objectives (Scheerens, 2016; Kaffenberger, 2022). Within this study, the integration of Information and Communication Technologies (ICTs) into Business Studies teaching is examined through the complementary lenses of the SAMR model (Puentedura, 2014) and the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006). The SAMR model conceptualizes ICT use as a continuum from enhancement to transformation, allowing for the evaluation of how technology reshapes teaching and learning processes. In contrast, the TPACK framework emphasizes the interplay between teachers' technological, pedagogical, and content knowledge, highlighting the skills and professional capacity needed to integrate ICT meaningfully into subject-specific contexts. Bringing these two frameworks together provides both a practical and theoretical lens: SAMR addresses the extent and depth of ICT use, while TPACK examines the knowledge base enabling such integration. This dual focus is particularly relevant in South African classrooms, where issues of access, teacher readiness, and contextual constraints often shape ICT practices (Antonenko, 2015). By combining SAMR and TPACK, the study is able to move beyond simplistic evaluations of ICT adoption to interrogate how Business Studies teachers can harness digital tools not only to substitute or augment existing practices but also to transform pedagogy in ways that foster critical thinking, collaboration, and learner engagement. Thus, this conceptual framework is justified as it offers a comprehensive, multi-dimensional structure for examining both the quality and the sustainability of ICT integration in the teaching of Business Studies.

Below is a graphical illustration of the conceptual framework which is used as a lens in this study:

Conceptual Framework: Linking SAMR & TPACK in ICT Integration (Business Studies Teaching)

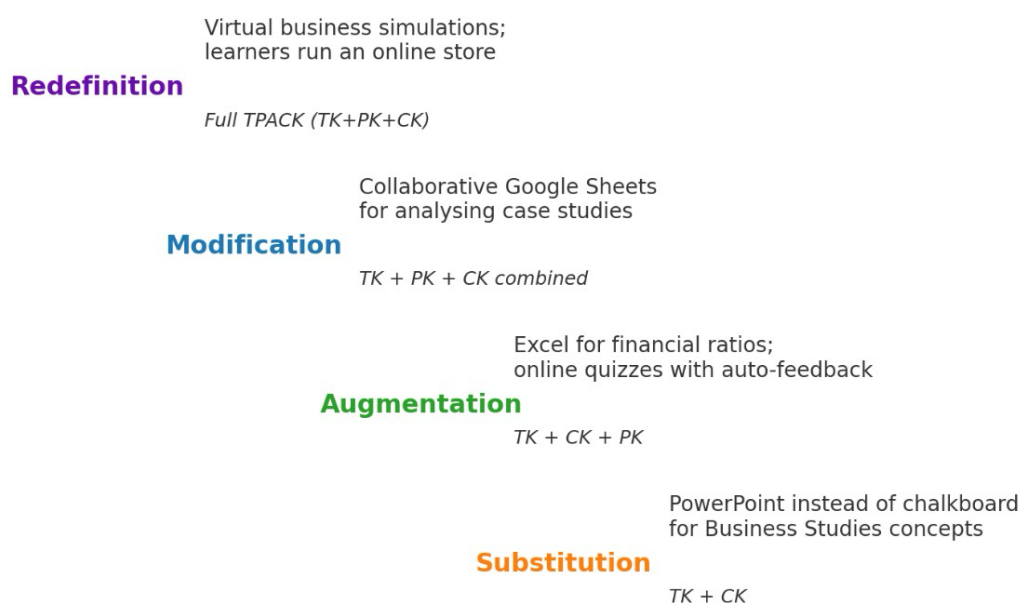


Figure 6: Conceptual Framework of the Study

Source: (Puentedura, 2014; Mishra & Koehler, 2006).

3.3 CHAPTER SUMMARY

This chapter provides a comprehensive exploration of the SAMR model, a prominent framework guiding technology integration in Business Studies education. It traces the model's evolution and highlights its enduring relevance in today's classrooms. This chapter emphasises SAMR's structured approach, outlining how it empowers teachers to progress from basic technology substitution to transformative learning experiences that redefine traditional pedagogy. By detailing the benefits of enhanced learner engagement, higher-order thinking skills, and collaborative learning environments, the chapter highlights the SAMR model's capacity to create richer, more effective learning experiences in, among others, the Business Studies classroom. In addition, the chapter presented the conceptual framework for the study, which combines the SAMR model with the TPACK framework to provide a multi-dimensional lens for analysing ICT integration in Business Studies teaching. While acknowledging criticisms, this chapter ultimately positions SAMR as a valuable tool for Business Studies teachers to navigate the evolving landscape of educational technology. Chapter 4 presents the research design and methodology of this study.

CHAPTER 4:

RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

In this chapter, I set out to present discussion on research design, the strategies employed to collect and analyse data for this study. I also describe the population and sampling techniques. The qualitative methods used will also be explained further as part of this discussion. In addition, this chapter outlines the ethical issues that were followed, which guided the research process, especially major highlights during the data collection stages.

4.2 RESEARCH PHILOSOPHY AND RESEARCH PARADIGM

4.2.1 Research philosophy

Research philosophy is the foundation upon which research is built, guiding the choice of methods and shaping how data are interpreted within a specific context. (Turgunova, 2022). This philosophical framework influences not only the research questions posed but also the overall approach taken in collecting and analysing data, ensuring that the findings are valid and reliable (Kiyala, 2019). Understanding the various research paradigms, such as positivism, interpretivism, and critical theory, is essential for researchers to align their methodological choices with their philosophical beliefs, ultimately enhancing the credibility of their work (Mayer, 2017). Research philosophy also plays a crucial role in defining the relationship between the researcher and the subject of study, impacting how knowledge is constructed and understood within different disciplines (Kiyala, 2019). By recognising these paradigms, researchers can better navigate the complexities of their field, promoting a more distinct understanding of how context shapes both data interpretation and the implications of their findings (Sun, 2020). As stated in the research aims and objectives, this study sought to explore and evaluate teaching practices used in the lessons of Further Education and Training (FET) Business Studies when ICT is integrated into the teaching process. Therefore, a practical philosophical view was used as a research paradigm.

Practical philosophy is also known as pragmatic philosophy, which concentrates on the fundamental importance of the research questions and results thereto rather than on the

research methods, and the usage of different methods for data collection such as questionnaires, individual and focused group interviews to unpack the study underway (Brown & Gulchexra, 2022). This approach not only allows for a comprehensive analysis of teaching practices but also facilitates the gathering of diverse perspectives from both teachers and learners, ultimately enriching the understanding of how ICT integration impacts learning outcomes in FET Business Studies (Turgunova, 2022). By prioritising real-world implications, this paradigm encourages researchers to explore the practical applications of their findings, promoting a deeper connection between theory and practice in educational settings (Turgunova, 2022). This alignment between research and practice is essential for driving meaningful change in the classroom, as it empowers teachers to implement strategies that are informed by evidence and tailored to meet the needs of their learners effectively (Brown & Gulchexra, 2022).

This study aimed to answer questions on teachers' perceptions, experiences, shortcomings, beliefs, benefits, knowledge, attributes, skills, habits, competencies, and their understanding of ICT integration when teaching Business Studies to the FET phase for the benefit of school improvement. Johnson and Christensen (2014, p. 489) states that pragmatism "holds in high regard that reality of and influence of the inner world of human experience in action". In consideration of such a view, teachers' involvement, perceptions, experiences, beliefs, knowledge, skills, competencies, and understanding of teaching using ICT may influence how schools create collaborative structures where stakeholders such as principals, parents, teachers, staff, learners, and the community can operate in a healthy environment with high inclusivity for all inputs regardless of social status.

4.2.2 RESEARCH PARADIGM

A research paradigm is a framework that guides researchers in their approach to enquiry, shaping the methods they use and influencing how they interpret data (Kobayashi, 2023). It establishes the foundational beliefs and assumptions that inform the research process, ultimately determining the validity and reliability of the findings produced (Alam, 2019; Mentarang, 2023). Different types of research paradigms include positivism, interpretivism, and critical theory, each offering unique perspectives on how knowledge is constructed and understood within various contexts (Kobayashi, 2023; Scotland, 2012). Understanding these paradigms is essential for researchers as they navigate the complexities of their studies and strive to produce meaningful insights that contribute to their fields (Sinaulan, 2022). By

aligning their research questions and methodologies with a specific paradigm, researchers can ensure that their work is coherent and relevant, ultimately enhancing the impact of their contributions to the body of knowledge (Brown, 2021). This alignment not only guides the research design but also influences how data are collected, analysed, and interpreted, shaping the overall narrative that emerges from the study (Haigh & Withell, 2020). These narratives reflect the underlying assumptions and values inherent in each paradigm, highlighting the importance of critical reflection throughout the research process (Kobayashi, 2023).

Each paradigm has its own characteristics which are related to ontology, epistemology, axiology, and methodology (Kobayashi, 2023). According to Scotland (2012), ontology focuses on the inherent features of a reality. This can include attitudes, beliefs, thoughts, and ideas about reality. In the interpretivist paradigm, it is accepted that social reality is the product of an individual's mind, as the individual is subjective in interpreting the world (Senaulan, 2022). The interpretive interpretation of ontology is therefore relevant in this study as the experiences and realities of the Business Studies teachers would be explored to gain more knowledge about ICT integration in the Business Studies classroom.

Kobayashi (2023) posits that epistemology focuses on the nature and philosophy of knowledge. Similarly, Fouche and Schurink (2011) state that knowledge is the result of an individual's ability to understand symbols and meaning. The epistemology of this study is interpretive in nature because it is subjective and context-dependent. The participating teachers provided information about how they integrate ICT in the teaching of Business Studies. This information differed from teacher to teacher because the information was based on the individual's distinctive involvements of the phenomena.

Axiology is primarily concerned with the origins of truth and the values that influence research outcomes, highlighting how researchers' beliefs and biases can shape their interpretations (Gretschel et al., 2023). Understanding these values is crucial, as they not only inform the research design but also affect how findings are perceived and applied in educational settings, ultimately impacting the effectiveness of ICT integration strategies employed by teachers (Kivunja & Kuyini, 2017). Furthermore, Haigh and Withell (2020) posited that axiology within the interpretivism paradigm agrees that many subjective truths can coexist, each shaped by individual experiences and perspectives, thereby emphasising the importance of recognising diverse viewpoints in the evaluation of ICT integration practices. Recognising these diverse

viewpoints allows for a more holistic understanding of how technology can be effectively integrated into education, thus promoting an environment in which multiple narratives contribute to the development of inclusive and adaptive teaching methodologies. (Schäfer, 2023). With regards to ontology and epistemology, this study acknowledged that the participants would provide their own versions of the truth when providing information about ICT integration when teaching Business Studies. This acknowledgment highlights the need for a flexible research approach that values the insights of participants which will enable me to capture the complexities of the lived experiences and interpretations in the context of ICT integration (Senaulan, 2022).

4.3 RESEARCH DESIGN AND METHODOLOGY.

4.3.1 Research design.

This study adopted a qualitative research design of the phenomenological type. Phenomenological research is a process undertaken to understand the perceptions and realities of the participants from their point of view which means participants play an important role in the research, the view from the phenomenology is from what the research observed, which not reality is as such, but an interpreted reality. (Fraser, 2020). This interpretive nature of phenomenological research allows for a deeper exploration of how individuals make sense of their experiences, ultimately providing valuable insights that can inform effective ICT integration strategies in Business Studies education. (Adam, 2020). In addition, phenomenology is pronounced as a philosophic view that inspires all qualitative design prototypes, but when employed to examine the meaning of an event, a process, or context from the participant who is currently having a direct experience of factors researched about (Ataro, 2020). This approach emphasises the importance of understanding subjective experiences, as it recognises that individuals construct their own meanings based on personal interactions and perceptions within their specific environments (Maffei et al., 2019). The above confirms that people perceive things differently from others. It is also clear that high-quality data can be obtained if the population and sampling are clear. Therefore, I will also set out to engage with different participants who have different views, perceptions, and experiences of this research problem.

McMillan and Schumacher (2010) explain research design (RD) as a plan that outlines the conditions, steps, and methods of data collection and analysis. RD also specifies the plan for collecting empirical evidence used to address each research question. This is in agreement with Leedy and Ormrod (2005), who stated that RD follows a clear-cut method detailing how a specific chosen research method will be applied in a certain study to answer specific research questions. Furthermore, it pertains to the plan and structure of the research undertaken to obtain the required evidence to answer the research question(s) that would be identified. Therefore, I engaged in empirical research which was analysed using qualitative research methods. Semi-structured, one-on-one interviews and document analysis were used as data collection methods.

In other words, RD outlines a plan that guides the “arrangement of conditions for the collection analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure” (TerreBlance & Durrheim, 1999, p. 29). To answer the research question and sub-questions, the choice of RD was an important decision taken for this study. The formulation of the RD assists in describing the structure of my study as it condenses the procedures and processes followed to carry out the study. The selection of RD helped me to plan and come up with practical evidence which is used to respond to the research questions (McMillan & Schumacher, 2006).

4.3.2 Research methodology.

Research methodology is a supreme approach that researchers engage in when conducting a research project; this approach entails describing the research tools the researcher opted to use in a single study (Czerkowski & Berti, 2021). This comprehensive methodology not only guides the selection of appropriate data collection techniques but also shapes how the findings are interpreted and presented, ensuring that the research is both valid and relevant to the context in which it was conducted (Boadu, 2021). Additionally, Nyathi (2015, p. 5) indicates that research methodology is “an overall approach evident in the research process from theoretical foundation to the strategies that are used in the collection and analysis of data”. Research methodology emphasises the research methods, instruments, processes, techniques, and procedures followed in a particular study. (Larkin et al., 2019). By adopting a systematic approach, researchers can ensure that their studies are thorough and contribute meaningfully to the existing body of knowledge in their field (Cariaga, 2018). Research methodologies are

classified into three broad categories, namely, Quantitative, Qualitative, and Mixed approach (Adam, 2020).

From the above, it is evident that research methods, data collection and analysis techniques, research design, and research philosophies are all informed by the research methodology. All research methodologies, as mentioned by McMillan and Schumacher (2010), are appropriate if they are used in the appropriate research process. Thus, in this study, qualitative data facilitated understanding and explanation of the current practices, experiences, and perceptions in no-fee public schools to integrate ICT into teaching Business Studies. This process assisted me in achieving the purpose and intended objectives of the study.

4.3.2.1 Qualitative research approach was chosen for this study.

To answer the research questions, I deemed the qualitative research method relevant for this study. Qualitative research can be defined as a method that focuses on understanding human behaviour and the reasons that govern such behaviour, often employing techniques such as interviews, focus groups, and content analysis to gather in-depth insights (Tuapawa, 2019). Qualitative research can also be used to explore complex phenomena that are not easily quantifiable, allowing researchers to capture the richness and depth of participants' experiences and perspectives. (Murillo et al., 2022). This study followed a generic quality research method within an interpretive paradigm and focused on teacher practices used when ICT is integrated into the teaching of Business Studies. In particular, the study aims to explore how these teachers use and integrate ICT in teaching high school Business Studies.

Punch, as cited by Lee (2009, p. 69), writes that there are two broad categories of qualitative research design, namely ethnographies and case studies. After having reviewed critically the various viewpoints, which will be discussed below, on case studies, I decided that the most fitting design to research objectives that focus on my research intentions was to adopt a case study approach.

A case study approach should be employed when setting out to answer the “how and why” questions as opposed to those that place focuses on specific events (Greening, 2019). This approach can be particularly valuable in providing a comprehensive understanding of the contextual factors and the intricate dynamics at play, thereby yielding insights that may not

emerge from more traditional quantitative methods (Koopman, 2017; Wilson, 2015). Therefore, in this study, teachers were interviewed and observed in their place of work, as it is the setting where they spend their time and execute their duties. Qualitative research tries to explore the perceptions and attitudes of individuals given to certain event and thing; thus, this study drew on the qualitative approach because it is concerned with the practices of the teachers when ICTs are integrated in the teaching of Business Studies. This means that a qualitative research approach is descriptive and not abstract because the researcher is selective when making an argument from the generated data (Creswell, 2003; Ngwenya, 2002). The qualitative research approach was thus relevant to this exposition as it allowed the participating teachers to reflect at a deep level about their experiences and perceptions of the enquiry at hand which is being explored. Thus, I concur, and I am in line with Potokri (2011, p. 101) who said qualitative methods are used to facilitate ‘understanding’ while quantitative methods are used to facilitate ‘explaining’. It was my wish to elicit an “understanding” of the research phenomenon from the research participants.

4.4 RESEARCH SITE, POPULATION, SAMPLING AND PARTICIPANTS’ PROFILES

4.4.1 Research site.

The consideration of the research site where the study is to be conducted is an important factor. McMillan and Schumacher (2010) mention that this process entails determining the suitable site to locate people involved in the research where data can be collected. In this study, data were collected in six schools in the Johannesburg Central District, affectionately known as “D14”, in the Gauteng Province, South Africa. These schools were selected mainly because of the notable reputation they had in their overall school performance rating, the easy access to them, and the fact that working with them is likely to minimise costs and time of traveling for me as the researcher.

4.4.2 Research Population

Johnson and Christensen (2014, p. 250) define the population as the "large group to which a researcher wants to generalise his or her sample results". Similar to this definition, McMillan and Schumacher (2010, p. 129) define a population as “a group of elements or cases, whether

individuals, objects, or events, that conform to specific criteria and to which we intend to generalise the results of the research”. This study included more than 240 schools in the Johannesburg Central District, Gauteng Province, South Africa. Since it was not possible to draw insights from all the relevant participants from this population due to its massive size, a purposive sampling technique was used to select six public schools from the population.

4.4.3 Research sampling.

According to Greening (2019), sampling research participants is crucial as participants that are selected are most likely to be informed and knowledgeable about the research enquiry underway. Participants were selected based on unique characteristics that certified them as sole custodians of the crucial information needed to unpack the research problem (Leedy & Ormrod, 2010; Maree, 2007). Therefore, purposeful sampling was adopted for this study. Purposeful sampling implies that participants are selected based on distinguishing characteristics that qualify them as the sole custodians of the key information to unpack the problem under review (Qutoshi, 2018). This method not only enhances the depth of the data collected but also ensures that the voices and experiences of those most affected by the issue are accurately represented, leading to richer and more nuanced qualitative research findings. (Elbardan & Kholeif, 2017). Similarly, Creswell (2012) states that purposive sampling involves the intentional selection of individuals or sites that will help develop an in-depth exploration of the central issue. In this regard, six schools were chosen where research has taken place. The selection of the school was based on its classification as a Full ICT school in the Johannesburg Central District. A full ICT school is endowed with ICT infrastructure in the form of learner tablets and smartboards provided by the Gauteng Department of Education. The provincial MEC conferred this status on the then provincial MEC as a reward for outstanding matric results. The six schools under study are all township schools in Johannesburg Central District.

This has helped me gather useful information regarding the use and integration of ICT in the teaching of Business Studies. Creswell (2003) states that purposeful sampling intends to select relevant participants to provide the most valuable responses to research enquiries. Purposeful sampling was used to select the participants. The study selected six in-service Business Studies teachers who used ICT in the instruction of high school Business Studies. The in-service teachers were chosen based on Business Studies teaching and their ability to utilise ICT in the teaching of high school Business Studies. This was deliberately done to gain an understanding

of their practices in integrating ICT in teaching Business Studies focusing on what ICT is used, how it is used and why it is used.

The schools that participated in this study were located in an urban township area in Soweto, Johannesburg. The six schools are in a challenging neighbourhood, both financially and socially. However, all schools defied the odds and managed to acquire full ICT status based on their previous matric results. The six schools are no-fee schools and have been resourced under the Schools of the Future Project in Gauteng Province (GDE, 2014). The six schools are endowed with similar ICT infrastructures. Table 2 captures the resource and biographic information of the six schools which have been sampled for this study. Most learners in both schools are African and are second-language speakers of English which is the language of Teaching and Learning in schools. Business Studies is offered in English and does not have substitute resources in the 11 official languages, except for Afrikaans, a previously dominant language for teaching and learning. Table 3 gives a summary of the background of the school as well as their resources for each of the participating schools.

4.4.4 Research profiles.

The teachers selected for this study were of different ages. Three teachers were male and three were female. They have different years of experience when it comes to teaching, with the least number of years being three years, and the greatest number of years as a teacher being 19 years. All six teachers taught FET phase Business Studies and used ICT in the process of teaching. A summary of the teacher profiles is presented in Table 4.

The following tables, Table 3 and Table 4 outline's school background and resources and profile of participants for teachers respectively:

Table 3: School Profile and Resources

Name of School	Number of learners	Number of teachers	Interactive Smartboards/ Interactive White Boards	Laptops provided to Teachers	Internet Access	ICT policy	Maximum Class size	ICT Resources
Avengers Secondary School	1346	44	12	44	Yes	Yes	35	-Smart Boards Laptops -Overhead projector -Tablets
Justice Secondary School	1268	41	11	41	Yes	Yes	38	-Overhead projector -Smart Board -Tablets Laptops
Xavier School of Excellence	1058	38	9	38	Yes	Yes	27	-Laptops -Tablets -Overhead Projector -Smart Board
Titans Secondary School	1226	39	11	39	Yes	Yes	42	-Laptops -Tablets -Overhead Projector -Smart Board

Fantastic Girls' High	1364	47	13	47	Yes	Yes	49	-Overhead projector -Smart Board -Tablets Laptops
Shield Secondary School	1167	40	10	40	Yes	Yes	38	-Overhead projector -Smart Board -Tablets Laptops

Table 4: Participants Profiles

School Name	Participants	Gender	Age	Experience	Subjects	Qualifications
Avengers Secondary School	Participant 1	Male	30	5 years	Business Studies, EMS, Social Science	B.Ed, B.Ed (hons)
Justice Secondary School	Participant 2	Female	28	3 years	Business Studies, EMS, Life Orientation	B.Ed.
Xavier School of Excellence	Participant 3	Female	33	3 years 3 months	Business Studies, EMS	B.Ed
Titans Secondary School	Participant 4	Male	37	10 years 7 months	Business Studies and EMS	B.Ed
Fantastic Girls' High	Participant 5	Female	54	19 years	Business Studies	B.Ed, ACE, B.Ed (hons)
Shield Secondary School	Participant 6	Male	49	16 years	Business Studies, EMS	B.Ed, ACE

4.5 DATA COLLECTION TOOLS

According to Leedy and Ormrod (2010), successful qualitative researchers utilise various forms of data collection. Researchers typically use interviews and document analysis, to gather the required information. This study used two data collection methods: semi-structured individual interviews and document analysis. These two data generation methods were selected to triangulate the data. Triangulation involves cross-checking and cross-validation of data generated from various methods (McMillan & Schumacher, 2010; Wahyuni et al., 2020). The data collection instruments are examined in terms of their utilisation for gathering relevant data corresponding to the research questions. I initiated the study by submitting a formal request to the GDE for permission to conduct research at the specified schools, which was approved (see Appendix A). Subsequently, the principals of the identified schools were contacted and briefed about the study and its implementation in their schools. Furthermore, teachers from each school were contacted to confirm their availability and obtain their consent to participate in the study (see Appendix B). Next, I will address each data generation method utilised in this study.

4.5.1 Semi-structured individual interviews

Semi-structured individual interviews can be defined as a flexible data collection method that allows researchers to explore participants' perspectives in depth while still maintaining a consistent framework for comparison (Patnaik, 2019). They include the interviewer and the interviewee. The dynamic interaction during these interviews promoted an environment in which participants felt comfortable sharing their insights, ultimately yielding valuable qualitative data that can illuminate complex social phenomena. (Lyon, 2023) This approach not only encourages open dialogue but also enables researchers to adapt their questions based on the flow of conversation, thus uncovering deeper layers of meaning and understanding that may not surface in more rigid interview formats (Paril, 2023). Researchers typically have the responsibility of asking questions that allow for a wide range of participant responses. The purpose of the interview was to collect essential data that provide facts, views, perceptions, feelings, ideas, opinions, beliefs, and philosophies related to the topic being reviewed (Maree, 2007; Punch, 2009; Cohen, Manion, & Morrison, 2011). In addition, interviews allow researchers to observe the behaviour and gestures of the participants. Interviews

are a research strategy in which one person asks questions of another. According to Bloom et al., (2024) interviews provide a valuable opportunity for interviewers to gather information directly from participants about their experiences and the significance they attach to those experiences.

According to Leedy and Ormond (2010), a typical qualitative research sample consists of 5-25 participants who have direct experience of the phenomenon. Six interviews were conducted. According to Patton (2002), semi-structured interviews are a method used in qualitative research. This approach involves the interviewer asking questions and recording the responses from each participant. The interviews were recorded using a digital voice recorder to capture all verbal responses. According to McMillan and Schumacher (1997), tape recordings were used to ensure that verbal interactions were fully captured. The recorded data were transcribed and served as the primary source for data analysis. The interviews were transcribed to provide a comprehensive understanding of ICT integration in the subject of Business Studies. I acknowledged and captured verbatim the responses given in African languages, including IsiZulu, IsiXhosa, Sesotho, and Setswana. As I am familiar with these languages, I translated them into English for general understanding.

4.5.2 Document Analysis

In addition to interviews, various documents were analysed to gain a comprehensive understanding of the school's operations. These included minutes of the SMT meetings, school policies, learner performance statistics, and school improvement and development plans (McMillan & Schumacher, 1997). According to Johnson and Christensen (2012), document analysis is a highly valuable source of data. According to McMillan and Schumacher (2010), document analysis is a research method that involves gathering data from various sources, such as documentaries, video clips, diaries, meeting minutes, school policies, letters, journals, and other forms of structured notes. According to Yin (2009), document analysis is beneficial because it saves researchers time and money by eliminating the need for transcriptions. Documents can be easily accessed in both hard and soft copy formats.

The documents were gathered and analysed to extract pertinent information regarding the past and present efforts made by schools to integrate ICT tools into their daily teaching activities. McMillan

and Schumacker (1997) state that documents are carefully evaluated to ensure they are relevant and comprehensive in relation to the research objectives, goals and enquiries. Document analysis is valuable for building empirical knowledge (Bowen, 2009). According to Merriam (2009), documents are convenient sources of data. These documents typically include private and public records that qualitative researchers analyse to explore a research interest in a single study. Using documents to collect data can pose challenges and limitations, as schools may consider some documents to contain highly confidential information that cannot be disclosed. Prior to this, schools were assured that the documents they provided would be kept strictly confidential. To address any concerns about potential leaks, permission to analyse the documents in their presence was sought.

4.6 DATA ANALYSIS AND INTERPRETATION

According to Merrima (2009), the goal of data analysis is to interpret the collected data by gathering, merging, condensing, and comprehending the participants' statements from the interviews and connecting that information to the relevant literature. Data were collected through semi-structured individual interviews. The interviews were conducted with teachers who had direct experience teaching Business Studies. A journal was maintained during the interviews to document the behaviour and posture. This study used content analysis. Content analysis is a method in which researchers collect and arrange data into codes and categories that are relevant to their research questions (Bowen, 2009). In a similar vein, Merriam (2009) highlights the data analysis process, which involves collecting, categorising, and interpreting data. Efficient data management is crucial for successful analyses. Data analysis involves a methodical and logical approach to collecting, storing and retrieving data (De Vos, 1998). Data were collected by transcribing the audio recordings of the interviews. Through this process, I identified distinct recurring themes and grouped those that were similar.

4.6.1 Method of qualitative data analysis

Tashakkori and Teddlie (2009) assert that qualitative data are primarily analysed thematically, which is essential for identifying recurring concepts that warrant further investigation. After collecting data through individual interviews and document analysis, I recorded all interviews with

participants' consent and transcribed them verbatim. I carefully reviewed the transcripts alongside my field notes to familiarise myself with the data and to ensure a comprehensive understanding of the participants' perspectives.

I then initiated the coding process, following Creswell's (2012) guidelines and informed by Braun and Clarke's (2006) approach to thematic analysis. I began with open coding, examining the transcripts line by line and highlighting significant statements, phrases, or paragraphs that reflected participants' experiences, perceptions, or challenges related to ICT integration in Business Studies. Each meaningful segment was assigned an initial code, which was a short descriptive label summarising the content. I allowed codes to emerge naturally from the data rather than imposing pre-existing categories.

Following open coding, I conducted a refinement process. I reviewed all initial codes to identify overlaps, redundancies, and nuances. Similar codes were grouped together into broader categories, while unique codes that captured specific insights were retained for consideration. This iterative process ensured that the coding was both comprehensive and focused. I also compared codes across different participants and documents to identify recurring patterns, trends, and potential divergences.

To illustrate, during coding, I identified statements such as "Universities prepared me to use ICT tools before entering the classroom" and "The Department of Basic Education provides occasional ICT workshops". These statements were initially coded as "teacher preparation for ICT integration". As other participants expressed similar experiences, these codes were grouped under the theme "The significant role of teachers in promoting ICT integration in schools", with subthemes including "The views of having ICT in the classroom", "The role of universities in introducing pre-service teachers to ICT", "The role of the Department of Basic Education in introducing teachers to ICT", and "The collaborative role of universities and the Department of Basic Education in introducing teachers to ICT". Similarly, statements like "I often revert to traditional teaching methods" and "I am not aware of the school's ICT policy" were coded and grouped under "Teachers' experiences and perceptions of integrating ICT tools into their daily teaching practices", with subthemes including "Resistance to abandoning traditional teaching

methods”, “Frequency of ICT integration”, “Commonly used ICT tools”, and “Lack of awareness of ICT school policies”.

Next, I developed themes and subthemes by examining relationships among the refined codes. Each theme was documented with supporting evidence, including direct participant quotes and excerpts from document analysis. This step ensured that the themes were grounded in the data and addressed the research questions. Additional themes included “The impact of ICT integration on teaching practices in Business Studies”, with subthemes such as “ICT integration as a means to enhance engagement and understanding”, “Enhancing efficiency and assessment through ICT integration”, “ICT as a tool for optimising resources”, “Issues of learner deception and misuse of devices”, “Professional development and teacher support”, and “Infrastructural and technical challenges related to ICT integration in the Business Studies classroom”. These themes were reviewed to ensure they captured the pedagogical significance of integrating ICT into Business Studies classrooms.

To ensure trustworthiness, I used several strategies. I maintained a reflective journal throughout the analysis to record my thoughts, decisions, and interpretations. I employed triangulation by cross-referencing interview data with document analysis to confirm consistency. Member checking was used, where participants verified the accuracy of their transcribed interviews. Finally, the analysis was audited to provide external validation of the coding and thematic development (Merriam, 2009).

The data were organised into six folders, each named after a participating school (Avengers Secondary, Justice Secondary, Xavier School, Titans Secondary, Fantastic Girls High, and Shield Secondary School). Each folder contained transcripts from the respective participants, who were assigned pseudonyms (Participant 1, Participant 2, etc.) to ensure anonymity. I repeatedly reviewed the transcripts, condensing the data into brief descriptions, comparing and categorising them, and identifying patterns, trends, and themes. This process allowed me to align the themes with the research questions and objectives, emphasising the pedagogical value of ICT in Business Studies education.

Below is a diagrammatic representation of the coding and thematic analysis process by Creswell (2012), which illustrates the flow from data collection, transcription, open coding, code refinement, theme development, and thematic mapping. The diagram complements the detailed textual explanation, providing a clear and systematic account of how the qualitative data were analysed and interpreted in this study.

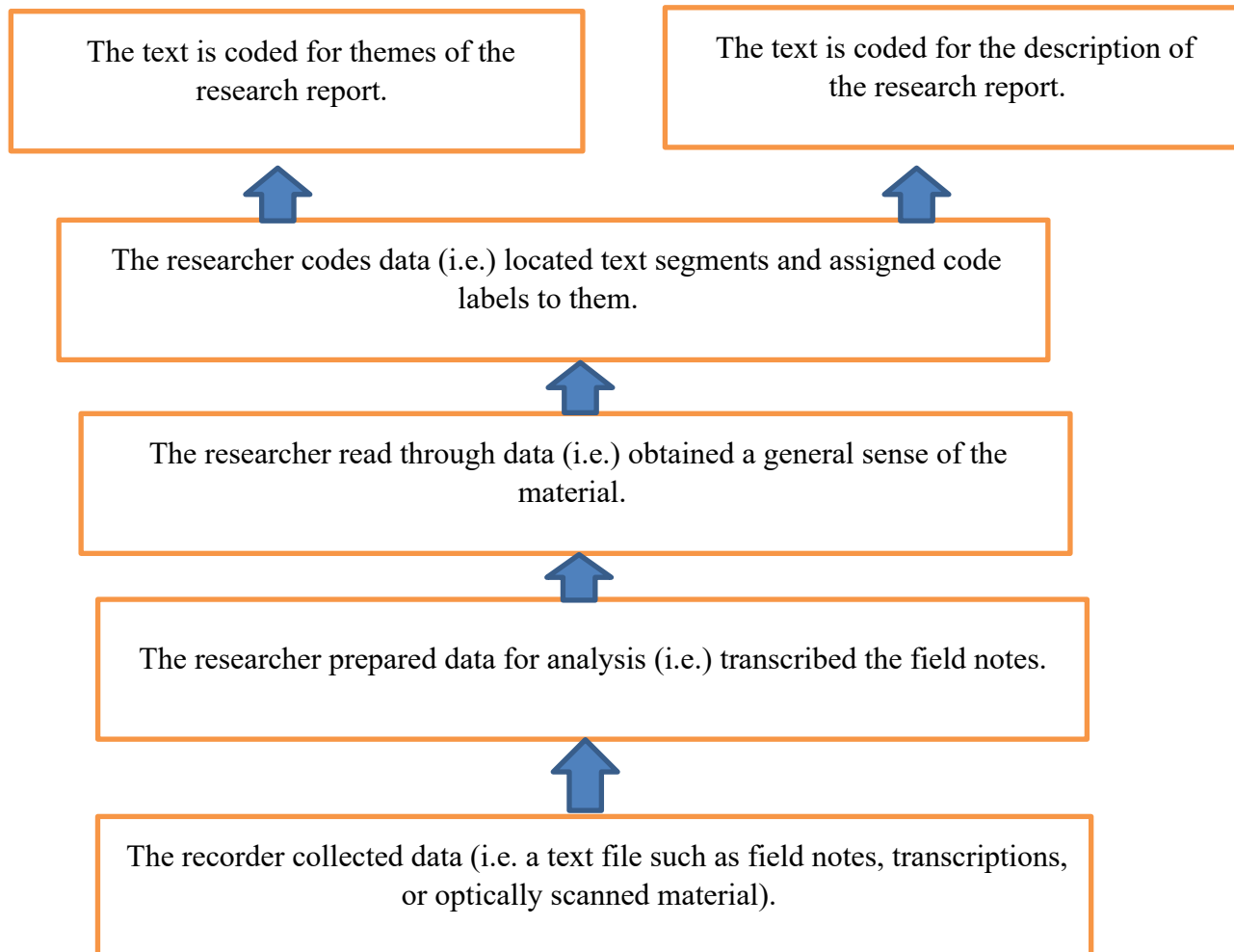


Figure 7: Stages in Qualitative data analysis and interpretation

Source: Creswell (2012, p. 237).

4.7 THE STANDARDS RELATING TO VALIDITY, RELIABILITY, AND TRUSTWORTHINESS OF THE STUDY

The concept of validity refers to the accuracy of inferences, interpretations, or actions derived from test scores (Johnson & Christensen, 2024). In the same breath, Malhotra (2012) states that

reliability is the extent to which research findings can be replicated in another study. In addition, the research instrument is considered reliable when it consistently produces consistent results when measuring a specific phenomenon. In addition, according to Joppa (2000), the reliability of accurately representing the entire population under study can be determined by replicating the research results using a similar design, methodology, and methods.

To enhance the credibility of the qualitative research data, specific interview schedules were created and implemented during each interview session. As previously stated, six teachers were interviewed to obtain their perspectives. I carefully prepared interview schedules for both individual and group sessions. The interview questions were provided to my supervisor. My supervisor thoroughly examined the accuracy and validity of the interview questions used. She provided feedback on the questions, offering suggestions, corrections, and comments. After carefully considering and implementing the suggestions, corrections, and comments, the final questions for the individual and focus group interviews were generated. I maintained clear and regular communication with my supervisor throughout the process. It is crucial to ensure that a research study effectively addresses the research questions in order to easily evaluate its trustworthiness (Marshall & Rosmann, 2015). I aim to align myself with the fundamental questions that researchers must ask to ensure the trustworthiness of their study, as outlined by Marshall and Rosmann (2015, p. 143-145).

It is important to consider the credibility of the research findings. Qualitative researchers often ask themselves this question.

- Can my findings be applied to different settings or groups?
- How can I ensure that my findings are easily reproducible in future studies with the same participants and in similar fields?
- How can I guarantee that the findings accurately represent the participants' experiences, perceptions, and examination without being influenced by the researcher's biases?

The data collection process involved multiple techniques to ensure accuracy and reliability. This was crucial for maintaining the integrity of our study. Furthermore, this study considered Guba

and Lincoln's (2005) standards of trustworthiness, which include transferability, credibility, conformability, and dependability (Shenton, 2004; De Vos, 2006). These standards were deemed suitable for ensuring the validity and reliability of the study.

4.7.1 Transferability

Transferability, as described by Polit and Beck (2012), pertains to the degree to which findings from one study can be applied and adapted to another study. In addition, Foster (2005) acknowledged the importance of transferability, which refers to the ability of findings from one study to be applicable in a different context. According to Cope (2013), achieving this criterion involves ensuring that participants who are not directly involved in the study or readers can connect the results to specific experiences in their lives.

4.7.2 Credibility

For credibility, researchers should perform member checking by going back to the participants to confirm the accuracy and completeness of the collected data, allowing for verification (Creswell, 2003). In this study, I made it clear to the participants that they would not face any judgment or evaluation based on their roles or responsibilities. Our focus was on ensuring compliance with education laws and identifying strategies for involving women parents in school governance to enhance school improvement. According to Thomas (2006), it is crucial for researchers to ensure that participants feel included in a project and that their inputs are important.

4.7.3 Conformability

Rangongo (2011) and Cope (2013) argue that conformability is crucial in research, emphasising the importance of prioritising research findings and conclusions over the biases and opinions of the researcher. Foster (2005) states that conformability involves ensuring that research findings are acceptable or can be supported by others. This was achieved by performing data audits to

identify any biases present, thus ensuring that the study's limitations were clearly stated (Foster, 2005). All relevant documentation was provided for further examinations.

4.7.4 Dependability

Dependability is crucial for researchers to effectively navigate and respond to the dynamic nature of the problem being studied. It requires a deep understanding of the research setting and the ability to make the necessary adjustments to the design. Similarly, according to Merriam (2009), research design is built on the recognition that participant experiences and the research design itself are adaptable and subject to change. Therefore, I had to adapt and refine the research design to align with the collected data. The dependability of this study was ensured by meticulously documenting the research process and providing a detailed description of the study context.

4.8 ETHICAL CLEARANCE

Research ethics involves ethical considerations, ensuring that the research process maintains ethical standards (Wisker, 2008). According to McMillan and Schumacher (1997), it is crucial for research to carefully consider ethical principles. In a scholarly publication, De Vos, Strydom, Fouche, and Delport (2006) explained that research ethics encompass principles rooted in widely accepted moral values. These principles provide explicit instructions and guidelines for appropriate societal behaviour. Researchers have a duty to ensure that all aspects of the research process adhere to ethical standards. This includes coordinating the pre-research phase, as well as compiling the research report, which encompasses all findings and recommendations for future research (Potokri, 2011, 2012). To comply with ethical guidelines, I obtained written permission from the Gauteng Department of Education (GDE). A letter was sent to the GDE requesting permission to conduct research at six schools, and the letter also provided an explanation of the purpose of conducting research. Subsequently, I obtained a letter of permission from the GDE (see Annexure A) and was prepared to begin data collection. The research has obtained internal permission from the University of Witwatersrand Ethical Clearance Committee.

4.8.1 Consent for Voluntary Participation

According to Rangongo (2011), informed consent refers to the freedom individuals and/or groups have to choose whether or not to participate in a study. After informing participants about the study's expectations and the potential impact of their decisions, this follows. Morgan (2022) also stated that informed consent involves participants deciding whether or not to participate in the study. Prior to collecting data, I requested the participants' voluntary participation. According to De Vos (2006:59), participants should be provided with information about the study, research goals, and procedure in order to obtain their consent to participate. The participants were informed that their involvement in this study was completely optional and that they had the freedom to withdraw at any time without facing any consequences or judgment. Next, the participants were asked to sign a voluntary consent form (see Annexure D) to confirm their understanding of the study requirements.

4.8.2 Privacy, anonymity, and confidentiality.

It is important to provide participants with a guarantee of privacy, anonymity, and confidentiality when it comes to the data collected about their perceptions. According to Mouton (2011), privacy and anonymity involve safeguarding the identities of participants so that they are not revealed, while confidentiality ensures that the data they provide cannot be linked back to them. Privacy refers to an individual's right to control the disclosure of their attitudes, beliefs, and behaviours to others (De Vos, 2006).

To uphold the rights mentioned, I committed to the participants that their identities and affiliations would remain confidential. Therefore, no actual names were used when analysing the data and presenting the findings. Pseudonyms were used to replace the actual names of the participants and schools. It was crucial to consistently reassure the participants that their identities would remain confidential and their information would be securely protected. The participants received detailed information regarding the research objectives, methods, potential risks, and requirements of this study.

4.8.3 Deception of participants

In his work, De Vos (2006) explains that deception of participants involves intentionally misrepresenting facts in order to make someone believe something false, thereby violating their right to respect. According to Neuman (2000), deception in research occurs when the researcher deliberately provides false or fabricated information about people's actions or certain aspects of a setting. It was crucial to maintain accuracy and avoid misinformation while conducting this study, both for the participants and myself.

4.8.4 Researcher's Actions and Competency

As stated by De Vos (2006), researchers need to demonstrate their competence and skills to successfully carry out the proposed study. As a researcher, it is crucial to grasp the ethical obligations associated with research design, methodology, methods, population, sampling, and reporting the findings and conclusions in the final report. It is crucial to acknowledge all sources of borrowed information in this study to prevent plagiarism. To meet this requirement, I utilised plagiarism software to thoroughly examine and confirm my adherence to it.

4.9 LIMITATIONS OF THE STUDY

The limitations of this study are associated with the research sample and simplification of the findings. This study employed a qualitative research design and focused on six participants from one educational district in Johannesburg. This study aimed to gather insights from teachers with direct experience teaching Business Studies to learners in the further education and training phase (Grades 10 to 12). The teachers were anticipated to possess unique experiences and insights concerning ICT integration. Only schools currently piloting as "ICT enabled" were approached. I did not consider all schools, as my aim was to gain insights from teachers responsible for integrating ICT learning into their daily routines. The study concentrated on one educational district within the Johannesburg region, out of a total of 15 districts in the Gauteng province, leading to a limited sample size. Despite the small sample size, the significance of the findings was maintained because of the enhanced data obtained from semi-structured individual interviews,

which adhered rigorously to standards of validity and trustworthiness. However, the inability to generalise the findings to a larger population is not a significant limitation, as the oversimplification of the research outcomes was not an objective of this study.

4.10 CHAPTER SUMMARY

In this chapter, I have covered the research design and methodology used to address the question regarding the pedagogical value of teachers' use of ICT on instructional practices in teaching Business Studies. A qualitative methodology within an interpretive paradigm was chosen to fulfil the study objectives. This chapter provides a clear and succinct account of the sampling procedure, data collection tools, and the process used for data analysis. In conclusion, this chapter provides a summary of the study's limitations and the strategies implemented to address ethical concerns in research. In Chapter five, I present the data that has been generated through individual interviews and document analysis by utilising themes and sub-themes based on the responses of the participants.

CHAPTER 5:

ANALYSIS OF RESEARCH CONVERSATIONS

5.1 INTRODUCTION

The previous chapter discussed the research design, including the methodology and methods used to collect data from the selected participants in this study. Semi-structured individual interviews were conducted to explore the research questions and sub-research questions. This chapter presents the data based on insights gathered from the participants.

5.2 RESEARCH QUESTIONS RESTATED

The main research question is:

Is Information Communication Technology (ICT) integrated into the pedagogy of business studies in Johannesburg Central District Schools?

The secondary (sub-research) questions are:

1. What do teachers understand by ICT integration when teaching Business Studies in Johannesburg Central District Schools?
2. How do teachers currently integrate ICT into their teaching of Business Studies in Johannesburg Central District Schools?
3. What are the experiences of teachers who have integrated ICT into their teaching of Business Studies in Johannesburg Central District Schools?

5.3 DATA ORGANISATION: THEMES AND SUB-THEMES

Pham (2024) posits that data analysis in qualitative research involves the process of interpreting and making sense of non-numerical data to understand complex phenomena. Furthermore, Pham (2024) suggests that data analysis is a meticulous process influenced by various factors, including the research context, researchers' subjectivity, and the nature of the data collected. Similarly,

Babbie (2020) supports this suggestion by asserting that data analysis is a methodical use of logical techniques to describe, explain, and evaluate research data to discover valuable information, draw conclusions, and assist in decision-making. Data analysis is an essential part of the research process, as it enables researchers to interpret and make sense of extensive data (Vogt & Johnson, 2011).

This study employed inductive data analysis to present various themes and subthemes. The development of themes and subthemes in qualitative research is essential for transforming raw data into meaningful interpretations. Thematic analysis is a structured approach to identify and explain these themes, involving several systematic steps. For instance, Suwanbamrung and Kaewsawat (2020) outline a five-step process that begins with a thorough reading of the data, followed by coding, categorisation, interpretation, and finally, the establishment of main themes (Suwanbamrung & Kaewsawat, 2020; Bay, 2020).

Therefore, this study presents a thematic analysis of the data presentation and research findings which is structured around key themes and subthemes. These themes and subthemes emerged through a coding process of the collected data, wherein responses were categorised based on frequent patterns and their alignment with both the research questions and the insights gathered from the literature review. This systematic approach ensures that the data presentation is not merely descriptive but offers a nuanced and insightful understanding of the phenomenon under investigation.

The table outlining the main themes and sub-themes of this study is presented below.

Table 5: Themes and Sub-Themes

<i>NO</i>	<i>THEMES</i>	<i>SUB-THEMES</i>
1	The significant role of teachers in promoting ICT integration in schools	• The views of having ICT in the classroom • The role of universities in introducing pre-service teachers to ICT. • The role of the Department of Basic Education in introducing teachers to ICT. • The collaborative role of universities and the Department of Basic Education in introducing teachers to ICT.
2	Teachers' experiences and perceptions of integrating ICT tools into their daily teaching practices.	• Resistance to abandoning traditional teaching methods • Frequency of ICT integration. • Commonly used ICT tools. • Lack of awareness of ICT school policies.
3	The impact of ICT integration on teaching practices in Business Studies.	• ICT integration as a means to enhance engagement and understanding • Enhancing efficiency and assessment through ICT integration • ICT as a tool for optimising resources. • Issues of learner deception and misuse of devices. • Professional Development and Teacher Support. • Infrastructural and technical challenges related to ICT integration in the Business studies classroom.

Note: Table 5 forms the basis for each sub-section that follows in Section 5.4. To address a specific research question, I will extract each principal theme and its associated sub-themes based on the

insights gathered from participant conversations. Subsequent tables numbered Table 6, Table 7 and Table 8 are presented to facilitate discussion on particular themes.

5.4 IN-DEPTH EXPLORATIONS OF THEMES GARNERED FROM THE SEMI STRUCTURED INDIVIDUAL INTERVIEWS.

In this section, I aim to create a comprehensive presentation by interpreting each of the three themes and juxtaposing them with their respective subthemes. During the process of interpreting and analysing themes, it is usual practice for researchers to use pieces of information from the participants' verbatim responses. This is especially true in situations where the participants' voices should be heard. For this reason, I shall make use of such excerpts to imitate their voices and eliminate the possibility of falsifying any response(s) that they would have given. Usually, the utilisation of direct responses from participants tends to reinforce certain assertions that are demonstrated in the literature. Additionally, it offers a more effective method for creating recommendations for subsequent investigations. In addition, to demonstrate the differences between the voices of the participants and mine, I will utilise verbatim comments, which will be displayed in italics and indented specifically for the participants. My thoughts, on the other hand, will be referred to statements that begin with "I" and will not be recessed or italicised.

5.4.1 THEME 1: The impactful role of educational stakeholders in advancing ICT integration in schools.

Table 6: Themes and sub-themes on the impact of educational stakeholders in advancing ICT integration.

5.4.1	The significant role of teachers in promoting ICT integration in schools	5.4.1.1 The views of having ICT in the classroom 5.4.1.2 The role of universities in introducing pre-service teachers to ICT. 5.4.1.3 The role of the Department of Basic Education in introducing teachers to ICT. 5.4.1.4 The collaborative role of universities and the Department of Basic Education in introducing teachers to ICT.
-------	---	--

The integration of ICT in education has emerged as a crucial element of contemporary teaching and learning. Within the field of education, the integration of ICT in classrooms has significantly changed the approach to teaching and learning methods. Given the rapid progress of technology, it is imperative for teachers and other stakeholders, including training facilities, policymakers, and administrators, to take on a vital role in promoting the integration of ICT in schools. This integration aims to improve learning outcomes. Stakeholders possess the authority to shape and propel the implementation of ICT in educational environments, thus impacting its overall effectiveness and influence on the learning outcomes of learners. Educational stakeholders have a crucial role in advancing ICT integration because of their extensive knowledge and persistent support for the potential benefits of technology in education, including its positive impact on learning outcomes (Padayachee, 2017). This view was pointed out by Participant 5 during her closing remarks of the interview after she was asked if there was anything of interest or that she felt needed to also be captured in relation to ICT integration in the subject of Business studies, she stated that:

ICT is a good thing in classes. It is something that can even make our country move forward in these ever-changing times. However, this is only possible if we all come together with a common goal and vision. However, this may take some time because not all teachers are skilled in using ICT. Other departments may assist in equipping teachers with the necessary skills. (Participant 5).

If teachers and other stakeholders want to see effective implementation of ICT in the classroom, they need to engage in dialogue. All concerned parties can work together and gain a better understanding through this discourse, which guarantees that everyone's concerns and requirements are considered. Additionally, by engaging in dialogue, we can ensure that everyone is pulling in the same direction when it comes to implementing ICT in the classroom. Furthermore, stakeholders are more likely to share ideas, experiences, and best practices when they engage in such discussions (Lomos et al., 2023). When engaging with the participants, I noticed a pattern in their responses to the questions. This pattern seems to allude to the idea that they are willing to have ICT in their classes as they see it as a positive tool to ensure that teaching and learning takes place. However, other stakeholders, such as universities and employers, who in this case is the Department of Education, appear to be the major role players in ensuring that the incorporation of

ICT in teaching and learning can be fast-tracked and made possible with their intervention, as they play a pivotal role in ensuring that the teachers are ready for the ICT classroom. The following sub-theme echoes these views.

5.4.1.1 The views of having ICT in the classroom.

I was intrigued by the consensus among the participants, which suggests that incorporating ICT into the classroom could significantly transform learners' learning experiences. The submission made by Participants submitted that ICT allows for more individualised lessons that consider learners' unique learning styles and demands. In addition, it provides tools that are both interesting and interactive, which can inspire learners to be more involved in class and more passionate about learning. Furthermore, the participants believed that by incorporating ICT, learners are better prepared for the tertiary environment. They are provided with the tools they need to thrive in the 21st century, such as the capacity to solve problems digitally, adapt to new technologies, and become digital natives. Therefore, there is support for the use of ICT in education to improve the efficiency of instruction, increase participation from learners, and better equip them to face future challenges (Anastasopoulou et al., 2024; Teixeira et al., 2024). This became evident when Participant 1 was asked about how often ICT was used in the process of teaching business studies. Part of the response from the participant was a statement which said:

I cannot imagine my lessons being productive without ICT in my classroom. ICT is a part of my classes now; it is a must-have in my classes. (Participant 1)

When asked the same question, part of the response by Participant 2 expressed a similar view to that of Participant 1, as she stated that:

...technology in classrooms should be standardised for each class. It can elevate the level of classroom participation and understanding of learners. (Participant 2)

It is evident from the above utterances that teachers are interested in permanently migrating to a paperless system. However, this is not only to make the administrative part of the teacher much easier, but also to achieve academic achievement for the learners. This is further accentuated by Participant 3 in her closing remarks when she was also asked if there was anything of interest or

that she felt needed to also be captured in relation to ICT integration in the subject of Business studies, she states that:

All I can say is that ICT really helps. Learners show greater understanding when taught using technology. It is definitely a good tool for the day-to-day running of the classroom. (Participant 3)

While the statement by Participant 3 is debatable due to other views that advocate for writing as a way of learning, Participant 4 seems to support the view of Participant 3. Echoing the sentiments of Participant 3, when asked about the frequency of utilising ICT technologies in his lessons, Participant 4 stated that:

ICT is there to make life easier; it is there to make lessons flow better. I personally would do away with anything that has books or printouts, but unfortunately, I cannot. I need to protect myself and my job, so I make sure that they write something, said one teacher. However, having ICT in the classroom is a must, especially now that we are in the era of the 4th industrial revolution. (Participant 4)

From the above, it is clear that a considerable number of participants unanimously agree that integrating ICT into business studies lessons is essential. They state that technology is bound to increasingly influence how education is shaped moving forward.

The use of ICT in teaching business studies is not a temporary trend but a fundamental component of contemporary teaching and learning practices. The participants emphasised that technology enhances the learning experience by enabling the interactive and practical application of business concepts. This integration supports the development of critical skills necessary in today's digital economy, such as data analysis, digital marketing, and online collaboration. Consequently, teachers and institutions are urged to embrace and continuously evolve with technological advancements to prepare learners effectively for the dynamic business world (Anastasopoulou et al., 2024; Paulo et al., 2024).

Not all teachers are willing to accept modern teaching styles which are technology-driven. Their view is that this is not because they are being defiant or are resisting the change; however, it is

because of other elements or circumstances which may well be beyond their control. A common issue that is brought to light is that of teachers who are not well equipped to utilise ICT in the classroom. This is made evident when revisiting what was stated earlier by Participant 5 when she stated that:

ICT is a good thing in classes. It is something that can even make our country move forward in these forever changing times. But this is only possible if we all come together with a common goal and vision. However, this poses challenges. It is unfortunate that not all teachers are skilled in using ICT. Maybe the other departments can assist in equipping teachers with the necessary skills. (Participant 5)

Similarly, Participant 6 confidently stated that:

ICT is the future. As teachers, we need to prepare ourselves to adapt and live with technology in our classrooms. This is because technology advances every day. Fortunately, technology cannot remove the human element, which is us teachers, but it will forever be part of our lives. Therefore, we need to learn to adapt fast and make ICT a part of us in the classroom. Therefore, for me, it is a must-have. This is something that I enjoy in the classroom. I will not lie and say it was easy to adapt, but when I saw how learners enjoyed it, I decided to learn more about technology.

The above response from the participants demonstrates that they are aware that in today's educational landscape, the integration of ICT in classrooms has evolved from being a luxury to becoming an essential requirement (Kumar, 2024). In South Africa, a country with immense potential but burdened by historical inequalities, it is crucial to prioritise the integration of ICT into all classrooms. Furthermore, the participants believed that this is essential for closing educational gaps and promoting inclusivity in society.

I contend that the integration of ICT in South African classrooms is not just a reaction to global digitisation but rather a strategic imperative. The integration of ICT has the potential to revolutionise teaching methods, accommodate various learning preferences, and provide instant access to a wide range of information and resources (Sithole & Mbukanma, 2024). This is especially important in a country where educational resources have been historically unequal, with

rural and underprivileged communities experiencing significant disadvantages. These disadvantages unfortunately affect not only the learners in the classroom but also the teachers who are expected to excel in content delivery through ICT tools. For this reason, I present the voices of the participants in the second subtheme that tries to understand how stakeholders such as universities and the Department of Basic Education attempt to bridge these gaps of inequalities in relation to preparing teachers for a work environment which is technologically demanding.

5.4.1.2 The role of universities in introducing pre-service teachers to ICT.

As we progress further into the digital age, teachers' ability to use ICT in their classrooms is becoming an increasingly important factor in the training of capable professionals. It is the obligation of universities, which are the key intermediaries for the training of future teachers, to provide pre-service teachers with the ICT skills that they need (Gachie, 2024; Ngcapu et al., 2024; Sithole & Mbukanma, 2024).

In today's educational systems, the importance of ICT is emphasised for both teachers and learners. Digital native learners have a set of expectations for a learning environment that is enhanced by technology. These expectations are brought with them when they enter the class. To satisfy these expectations and effectively support learning in a culture driven by knowledge and information, pre-service teachers must possess strong ICT skills (Gachie, 2024; Ngcapu et al., 2024).

Universities facilitate the integration of ICT in education, particularly through their Teacher Education Programs. Not only are they responsible for ensuring that pre-service teachers are consumers of technology, but they are also entrusted with ensuring that they adapt to utilising these tools to assist and enhance the teaching and learning processes. The participants in this study were teachers who utilised ICT in teaching business studies; therefore, I considered it fit to understand where the knowledge of utilising these ICT tools emanates from. The participants were asked whether they had been exposed to ICT as pre-service or in-service teachers. The responses were information-packed and offered different dimensions for understanding the phenomenon. I was amazed by the statement made by Participant 4 when he exclaimed that he was not sure if he would answer the question correctly, and then proceeded to say:

I studied in a school in a village in KZN, and there was no technology for us at school. My parents could not afford to buy fancy computers. ICT for me only started once I entered university. We were forced to learn how to use computers because everything was done on computers. Communication was sent to us using emails, and assignments and projects had to be written using a computer, so it was very tough to adjust because I had never used a computer. But [then]... that assisted me because now I can use these laptops that the department gives us, and I am also able to use the smartboard which you see here in my class. (Participant 4)

To ensure that I understood the participant well, I posed a follow up question which was “Are you therefore saying that your exposure started when you were a pre-service teacher?” In his response, he further explained confidently as follows:

Yes, I have been using technology since I was a university student. The university helped me learn the basics of computers; therefore, I can say that I was exposed to technology while I was a pre-service teacher. (Participant 4)

From the above response, it is evident that the infrastructure that universities have can benefit teachers in their training process. However, universities that train teachers have a set curriculum which needs to be followed. This means that there might not be sufficient time, resources, or infrastructure to customise the curriculum to be fitting for all teachers to complete their qualifications with the necessary skills that will prepare them for an ICT-driven classroom. Instead, most universities utilise their ICT infrastructure for the benefit of the institution and its smooth running. Once the pre-service teachers complete their qualification and must transfer to the work environment where they possibly have to utilise ICT for content delivery, the burden then rests with the Department of Basic Education to ensure that the teacher is equipped with the knowledge and skill to manoeuvre the technology in the classroom (Gamage & Tanwar, 2018). This therefore allows me to present the next sub-theme which focuses on the role played by the Department of Education to ensure that teachers are equipped with the ICT tools and skills to successfully deliver a lesson.

5.4.1.3 The role of the Department of Basic education in introducing teachers to ICT.

The participants were all asked the same question which was: “Did you get exposed to ICT knowledge as a pre-service or in-service teacher?” It is worth pointing out that the question referred to the teaching methodologies taught at the university level which aim at preparing them for when they are in-service teachers. However, some participants’ responses spoke about exposure to ICT from a more general perspective. Participant 4 stated that he was exposed to ICT while being a pre-service teacher, and I was astonished by the contrasting position presented by participants 2 and 3, who claimed that their ICT exposure came to existence once they were in-service teachers. Participant 2 stated:

I was exposed to ICT knowledge as an in-service teacher because I only knew about interactive whiteboards when I started working as a teacher. (Participant 2).

She further explained this by stating:

I used to know them before I became a teacher; I knew that they existed, but it ended there. For me to use them... I started using them when I was practicing as a teacher. (Participant 2)

In a similar vein, Participant 3 stated:

I started using technology once I was employed. Before that, there was not much. (Participant 3)

As a follow-up question, I asked Participant 3 about her tertiary education, where she trained to be a teacher, and whether she was exposed to the use of ICT in any form. Her response was:

I was, but it was only for the sake of typing assignments and researching any assignments given to us. For teaching purposes, I only started using ICT equipment once I was employed. Even with exposure, you are not really trained. You are simply told what is expected of you. You mainly rely on your friends or trial and error. You will make mistakes until you get it correct. To be honest, the university

did not do much for me when it comes to ICT; my exposure came after I started working, as I have stated earlier. (Participant 3)

In addition to the responses of Participants 2 and 3, a similar trend was observed with Participant 6, who also stated that their exposure was when they were an in-service teacher. However, Participant 6 also included an element of being taught by learners how to use ICT. He mentioned how learners assisted him when he got stuck or challenged while attempting to utilise ICT during a lesson. He confidently stated:

I must admit that I have always been a traditional teacher. I was very hesitant to accept that my class would be converted to a smart classroom with a smartboard installed. This is because I was worried about not being able to use it properly. As I stated earlier, once I saw how positive learners were towards this form of learning, I quickly changed my mentality. I accepted this and began to learn more. My learners showed me some things. You see the thing about me is that I am not scared or ashamed to admit when I don't know how to do something. These learners know how to use technology, and they are always willing to assist if you are true to them and show them that it is for their benefit. They show me or correct me when I get stuck. They even taught me shortcuts to other things. [Yes], that is the relationship I have with my learners. I learned other things in the workshops provided by the department. They were not enough, but they helped me because at least now I cannot say that I am completely clueless about using smartboards and other technologies. (Participant 6)

Based on the above utterances by the three participants, it is evident that the rapid progression of technology has surpassed traditional techniques for imparting knowledge to learners. As a result, teachers constantly find themselves in an ongoing process of adaptation. Therefore, as demonstrated by the participants above, learning about ICT on the job becomes a necessity as teachers strive to equip themselves with the skills essential for navigating the digital realm. This adaptability is a testament to teachers' dedication to remaining relevant and providing contemporary education to their learners.

5.4.1.4 The collaborative role of Universities and the Department of Basic education in introducing teachers to ICT.

While some participants were exposed to ICT as pre-service teachers, others were exposed as in-service teachers. During the interview process, I came across responses which could be classified as both pre-service and in-service exposure. Participants 1 and 5 echoed similar sentiments when responding to the question of whether they were exposed to ICT as pre-service or in-service teachers. Participant 1 responded that she thinks it is both pre-service and in-service. She further explained this by stating:

This is because in varsity, we did a course called New Literacies for teachers, and in that course, we were introduced to using a bit of ICT as teachers. When we were doing EMS and Business Studies at varsity, we were also introduced to using simulations, videos, and slides when teaching these subjects. As an in-service teacher, I was also introduced to ICT, especially when we started using new platforms like Zoom and Microsoft Teams. Covid-19 has pushed us to use ICT more than ever before. Therefore, both times I have been introduced to ICT (Participant 1).

Similarly, Participant 5 explained her exposure to ICT, stating that “[she] was exposed to ICT through the Department of Education. She explained this as follows:

I still remember the first time we were exposed; we went to Tembisa because I think it was launched on the East Rand side. It is where we were given an opportunity to work on it, and then we returned to our schools. From there he started to nationalise this program, especially in Gauteng where we found out that our school is one of the schools that was selected to operate under ICT. I was the first group to participate in ICT training. It was easy for me because I had a background in computer things. The government provided us with tables and laptops to make it easier for us to work on it, but time and again, there were calls for workshops so that we do not forget how to use these things (Participant 5).

The above statement leaves me perplexed. This is because I identified two contradictory statements made by the participant. This led me to seek clarity by asking follow-up questions. Participant 5 stated that she was exposed to ICT with the Department of Education but later stated that it was not difficult for her because she had some background in the use of computers. This led me to ask for confirmation of her statement that she knew how to use computers. The participant confidently confirmed this statement. I then asked a follow-up question: “So where did you learn how to use computers?”. In her response, she stated:

Ok! Before I went to university, I attended a TVET college somewhere in the East Rand, where I did a course in managerial and secretarial studies, where it was a must to learn how to use a computer. Therefore, I have had the necessary knowledge about how computers operate since then. I was not blank, like I knew nothing. However, the secretarial course I took really helped me. Even when I started teaching, the computer skills were already there from the previous course. I was able to help other students who were struggling to use computers when we were together pursuing our teaching degrees. (Participant 5).

The participants displayed the will to learn and develop themselves so that they could be better agents of change who could best interact with the ICT tools, the content, and the learners. This willingness could be better sustained through partnerships between Universities and the Department of Basic Education. Based on the statements from all participants under this main theme, “The impactful role of educational stakeholders in advancing ICT integration in schools”, my contestation is that a partnership between universities and the government in teacher training for computer skills is a prime example of effective teamwork to improve educational strategies and outcomes. Drawing from the participants, it is evident that universities are known for their expertise in pedagogical research and curriculum development, while governments play a crucial role in providing the necessary policy framework, funding, and infrastructural support for teacher-training programs (Bouttavong, 2023; Retnowati et al., 2024). Through collaboration, they ensure that pre-service teacher education aligns with national educational technology standards. This should ensure that future teachers are not only skilled at integrating ICT into their teaching but also equipped to adapt to constantly evolving digital technology. This partnership should enable

the efficient scaling of training initiatives, ensuring that teachers in different regions have equal access to ICT resources and professional development opportunities.

5.4.2 THEME 2: Teachers' experiences and perceptions of integrating ICT tools into their daily teaching practices.

Table 7: Themes and sub-themes on the teachers' experiences and perceptions of integrating ICT tools into their daily teaching practices.

5.4.2	Teachers' experiences and perceptions of integrating ICT tools into their daily teaching practices.	5.4.2.1 Resistance to abandoning traditional teaching methods 5.4.2.2 Frequency of ICT integration. 5.4.2.3 Commonly used ICT tools. 5.4.2.4 How ICT tools are used in the classroom. 5.4.2.5 Lack of awareness of ICT school policies.
--------------	--	--

When teachers integrate ICT tools into their daily teaching, they are confronted with complex challenges that impact both their pedagogical methods and the learning environment (Nyathi & Joseph, 2024; Ntsobi, 2022). As they navigate the complex and constantly changing landscape of digital technologies, teachers' experiences and perceptions of ICT are important in determining the extent to which devices are adopted and utilised effectively in the classroom. Due to the diverse backgrounds, experiences, and ICT training of the participants in this study, different views about ICT in their day-to-day teaching also began to emerge. On the one hand, there are participants who shared positive sentiments when discussing their experiences and perceptions. However, some participants shared experiences which could be viewed as negative. It is worth pointing out that this study does not dwell on the emotional aspect of the use of ICT in the classroom; however, the experiences which are emotional in nature also need to be considered, as they may also impact the overall flow of a lesson and the teacher's views on ICT integration in the classroom. As mentioned above, there are both positive and negative experiences and perceptions that exist when looking at teachers' integration of ICT tools on a day-to-day basis. When asked about the benefits of utilising ICT in a lesson, Participant 1 displayed a positive perspective about integrating ICT tools in the process of teaching on a day-to-day basis when he said, "It just makes life much easier".

Similarly, Participant 6 attested to the statement of Participant 1 when he said:

Personally, I think that ICT is good for us as teachers. My view of ICT is that it is there to make life easy. I honestly love this idea. (Participant 6).

Participants 1 and 6 expressed positive views on the daily use of ICT in the classroom. However, Participant 6's additional insights, highlighting the pressures that discourage consistent ICT integration, led to the emergence of the sub-theme "Resistance to Leaving Conventional Teaching" within the broader theme of teachers' experiences and perceptions. This subtheme explored the challenges teachers faced in adopting technology despite recognising its benefits.

5.4.2.1 Resistance to abandoning traditional teaching methods.

When evaluating the likelihood of resistance to changing conventional teaching approaches, it is crucial to recognise the diverse elements that contribute to this resistance. Resistance to change can be attributed to real factors such as a preference for familiar methods of teaching, time, doubt over the effectiveness of new teaching strategies, and perceived difficulties in implementing change (Mlambo et al., 2020). However, there are other external factors, including the pressure that comes with a top-down approach to management style from district officials. As mentioned above, Participant 6 expressed his displeasure with the pressure applied by district officials which eventually forces teachers to abandon the utilisation of ICT in the classroom. When he was responding to the question about how often he used ICT tools in the classroom, he first expressed positive appreciation of ICT in the classroom. However, he continued to express how the issue of limited time and pressure from district leadership made it difficult for him to utilise ICT. This was evident when he stated:

... it is not always easy to work with technology, and for that, I blame the Department of Education. They mostly put so much pressure on us that we end up leaving this technology and moving to the old way of teaching which now takes us back to papers. I am always honest with my learners; I tell them that the department is putting pressure on us to cover a specific topic in a specific time through their ATP, which means that we must pick up the pace. When we pick up the pace, we

then move to the conventional way of teaching, where we use the notes provided to us by the department. At that time, I knew that there was no time for videos or pictures that related to what I must teach. The sad part is that I know my learners do not like that, but what else can I do? The department will punish me and label me incompetent if I fall behind. This is why, in most cases, I find myself reverting to the old way of teaching. This is not by choice but by circumstance. (Participant 6).

This pressure from district leadership is also made evident by Participant 3, who agrees with Participant 6 about how the pressure eventually leads teachers to abandon ICT in the classroom and revert to the traditional way of teaching. This was made clear by Participant 3 when she said:

... the facilitator sends the notes and activities to the learners. In most cases, I prefer to give learners hard copies so that there is proof in their books that the topic was covered. (Participant 3).

In a similar vein to the reality of the experiences of Participant 3, Participant 4 also mentioned how he must sometimes revert to the traditional way of teaching which is influenced by the demands from the subject facilitators. Participant 4 stated:

... it is not always easy [to use ICT] because when we have district visits, they take the learners' books, and if the notes are not there, they say that you have not taught the learners a certain topic (Participant 4).

The three above-mentioned participants alluded to the pressure from district officials. In a similar vein, Participant 5 pointed out that in her class, she is concerned about what the district officials will say. When asked how often she uses ICT in her class, she responded that she uses it two to three times a week. She justified her answer by stating the following:

It is not always; this is because sometimes I want them to do work practically where they must write things down in their books because the government officials, who are the facilitators, always want to see exercises in the learners' books. So, if I always concentrate on the smartboard and the laptop, then it means that the books

will be empty, and I will not have evidence that I have done certain topics (Participant 5).

From the above-mentioned statements from the participants, it can be said that teachers generally want to use technology, but they cannot because of pressure from upper structures. This creates a frustrating and demoralising environment for teachers, who understand the potential benefits of utilising technology in their teaching practices. The participants' statements indicate that pressure from higher structures makes it difficult for teachers to effectively implement technology-driven lessons in the classroom.

In addition, the lack of preparation and training provided to teachers contributes to their unease and uncertainty regarding incorporating technology into their instruction. Consequently, many teachers experience technological stress and struggle to navigate the complexities of educational technology. This was voiced by the participants in the following subtheme.

5.4.2.2 Frequency of ICT integration.

As part of the effort to uncover the perceptions of business studies teachers in secondary schools in South Africa, there is a vital need to assess the frequency of ICT integration. Some participants asserted that ICT has become a part of their routine. When asked how often they use ICT in technologies in their lessons, some of the participants said that some of the ICT gadgets are used daily, while others are used on a weekly basis. Participant 1 revealed this:

I think I use these ICT daily. I use PowerPoint, YouTube, and PDF documents the most. I use other things, such as Class Dojo, on a weekly basis, sometimes twice or thrice a week (Participant 1).

Echoing the sentiment of Participant 1, Participant 5 emphasised the integral role of ICT in her daily teaching practice. Specifically, she highlighted the smartboard as a tool she utilised consistently, stating, "... I use these smartboards daily...". This frequent integration of technology highlights the commitment of both educators to utilise digital resources to enhance their teaching and learning environments.

In a similar vein, Participant 4 also alluded to the fact that ICT has become a routine in his classroom. This was evident when he was also asked about his frequency of using ICT in the classroom when teaching, he responded by asserting that “*there is always technology used in my class*”. However, in his response, he mentioned challenges that may attempt to derail him from using ICT in the classroom, but also mentioned contingency plans to ensure that ICT is always integrated when he is teaching business studies. This was evident when he stated that:

If the smartboard is giving problems or there is load-shedding, I then move to my laptop, and we continue. I allow the learners to use their tablets or phones. It is a daily occurrence in my class. (Participant 4).

Meanwhile, other participants expressed that ICT learning tools are not frequently used because learners need to write down content in their notebooks. Other participants reiterated that they do not frequently use ICT tools because of the availability of hard copies of learning content. They use ICT mostly when a hardcopy is not available, or when the learners need to copy some content.

When asked about the frequency of their integration of ICT tools in the classroom, one of the participants shared the determinants of her frequency of ICT integration as follows:

It is not always the case, because sometimes I want them to do work practically where they must write things down in their books, because the government officials, who are the facilitators, always want to see exercises in the learners' books. (Participant 3).

Participant 3 further explicated this by sharing her views as follows:

Not so often. As I have said, there is the problem of Wi-Fi and sometimes there is loadshedding, and as I have said, the facilitator sends the notes and the activities for learners. Therefore, in most cases, I prefer to give the learners hard copies so that there can be proof in their books that the topic was covered. I provide them

with notes and activities to paste into their books. So, I can say not so often because of loadshedding and the Wi-Fi (Participant 3).

Given the living conditions in South Africa, it comes as no surprise that the issue of loadshedding became a major factor raised by the participants as a reason for not frequently integrating ICT in their lessons. This was perceptible when considering the utterances of Participant 2 when she said:

... my use of ICT is also controlled by the schedule of loadshedding as it is a major problem yhoo, you will want to use technology, but ESKOM will just say no to you. (Participant 2).

The participants' remarks indicate that the basic amenities needed to encourage teachers to integrate ICT into their 21st-century Business Studies lessons are lacking. Four of the participants unanimously agreed and confirmed that an unstable electric power supply because of frequent load shedding and lack of access to Internet connection negatively affected their frequent use of ICT to teach the subject.

5.4.2.3 The commonly used ICT tools.

When entering the classrooms in the sampled schools, one of the first things I noticed was the transformation in township schools. This transformation is a result of the former MEC of Education in Gauteng, Mr Panyaza Lesufi who had a mission of eradicating the paper system when it came to the process of teaching and learning in the classes of Gauteng by introducing a paperless system which would be driven by technology for both the teachers and learners. The focus started with schools in the townships, as they were the ones which were mostly previously disadvantaged. Upon entering the classroom, I appreciated observing that some of the classes were renovated and that the traditional chalkboard was substituted with smartboards.

Smartboards, also known as interactive whiteboards, represent a technologically advanced evolution of the traditional blackboard. They provide teachers with a dynamic and versatile platform to deliver captivating lessons by seamlessly integrating a wide range of multimedia

content such as high-quality videos, interactive presentations, and intuitive digital annotations (Siddiqui, 2024; Thomas & Schmid, 2010). The participants pointed out that smartboards facilitate a more engaging and immersive learning experience by enabling teachers to illustrate complex concepts visually and interactively, catering to the diverse learning styles and preferences of learners in the classroom.

During the interviews with the participants, I noted that they generally had their own preferences regarding the use of ICT tools in their classrooms. When the participants were asked about the technology or technologies they use in their classrooms for teaching and learning, the most featured ICT tool that was mentioned was the smartboard. The smartboard was the most preferred tool for teachers. This was evident when considering the response of Participant 1, who stated that:

I use the smartboard, sometimes I use the data projector, but I prefer the smartboard over the data projector because the smartboard has everything that I need. It depends on the venue I will be using for teaching. However, when I use the smartboard, I mostly rely on PowerPoint presentations and YouTube because they are the most used. Sometimes I use other software to open things like PDF documents, videos, and images, but most of the time I use these two because they allow you to touch on many things all at once (Participant 1).

Participant 2 used different terminology but had a similar preference to Participant 1. This becomes evident when responding to the same question about the commonly used technology or technologies, she responded by stating that “*in [her] school there are interactive whiteboards.*”

She further elucidated her remarks by stating that:

I use that type of technology the most, [and that] there are other devices, but I use the interactive whiteboard whenever I switch to technology (Participant 2).

Participant 3 also used ICT tools similar to those of Participants 1 and 2. Furthermore, she also attests to the utterances made by Participant 2 when responding to the question of the most used

ICT tools who spoke about “other devices”. Participant 3 mentioned “*other devices*”. This is evident when she stated:

I am using eeh! I can say the smart board. Sometimes, learners use their phones if ever they need to research something. ...I only use the smartboard and the laptop (Participant 3).

While other tools such as laptops, cell phones, and tablets were prominent in the responses of the participants, Participant 4 clearly alluded to how he started off without technology but how he is now in the era of technology in the classroom and forever using one or the other form of ICT tools in his content delivery. He further mentioned that the smartboard is still the most used ICT tool when he is teaching. This becomes evident when he states:

When I started, we used to only use textbooks. They then started issuing notes for us to use. It went to the point where I would sometimes borrow the projector in the office when I wanted to display something in class. You see, now things have improved; I can now use my laptop. But now! I now use a smartboard. I prefer it to other technologies. The learners receive tablets, so we also use them in class. Others come with their phones and sometimes use them, but only if I allow them to do so (Participant 4).

Both Participant 4 and Participant 5 utilised a range of technological tools in their classrooms, including laptops, data projectors, and smartboards. Furthermore, Participant 5 allowed her students to incorporate their own devices into the learning environment under her guidance. She stated that “[she uses] the smartboard, sometimes I can use my cell phone because these days the government communicates via emails in most cases”. A follow-up question was then posed to the participant which aimed at eliciting further information about the most used ICT tools. She then further explained:

Jah! The one that they come and operate for me, what is it called again... jah a projector! So that at least I can still move with the content. Sometimes I use a projector, so when I use that one, at least I know I am not stuck. I can be able to

work. With cell phones, also, mind you, our school has its own policies about cell phones, so what I usually do, because I was using these smartboards daily, I would write a letter to inform parents asking them to allow their children to come with phones to school because I am using it. I will also communicate with the entire school staff in my school to inform them that they should not confiscate cell phones because our school policy states that no learner is allowed to bring a cell phone to school. But just because I ask in advance, it was easier for me and for those learners to come with their cell phones, so that if I have something... because what we have again in our school; the government even installed this data this... what is it called... Wi-Fi! Yes, so it was easy for us to operate because Wi-Fi is free for everyone, she said. Jah, those are the tools that I use the most (Participant 5).

While acknowledging his use of ICT tools, Participant 6 emphasised that time constraints often dictate his ability to integrate technology into his teaching. He prioritises the smartboard when time allows, citing its ease of access as a primary advantage. This is evident in his statement.

As I mentioned earlier, sometimes it is not easy to use ICT, especially in our high-pressure working conditions. So sometimes, as I had stated, I must go back to the traditional way of teaching, but when I do teach with ICT, I prefer the smartboard because it is just here and ready to be used. There are not many things to plug or connect in the system. I just open what I want, and we work as a class. Yes, there will be phones or tablets here and there, but the dominant one is the smartboard (Participant 6).

This suggests that while Participant 6 recognised the value of ICT, practical considerations and accessibility played a significant role in shaping his technology integration practices. While the participants have access to a variety of ICT tools which they can incorporate in their process of teaching and learning in their classrooms, including cell phones, tablets, and data projectors, the smartboard emerges as the dominant choice across all the participants. This consistent emphasis on the smartboard across participant testimonies highlights its perceived value as a versatile and engaging teaching tool for teachers. Its interactive capabilities, ease of use, and ability to

seamlessly integrate multimedia content appear to resonate strongly with teachers who seek to create dynamic and learner-centred environments.

Having established the prevalence of various ICT tools within the educational landscape, and particularly the dominance of the smartboard as a preferred choice among the participants, it becomes crucial to probe deeper into the specific ways in which these tools are utilised within the classroom. The next section explores the practical applications of ICT, examining how the teacher participants leverage these technologies to facilitate teaching and learning across diverse pedagogical approaches.

5.4.2.4 How the ICT tools are used in the classroom.

This section shifts my focus from the frequency of how ICT is incorporated in the classroom which raised concerns around infrastructure and limitations, to pedagogical possibilities, exploring the specific ways in which teachers utilise ICT tools for teaching and learning within the context of Business Studies. By understanding the diverse applications of these tools, I gained valuable insights into the creative strategies employed by teachers to overcome challenges and harness the power of technology to enhance student engagement and learning outcomes.

During the interview with Participant 6, when she was asked about how she uses ICT in her classroom, I noted that there was frustration in her voice which was caused by her not being able to always use ICT tools in the classroom. She mentioned how the department officials put pressure on teachers to be at a certain topic by a certain date. She mentioned that whenever the department officials put pressure on her as a teacher, she tells her learners because she understands that this pressure will mean that they need to pick up the pace, and as a result, some of the content will not be explained to the satisfaction of the learners. Furthermore, she mentioned that this pressure meant that ICT usage would have to be suspended in her class and that they must move to the traditional form of teaching. This was evident when she said the following:

... it is not always easy to work with technology and for that I blame the department of education. They mostly put so much pressure on us that you end up leaving this technology and move to the old way of teaching which now takes you back to

papers. I am always honest with my learners; I tell them that the department is putting pressure on us to cover a specific topic in a specific time which means that we must pick up the pace. When we pick up the pace, we then move to the conventional way of teaching, where we use the notes provided to us by the department (Participant 6).

However, in her frustration, as she was expressing herself, she revealed how she used ICT in her classroom when she had the opportunity. She further stated:

... I know that there is no time for videos or pictures that relate to what I must teach. The sad part is that I know that my learners do not like that, but what else can I do? The department will want to punish me and label me as incompetent if I am left behind (Participant 6).

From the above statement, I was able to gather that the most common way in which ICT is used in her class is pictures and videos which are played through the smartboard. In a different but related event, Participant 1 shared how he used ICT in his school. He also mentioned how ICT helps him to virtually bring the classroom to the learners if they are at home as he can give learners the lessons through recordings but also be able to also communicate with the parents. This was evident when he stated that:

When children are at home, I can record a lesson and send it to them. PowerPoint is mostly used when there are pictures; I want to show the learners and mix those pictures with the content of Business Studies. Class Dojo is mainly used for communication with parents; however, we also use it to communicate with learners. YouTube is used to show educational videos. Sometimes, I download videos from YouTube and play them during lessons. I can incorporate these videos through PowerPoint, or I can also just play them using any media player like VLC (Participant 1).

Participant 2's response was a succinct summary, highlighting the key points when she stated:

I utilise the interactive whiteboard; there is an app called VLC which I use to play videos for the learners so that they can get a better understanding of the concept which I am teaching. I also use Microsoft Word and PowerPoint; it all depends on what I am teaching and what I aim to achieve in that lesson (Participant 2).

Building upon the discussion of the practicality of ICT integration, Participant 3 shared her experiences of using interactive whiteboards in the classroom. She stated that:

I can use the smartboard if I want to... eeeh! If ever I want to... ok, I can use the smartboard if ever I want to open activities for the learners in the GDE content. These can be activities or notes. However, in most cases, as I said, I prefer... or I can say my facilitator, as they send the notes or activities. Sometimes they do hard copies for the learners, but if I fail to do copies, I can use the GDE content; it can be notes or activities. For the laptop, I can use the USB stick.... For any additional information, I project it on the smartboard. (Participant 3).

In addition to Participant 3's perspective, Participant 4 highlighted the practical benefits of integrating ICT by detailing how the school receives and utilises digital notes from the Department of Education. He emphasised the cost-effectiveness and sustainability of this approach, stating:

The department sends us notes and activities for each topic. So, mina I save the school money because I do not do copies for the learners, hhay it is just too much. I just shared the notes with them on WhatsApp, in our group chat days or weeks before. I will then direct them to the relevant section in class and we will learn. On other days, I use the smartboard and project from the smartboard the section that I want to teach, and then I explain what they are reading in the notes. On other days, the learners will come to the front to do presentations based on the notes, so I will allow them to use the smartboard, point at the sections, read, and explain to the class. On other days, I just make them watch short videos of things that I would like them to see; for example, if I am teaching about leadership and management,

I can find a video on YouTube and then download it for them to watch in the classroom so that they understand what I am talking about or trying to teach them. They also use their phones to read notes because sometimes the smartboard is not working or is slow. The lesson must continue, so I tell them to access the notes from their tablets because I always make sure that I share everything with them weeks in advance. Ey, you cannot trust technology (Participant 4).

Highlighting the importance of visual and experiential learning, Participant 5 emphasised the effectiveness of using smartboards to enhance learners' understanding. She further explained that time constraints remain a challenging factor; however, she explained that by incorporating this technology into her teaching, she can present information in a more concrete and engaging manner, allowing students to better grasp the practical applications of the concepts being taught. This is illustrated by her statement when she said:

When we were attending, they showed us how to divide the screen into two, and let us say I need to help them understand or teach them about how to write an essay in business studies; I will go to the previous question paper in PDF, and then on the other side I will have a memo so they can see how the essay is supposed to be structured and how the marks will be allocated. If they see all these things practically, then they understand what is expected of them when they answer questions, and they tend to know which mistakes will make them lose marks (Participant 5).

The integration of technology using smartboards, laptops, tablets, and cell phones, in conjunction with readily available tools like Microsoft Office applications, VLC Media Player, and online resources such as YouTube, has demonstrably transformed the educational landscape (Al Sindi et al., (2023). Teachers are no longer confined to traditional textbooks or static presentations. Instead, they can use these tools to create dynamic and engaging learning experiences (Keane, 2002). Microsoft Word facilitates the creation and dissemination of well-structured lesson plans and assignments, whereas PowerPoint allows for visually appealing presentations incorporating multimedia elements. VLC Media Player provides a versatile platform for incorporating audio and

video content, further enriching the learning process (Keane, 2002; Tantowi et al., 2024). Moreover, the ability to seamlessly integrate images, videos, and online resources such as YouTube videos into lessons allows teachers to cater to diverse learning styles and capture students' attention more effectively (Dyanti, 2023; Sithole & Mbukanma, 2024). The use of saved digital content ensures easy access to a wealth of information which fosters a richer and more comprehensive learning environment (Masenya & Ngulube, 2021). By embracing these technological tools, teachers can move beyond the limitations of traditional teaching methods and create dynamic, interactive, and student-centred learning experiences that foster deeper understanding and engagement (Nyathi & Joseph, 2024).

While ICT holds undeniable potential to revolutionise education, its effective implementation depends on a crucial factor: a comprehensive understanding and awareness of existing ICT school policies. The absence of such awareness presents a significant obstacle to the successful integration of technology in educational settings. This gap between ICT integration and awareness of ICT school policies highlights a critical gap between the availability of powerful ICT tools and the knowledge required for their responsible and effective utilisation (Mkhonto & Mubangizi, 2024). The following subtheme interrogates this statement through the contributions of the participants.

5.4.2.5 Lack of awareness of internal and external ICT policies:

In an era defined by rapid technological advancements, the integration of ICT in educational settings has become vital. Teachers and policymakers alike recognise the transformative potential of ICT to enhance teaching and learning experiences, providing access to a wealth of information, fostering collaboration, and personalising education. However, the mere presence of technology within schools does not guarantee its effectiveness for teaching and learning, nor does it guarantee that it will be used responsibly by both teachers and learners. A critical yet often overlooked aspect of successful ICT integration is a comprehensive understanding and awareness of school policies that govern its use.

Lack of awareness of ICT school policies poses a significant obstacle to harnessing the full potential of technology in education. A disconnect arises when teachers, administrators, and even learners are not fully cognisant of the guidelines, regulations, and expectations surrounding ICT

use. This disconnect can manifest in various ways, from unintentional policy violations and inconsistent implementation to missed opportunities for leveraging technology strategically to enhance learning. Ultimately, a lack of awareness of ICT policies can undermine the goals of technology integration seeks to achieve (Mnisi et al., 2024; Mkhonto & Mubangizi, 2024).

Through the interviews, I was able to identify that most of the participants were not fully informed about government and internal policies on the use of ICT in schools in South Africa. Regarding awareness of external policies on ICT integration in schools, Participant 5 stated the following:

No! I have never read it. I do not want to lie; there is just no time for this. I remember the district coordinator asking us who had read the policy, and I was the first one to raise my hand and confess that I had not read it because there was just no time. First, remember that I am a teacher, results are expected from me, and the number of classes I have and the little time I have just do not match. I also have a personal life; I am a wife and a mother. Where will I get the time to sit and read a long document about ICT policy? For me, if I have the basics of how to use the device, then I am sorted. (Participant 5).

When asked whether he had read the Department of Education policy about ICT, Participant 1 honestly responded by first laughing and then saying the following:

No! No, I have never read the Department of Education's policy on ICT. To be honest, I did not even know that such a thing existed. I have never seen that document (Participant 1).

Similarly, Participant 2 stated that she read her school policy. However, she continued to speak about the policy from the Department of Education:

To be honest, I did not even know that the Department of Education had such a policy. These are not even mentioned to us when we do our undergraduate studies, the part where we look at policy studies; we are just not exposed to such policies. I

did not know that there was a policy on ICT. I just know about the basic policies which focus on the day-to-day running of a school (Participant 2).

Voicing similar sentiments, Participant 4 stated the following:

I am unaware of any such policy. We always receive new circulars through our principal, but I do not remember ever receiving anything about ICT. In fact, I do not think that the district officials know about such a policy. This is new to me; I do not want to lie, she said. (Participant 4).

While sharing similar sentiments to Participants 2 and 4, Participant 5 further admitted to knowing that there was a policy from the department of education; however, she explained why she had never read the policy. While recalling an event from the past, Participant 5 stated:

No! I have never read it. I don't want to lie, there is just not time for this. The district coordinator once asked us who had read the policy, and I was the first one to raise my hand and confess that I had not read it because there was just no time. Remember first before anything I am a teacher, results are expected from me, the number of classes I have and the little time I have just don't match. I also have a personal life, I am a wife, I am a mother. Now where will I get the time to sit and read a long document about ICT policy. For me, if I have the basics of how to use the device then I am sorted (Participant 5).

Participant 6 gave a holistic response to the questions on policies when he stated:

I honestly do not think that there is an ICT policy in our school. If there is, then I must admit that I have never read it or seen it. Similarly, one participant stated, I don't know about a policy from the Department of Education that speaks about ICT (Participant 6).

Reinforcing this viewpoint, Participant 3 clarified his position by explaining the following:

I am not sure about the existence of such policies. There are things that I see, but I am not sure if they belong to the school or the department; they are there, but I am not sure. There are charts that speak about what learners should and should not do; I do not know if that is part of the policy or not. As for a physical copy or book on ICT policy, I would honestly be lying; I have never read such a thing (Participant 3).

Although Participants 3 and 6 discussed ICT policies holistically, encompassing both internal and external aspects, Participants 1 and 2 drew a clear distinction between them. While acknowledging that they had not reviewed any ICT policies disseminated by the Department of Education (referring to external policies), Participants 1 and 2 nonetheless articulated the presence of internal policies within their school governing ICT utilisation. When asked about whether their school has an ICT policy and whether they have read it, on the one hand, Participant 1 responded by saying:

No, we do not have a policy on ICT, mainly because I think the school is not where it wants to be in terms of ICT capability (Participant 1).

In contrast, Participant 2 said:

Yes, my school has a policy on ICT, and I briefly read it when I started at the school. It mostly speaks about the dos and don'ts when it comes to the ICT equipment, for example, as teachers, we should not instal any software into these systems. We should also not attempt to perform any repairs, as we may cause more damage. It also speaks about how learners should not be exposed to violent or explicit content in the classroom (Participant 2).

South African public school teachers rely on the National Policy Statement, known as the CAPS document, for guidance on curriculum content and pacing. This document also informs both formal and informal learner assessments (Sepadi & Molapo, 2024). However, the advent of ICT in education necessitates an understanding of how the CAPS document supports teachers in

integrating these technologies into their pedagogical practice. To explore this, participants were asked: "Is the South African CAPS curriculum clear on how technology ought to be integrated into teaching and learning?" Their responses reflect a range of perspectives. For example, Participant 1 responded as follows:

Not really; they only say "use videos" and in some lesson plans, they just give you links to videos that you need to use. They do not explain how you must use that video or what you should say about the video. Therefore, I think it is a bit superficial; the way they are presenting it makes it unattractive. CAPS is not clear on these (Participant 1).

When asked the same question, Participant 2 responded as follows:

I am not sure about that. However, I honestly feel like it should be... it should be clear in the CAPS. It should be clear how teachers need to use technology in teaching and learning, since some schools only use interactive whiteboards. Therefore, I think it should be in CAPS and made clear. But as things stand, personally I feel like it is not clear, I do not know... maybe I am the one who is ignorant or just uninformed (Participant 2).

Participant 3 noted that the CAPS document for business studies is clear regarding content. However, she was unsure about how clear it was when it came to the use of ICT in the classroom when teaching the content. In her response, she stated the following:

Eish hay ee! What can I say! I think it is clear. When it comes to content, everything is clear. The information is there, but only for business studies; I do not know about other subjects, but I think it is clear. It is clear that the content that needs to be taught and when it needs to be taught. However, I am unsure. Content-wise, I know, but with ICT, I would be lying. It does not speak to ICT, according to me (Participant 3).

Similarly, Participant 4 responded clearly by stating:

Hhay let me be honest, I do not know what CAPS says about the use of ICT, to be honest, all I know is that it speaks about resources that can be used when teaching, but in my view, it does not speak about how to use technology. The focus is on what topics to teach and when to teach them; that is all (Participant 4).

While admitting that the government, through the Department of Basic Education, is trying to incorporate ICT through various support programs, Participant 5 asserts that the CAPS document is not doing enough to guide teachers on how to integrate ICT. This is evident when she states:

Ay I think when it comes to this one of CAPS curriculum. Yes, they are trying. The government is trying because for FET, as I have told you, we only...eish I do not know how to explain it. However, in the senior phase, they support them a lot because they come up with programs for coding and robotics which is very much in line with ICT, and time and again, there is a workshop about coding and robotics. I remember attending a workshop at UJ where they taught us how to create animations and make them do all sorts of things which can assist us in teaching. This is how I saw that they were trying to incorporate ICT into this CAPS curriculum. However, in CAPS, especially in the FET phase, it is not clear how technology is supposed to be used. Their focus is more on the content, and how the content should be delivered to the learner using ICT (Participant 5).

When asked the same question, Participant 6 echoed similar sentiments to other participants when he stated the following:

To be honest with you. I do not think that the CAPS curriculum is designed to cater to the integration of ICT. The major focus is on the topics that need to be taught, but there is not much specification about how the technology needs to be used. (Participant 6).

The preceding discussion highlights a critical gap between externally mandated ICT policies and teachers' awareness and understanding of these policies. While some participants demonstrated familiarity with internal school-based policies governing ICT use, there was a clear lack of awareness regarding the broader ICT policies disseminated by the Department of Education. This suggests a potential disconnect between policy development at higher levels and the dissemination and implementation of these policies in individual schools. In addition, all participants unanimously shared the view that the CAPS document was not clear on how ICT should be implemented.

The preceding discussion reveals a significant disconnect between externally mandated ICT policies and their practical implementation in schools. While some teachers demonstrated familiarity with internal, school-level ICT policies, there was a consistent lack of awareness of broader departmental (external) policies. This suggests a potential breakdown in the dissemination and uptake of these policies as they move from development at higher levels to implementation within individual schools. Furthermore, the study found a unified perspective among participants, who consistently expressed that the CAPS document lacks clarity regarding the integration of ICT into pedagogical practice. This lack of clear direction from overarching policy documents may further exacerbate the disconnect between policy aims and classroom reality.

Furthermore, even in cases where teachers expressed awareness of internal ICT policies, their understanding of the specific content and implications appeared tenuous. This suggests that the existence of policies does not necessarily translate into effective implementation or adherence.

5.4.3 THEME 3: The impact of ICT integration on teaching practices in Business Studies.

Table 8: Themes and sub-themes on the impact of ICT integration on teaching practices in Business Studies.

	THEME	SUB-THEME
5.4.3	The impact of ICT integration on teaching practices in Business Studies.	5.4.3.1 ICT integration as a means to enhance engagement and understanding 5.4.3.2 Enhancing efficiency and assessment through ICT integration 5.4.3.3 ICT as a tool for optimising resources. 5.4.3.4 Issues of learner deception and misuse of devices. 5.4.3.5 Professional Development and teacher support. 5.4.3.6 Infrastructural and technical challenges related to ICT integration in the Business studies classroom.

While the previous discussion highlighted a critical gap between established ICT policies and teachers' awareness of these guidelines, the following analysis shifts focus to the tangible effects of ICT integration within Business Studies classrooms. Despite the noted inconsistencies in policy awareness, exploring how teachers utilise technology to enhance their teaching practices and engage learners in meaningful learning experiences is crucial. By examining the practical applications and observed impacts of ICT integration, I gained valuable insights into its potential to transform Business Studies education, regardless of the challenges in policy dissemination and implementation.

This section presents the real-world impact of integrating ICT into Business Studies teaching practices in South African secondary schools. The analysis of the teacher interviews revealed both positive and negative aspects of incorporating technology into the Business Studies curriculum. These first-hand perspectives from teachers directly informed the structure and focus of the subthemes explored in this section.

5.4.3.1 ICT integration as a means to enhance engagement and understanding

The landscape of education is undergoing rapid transformation, with ICT shifting from a novel teaching aid to a cornerstone of effective pedagogy (Kola, 2013). This integration is particularly relevant for subjects such as Business Studies, where real-world applications and dynamic data analysis are essential for developing a nuanced understanding of the subject. By embracing and utilising the power of ICT, teachers can move beyond the limitations of traditional classroom settings, which in turn could create a dynamic learning environment that fosters learner engagement, encourages active participation, and equips learners with the tools necessary to grasp complex business concepts (Martinez et al., 2016; Yelland et al., 2008).

ICT tools offer a wealth of opportunities to move beyond passive learning models and create active learner-centred classrooms. Interactive simulations, multimedia presentations, and collaborative platforms can make abstract business concepts more tangible and relevant to the lives of learners. This, in turn, can ignite curiosity, encourage deeper exploration, and ultimately lead to a more profound understanding of the subject (Ma & Sun, 2022). The participants highlighted several benefits of ICT integration in the classroom. These include shedding light onto how ICT supports struggling learners, captures the attention of learners, promotes active participation in the class, and facilitates understanding. This is evident when considering the participants' responses. For starters, Participant 6 believed that ICT tools assist with the betterment of learner understanding as well as learner participation. This is evident when he said the following:

[The] benefit is that it makes full participation in class possible because the learners love the interaction with the ICT; therefore, they are more focused, and they understand better as the ICT caters for their different learning styles (Participant 6).

In line with what Participant 6 mentioned, Participant 4 attests to this by further explaining that a learner that pays attention in class tends to show better understanding of what is taught. This is displayed in his response when he said,

I can say that another benefit is that you get a more interested audience. These learners get bored of looking at notes all day, but when it is done in different ways, they stay focused and interact with me as the teacher even more because they are interested in what is being taught. The more attention they pay, the more they pass. This is why I favour the use of videos and pictures; you see, those things make it easy for them to even understand things that they have never seen before in their lives. They relate better through seeing in the videos. I also think that this generation prefers to swipe and touch; our generation relied on turning the page and highlighting our notes, and I think it is fun for them to do that digitally. This keeps them interested and engaged. I rarely see learners sleeping in my class when I am teaching (Participant 4).

Similarly, Participant 3 stated,

With technology like the smartboard, we can go the extra mile because we can even manage to use the videos so that the learners can see what we are talking about. The learners pay attention to those types of things, such as the videos and stuff (Participant 3).

Participant 3 above mentions going the extra mile which could be translated to doing more than expected with the aim of assisting the learners. This sentiment is also shared by Participant 2, who also mentioned that:

ICT really helps a lot with concepts that children struggle to grasp because I can use videos to show them practically how that concept works in real life or something needs to be done. For example, I am a Business Studies teacher, and when teaching the topic of production function and my sub-topic is Mass or Bulk Production, I can show learners videos of how mass or bulk production takes place and how the conveyor belt system works. I easily downloaded all these videos from YouTube (Participant 2).

The above discussion shows that using technology in Business Studies classrooms has a positive effect on how learners learn and how engaged they remain. Teachers noticed that they were better able to help struggling learners by using individualised digital resources and adapting their teaching methods. Additionally, interactive tools and multimedia content, such as videos and simulations, were successful in grabbing learners' attention, getting them to participate more in class, and helping them understand difficult business ideas more deeply.

5.4.3.2 Enhancing efficiency and assessment through ICT integration.

While the previous discussion highlighted how ICT integration can significantly enhance learner engagement, comprehension, and support for struggling learners, this section delves into a crucial, yet often overlooked, aspect which focuses on how ICT can be beneficial to both the teacher and learner through time saving as well as improving the assessment process. Beyond fostering a more interactive and engaging learning environment, ICT tools offer Business Studies teachers valuable tools to streamline their teaching practices, save valuable time, and facilitate more effective informal assessments. This shift towards efficiency empowers teachers to dedicate more time to individual learner needs and create a more dynamic and responsive classroom experience (Siddiqui, 2024; Thanyaane & Jita, 2024). Regarding the benefits of ICT in the classroom, the above sentiments were echoed by two of the participants who respectively mentioned how ICT can save time and how ICT makes it easy to assess informal activities in the classroom. On the one hand, Participant 1 stated that for him, “the benefit is that it brings reality into the classroom, and it also helps with saving time”. He further explained this by stating that:

As teachers, we are always under pressure to be on par or ahead of the ATP; therefore, it just makes life much easier for us. (Participant 1).

Participant 6 emphasised the positive impact of ICT on informal classroom assessments, stating the following:

Another thing is that it also makes it super easy for me to assess when we have our informal assessments, such as classwork, group work, and homework. They

perform simple activities such as dragging and dropping, matching images to concepts, and taking quizzes which will instantly provide corrections. All of this can be done using ICT in the classroom, and it can be done as individual or even group activities. It makes life much easier. (Participant 6).

Participant 5 echoed the sentiment of time-saving benefits offered by ICT, particularly during teacher absences. She emphasises that ICT can ensure learners engage with learning materials, preventing wasted time and potential disruptions caused by a teacher's absence. She elaborates on this point by stating the following:

Besides whatever challenges that we are experiencing, but ey... it helps a lot. As I am a departmental head, teachers sometimes tend to be absent from school. When a teacher sends me a message stating that they will not be coming to work, I check their timetable and then, where it was supposed to be a business studies period, I will go to that class and open the smartboard. From there, I will open an activity which they will do during that period. This is how we can maintain order in the class and school. The period will not have been completely wasted; it is unlike when there is no educator and there is no form of learning whatsoever which is taking place (Participant 5).

Maintaining an orderly learning environment is paramount to maximising instructional time. Disruptions within the classroom detract from both the teacher's ability to teach effectively and the learners' ability to learn effectively. When classroom management becomes a significant time consumer, it detracts from valuable instructional time, potentially leading to curriculum gaps as teachers struggle to address content within a limited time frame (Walters 2021). Participant 5 highlighted how ICT can contribute to a more orderly and efficient learning environment, stating:

They are interested in ICT; the class will be disciplined and focused. However, when faced with loadshedding, learners start losing concentration. This forces you, as a teacher, to start monitoring issues of discipline in the classroom. This is difficult for other teachers; I have seen them and had to intervene in some cases.

For me, discipline is not a problem because usually, if a learner is out of line, I keep that learner busy. (Participant 5).

The above discussion reveals two prominent benefits of integrating ICT into educational settings: enhanced engagement and understanding, and improved teaching and assessment efficiency. First, ICT has emerged as a powerful tool for fostering a more engaging and effective learning environment (Anastasopoulou et al., 2024; Paulo et al., 2024). Participants highlighted how ICT tools, particularly interactive whiteboards (smartboards), captivate learners' attention, facilitate the visualisation of complex concepts, and cater to diverse learning styles. This, in turn, contributes to a deeper understanding of the subject matter and a more positive learning experience overall. Second, ICT has proven instrumental in streamlining teaching practices and assessments (Awotunde et al., 2024). Participants emphasised the time-saving benefits of ICT, allowing educators to dedicate more attention to individual student needs. Furthermore, ICT tools facilitate efficient and effective informal assessments by providing immediate feedback and supporting various assessment formats (Awotunde et al., 2024). This shift towards efficiency empowers teachers to create a more dynamic and responsive classroom experience.

5.4.3.3 ICT as a tool for optimising resources.

During the interview process, two of the participants illuminated an often-overlooked benefit of integrating ICT into the classroom which is the potential for significant cost savings at the institutional level. These participants noted that as their reliance on technology increased, their need for traditional paper-based resources, such as printed worksheets or photocopied handouts, decreased. This shift towards digital materials resulted in a measurable reduction in printing and photocopying expenses for the school. This observation underscores how embracing digital tools can translate into tangible economic advantages, allowing schools to allocate resources more efficiently and potentially freeing up funds for other pressing needs of the school. In a brief statement, Participant 6 postulated:

... it makes life a whole lot easier. It just makes my work a whole lot easier because, for starters, it saves a lot of money for the school in terms of costs for photocopying (Participant 6).

Echoing the sentiment of cost-effectiveness, Participant 4 elaborated on how his integration of ICT contributes to resource optimisation within the school environment:

Ok ok ok! As I mentioned earlier, this saves the school money. The benefit is that it limits the number of copies. Printing is expensive, and in business studies, there are many notes, activities, and previous question papers that are needed for the whole year. Therefore, technology makes things easier in that sense. This means that using ICT in the classroom, such as smartboards, cell phones, tablets, and laptops, the school can eventually save thousands of rands in printing costs because it means less printing paper is bought, and it also means less printing toners are bought which can also be very expensive. And when all of this is happening, you see it leads to the school not having to use more money for repairs of the printer because the machine is in good working order because it is running fewer copies. So jah, ICT is a very good thing because even the school benefits from it (Participant 4).

From the data discussion above, the participants revealed a key aspect of the sub-theme by shedding light on the idea of cost savings, particularly in reducing reliance on traditional paper-based resources. This shift towards digital materials, facilitated by increased ICT integration, translates to a tangible reduction in printing and photocopying expenses for schools.

This capacity for resource optimisation through ICT adoption has the potential to be a game changer in the teaching profession. By alleviating the financial burden associated with traditional teaching materials, schools can reallocate funds to address other pressing needs, such as investing in additional teacher training, expanding access to technology for all learners, or enriching extracurricular programs (Syafaruddin, Amiruddin, & Ibbat, 2024; Trichkova-Kashamova, 2021).

Moreover, this shift towards cost-effectiveness can empower teachers to embrace innovative teaching practices without being hampered by budgetary constraints. This newfound freedom to

explore and implement creative pedagogical approaches, fuelled by the efficient use of resources through ICT, can ultimately lead to a more engaging and enriching learning experience for all learners (Anastasopoulou et al., 2024; Paulo et al., 2024).

While the integration of ICT in educational settings presents compelling advantages for both teachers and learners, it is essential to acknowledge that the implementation of technology in the classroom is not without complexity. A balanced examination of ICT integration requires consideration of the potential hurdles and challenges to ensure its successful and sustainable adoption in diverse educational contexts. The following sub-theme discusses some of the challenges which have been identified through the interviews with the participants.

5.4.3.4 Infrastructural and technical challenges related to ICT integration in a Business Studies classroom.

The integration of ICT into education holds huge potential to transform traditional pedagogical approaches and equip learners with the necessary skills. However, the path towards smooth ICT integration is not without its challenges, particularly within the context of developing countries such as South Africa which is grappling with resource constraints and infrastructural limitations (Graham et al., 2024; Kennedy & Cronjé, 2023; Ogenyi, 2023; Sithole & Mbukanma, 2024). This is particularly significant in the Business Studies classroom, where access to current technologies and reliable Internet connectivity is crucial for simulating real-world business environments and preparing learners for the demands of the modern and forever changing workplace.

This section focuses on presenting and discussing the lived experiences of the participants in this study, who are Business Studies teachers. These experiences draw upon valuable insights to shed light on the infrastructural and technical challenges they face in integrating ICT into their teaching practices. By amplifying the voices of the participants who navigate these challenges on the frontlines of education, this study aims to gain a deeper understanding of the difficulties that can delay the successful and sustainable adoption of ICT in the Business Studies classroom.

This discussion explores a range of critical issues raised by the participants of this study, including infrastructural and technical challenges relating to ICT integration, deception by learners coupled with the wrongful use of devices, and the lack of professional development and teacher support.

Turning my attention to the first sub-theme, I explored the infrastructural and technical challenges directly impacting ICT integration in the Business Studies classroom. This exploration delves into the first critical issues raised by the study participants which focus on the lack of sufficient devices as well as devices which are not fixed into the classrooms.

Participant 1 highlighted the significant impact of inadequate ICT infrastructure on instructional time. He expressed frustration over the insufficient number of classes with smartboards. This shortage often necessitates the use of data projectors for classes that do not have smartboards. However, the process of obtaining, setting up, and connecting the projector involves cumbersome administrative procedures, which cut into valuable teaching time and detract from the overall productivity of the lesson. Participant 1's frustration was unmistakable as he stated:

Therefore, the first challenge is that classes without smartboards use projectors. Therefore, the problem starts with projectors not being mounted in classrooms. I have to go down to the office, come back and connect the projector, and at the end of the lesson, move to a different class and repeat the process of connecting the projector. This would be time-consuming and somewhat demotivating, as it is a tedious process. That is the main challenge for me, not having access to these ICT resources (Participant 1).

Participant 1's explanation of the difficulties associated with acquiring and setting up data projectors resonated with other participants. Participants 5 and 6 echoed these concerns, emphasising that even when devices are available, their functionality is not guaranteed. Participant 6 stated:

[The] challenge is when the equipment, such as smart boards, decides not to work. It either does not work or has technical glitches which make it super slow (Participant 6).

The above-quoted words by Participant 6 highlight the practical challenges faced in the classroom. Participant 5 further emphasised this point, stating:

Sometimes, you even have to check which class has a smartboard that is working because sometimes they decide not to work; I do not know whether it is because of the issue of power being on and off. However, these are major setbacks for us when we want to teach. Therefore, if you are a teacher that strictly uses ICT, you will not finish the syllabus. This forces us to go back to the manual way of doing things which means that learners must come with their textbooks, and I too must do the lesson plan manually. All of these are time-consuming (Participant 5).

The utterances of Participant 5 further emphasised the detrimental impact of unreliable technology on teaching and learning. These first-hand accounts highlight the critical need for ongoing maintenance and technical support to ensure that existing ICT resources are readily available and operational.

While both Participant 5 and Participant 6 agreed on the challenges of malfunctioning devices, Participant 5 introduced another layer of complexity, namely, inconsistent power supply. This is evident when she mentioned “*the issue of power being on and off*” This frequent “on-and-off” nature of electricity is a direct attribute of Eskom’s inability to meet fluctuating demands for electricity. This often results in power cuts, a challenge echoed by most participants who emphasised its disruptive impact on ICT-dependent teaching. Participant 5 eloquently captured the generality of this issue, stating the following:

Jah! Ever since we started experiencing loadshedding, we are no longer enjoying. If it is not cabling theft, it is loadshedding. However, we can say with absolute certainty that the issue of having power cuts is a serious problem (Participant 5).

Similarly, Participant 2 agrees with Participant 5 when she states:

Eskom is a problem. These power cuts make it difficult to execute a well-planned lesson. We just need a reliable power supply because it is easy to derail a lesson that relies on technology (Participant 2).

Similarly, Participant 4 also attests to the above sentiments when he states:

... the major issue for technology in South Africa will always be load-shedding. Sometimes I come to class prepared to show the learners a certain video or pictures, but because of load shedding, I end up having to change the plan. Because remember, load shedding or no-load shedding, when district comes here, I will be asked what I have done to manoeuvre around the problem, so lessons end up not being what I had planned because I now need to improvise because of loadshedding (Participant 4).

In a comparable tune, Participant 6 stated:

The first major challenge is load shedding. Sometimes, you are just prepared to teach, and then you are failed by the fact that there is no electricity. It is one of the most frustrating things because it is at that last-minute point where you now must make alternatives (Participant 6).

Echoing the concerns raised by other participants regarding the disruptive impact of power outages, Participant 3 drew a direct link between power cuts and the unavailability of Wi-Fi, further hindering the seamless execution of planned lessons. She highlighted this challenge, stating the following:

Ok! I am not sure if the one that I had already spoken about, the one about loadshedding and the Wi-Fi. These are the major challenges that I think are notable (Participant 3).

Participant 1 also expressed his frustration with Wi-Fi by stating that it hinders learners' epistemological access due to its unavailability:

... the Wi-Fi coverage... Oh My God! We have been fighting this for so long. However, our school does not have high-speed Wi-Fi in the first place. Even if I want to show them something as a class in one class, it will work, but in the other,

it will not work because of the network coverage, so it means I must set time aside to download the videos or whatever that I want to show the learners and have it saved. However, other things are simply not downloadable. For example, if I want to show the learners a video from Study.com, you cannot download a video from that website, so as a teacher, you must change your plan and find different ways to get things done. (Participant 1).

From the above data, it is evident that participants consistently pointed to inadequate and unreliable infrastructure as a major obstacle to their efforts to utilise technology for teaching and learning purposes. These challenges ranged from a lack of basic equipment to persistent malfunctions of existing resources. One prominent concern was the lack of properly installed equipment in the facilities. Participants cited instances where essential ICT tools, such as projectors, were available but rendered unusable because of the absence of proper mounting infrastructure. This lack of anticipation and planning forces teachers to resort to improvised solutions, compromising the quality of instruction and hindering the smooth integration of technology into pedagogical practices. Furthermore, the participants expressed frustration with the frequent malfunctioning of the available devices. Even when equipment was available, its reliability was often questioned, with participants reporting frequent breakdowns and technical difficulties.

Combining these challenges were broader infrastructural issues related to power supply and internet connectivity. Participants lamented the frequent power cuts that disrupted lessons and rendered ICT tools unusable. The unreliable electricity supply, attributed to the failures of the national provider, introduced an unwelcome element of uncertainty in lesson planning and execution. Similarly, inconsistent Wi-Fi access is a significant barrier to ICT integration. Participants highlighted the frustration of preparing technology-dependent lessons only to be met with inadequate or non-existent internet connectivity, hindering access to online resources and interactive learning platforms.

This combination of infrastructural shortcomings and unreliable technology creates an environment conducive to learner deception and misuse of devices (Hlatshwayo, 2022; Kell, Thandar, Bhundoo, Haffeejee, Mbhele, & Ducray, 2024). Frequent disruptions and technical difficulties provide learners with ample opportunities to disengage from the learning process and

utilise devices for personal entertainment or other unauthorised activities. The lack of consistent access, coupled with the unpredictable nature of device functionality, makes it challenging for teachers to effectively monitor and manage learner engagement, creating loopholes for off-task behaviour and hindering the transformative potential of ICT integration in the classroom. The following sub-theme presents the participants' experiences of how learner deception coupled with wrongful use of devices becomes a challenge when incorporating ICT in teaching and learning.

5.4.3.5 Learner deception and wrongful use of devices.

Considering the above discussion with the participants, it is evident that the challenges outlined by the participants highlight a crucial point which relates to the many obstacles that impede ICT integration which, as discussed above, are beyond their control. Systemic issues, ranging from inadequate infrastructure to unreliable technology, create major delays in the teaching and learning process, disproportionately impacting learners (Brown et al., 2008; Hlatwayo, 2022). While these external factors are undeniably impactful, the feedback from participants also revealed a contributing factor which is a result of the behaviour of the learners in the classroom.

Participants, including Participants 3 and 4, expressed concern over how learners' actions or inactions often exacerbate existing challenges, ultimately impeding their own learning experiences. This self-sabotaging behaviour manifests in various ways, including negligence in handling devices, a lack of responsibility towards shared resources, a dismissive attitude towards technology-based learning, and deception towards teachers. This was evident when considering the statements made by Participants 3 and 4, as they both agreed about their experiences.

I can say that when it comes to phones, if they are doing their research, they can use their phones to do that, but sometimes in class, it happens that others pretend to be working or doing their schoolwork, but the learner is busy with Facebook or whatever and pretends as if they are studying. However, it is not only Facebook; there are also many things that they could be doing. Facebook is used as an example. (Participant 3).

The above quotation from Participant 3 eloquently illustrates this point, highlighting the unintended consequences of learner behaviour on their educational journey. Participant 4 agreed with Participant 3 and added in a disheartened voice that:

Another issue is that learners tell you about low batteries because they have been playing music from the morning, and now they cannot use their tablet for a productive thing. Some people will tell you that they lost it or that it is broken. These learners are sometimes ungrateful. We were never lucky enough to have all these privileges. (Participant 4).

Based on the above contributions by the two participants, it is evident that the issues of learner deception and device misuse add a layer of complexity that cannot be ignored. The unfortunate reality is that devices intended to empower learners are overshadowed by distractions and misuse. This highlights the need for a proactive, multifaceted approach that goes beyond simply providing access to technology. Teachers need to prioritise cultivating digital citizenship which focuses on emphasising responsible device use and fostering an understanding of the ethical implications of technology within the learning environment. By addressing both external barriers and internal challenges posed by learner behaviour, schools can create an ecosystem where ICT integration truly serves its intended purpose of enhancing and enriching the learning experience for all learners (Kritzinger, 2014; Kell et al., 2024).

5.4.3.6 Professional Development and teacher support.

While the challenges mentioned above are self-inflicted or intentional, it is necessary to look at challenges that exist in the classroom but may not be necessarily intentional. These challenges also have the potential to hinder the teaching and learning processes.

Both Participant 4 and Participant 5 emphasised that the underutilisation of ICT tools can significantly hinder the effectiveness of a lesson. While teachers often possess innovative pedagogical ideas which incorporate technology, the lack of necessary technical skills can impede their implementation. This inability to effectively operate and utilise available devices presents a significant barrier to realising the full potential of ICT integration. Despite the presence of

innovative pedagogical approaches and a willingness to incorporate technology, the lack of technical proficiency among teachers can ultimately undermine lesson objectives and limit the transformative impact of ICT in classrooms. This is evident when considering what Participant 5 puts forward when she stated:

It is unfortunate that not all teachers are skilled in using ICT. Maybe the other departments can assist in equipping teachers with the necessary skills. We should not attempt to divorce ICT in the classroom; however, we need to look at how we can continue to make it a part of our lives and work. (Participant 5).

... Another challenge is that the ey! Sometimes I try to do something with this smartboard and fail, but I do not worry too much because the learners are always knowledgeable about shortcuts for how to use technology effectively. Not knowing how to use certain apps is a challenge, but the learners are always there to assist (Participant 4).

While learning how to use ICT tools in the classroom is a good thing, it may sometimes have unintended consequences which can be a disruption to even neighbouring classes. Participant 2 argued that teachers who lack technological proficiency may involuntarily disrupt not only their own classrooms but also neighbouring classes. When teachers struggle to operate ICT tools or troubleshoot technical issues during lessons, it can create distractions and divert learners' attention, impacting the flow of learning for all parties involved. Participant 2 emotionally illustrated this point with her statement when she says:

Sometimes the videos I play can be a bit loud which means that other classes get distracted and the other way around. When other teachers play videos in their classes, it distracts the learners in my class. I see this when I am teaching, so I can imagine that this is what happens when I am doing it. However, this rarely happens with me because I know how to use ICT tools. However, for other teachers who struggle to use ICT, this is a usual occurrence. I think they are not doing it

intentionally, but sometimes someone needs to go into their class and assist them just to get it to the right volume which does not disrupt neighbours (Participant 2).

Her experience highlights the need for comprehensive ICT training that not only equips teachers with the necessary skills but also emphasises strategies for seamless classroom integration and troubleshooting. Providing adequate support and resources for teachers during this learning process is essential to minimise disruptions and ensure that technology enriches, rather than hinders, the overall learning environment (Ahmad et al., 2023; Theodorio, 2024; Wang et al., 2024).

5.5 CHAPTER SUMMARY

This chapter presents a thematic analysis of the qualitative data generated through in-depth interviews with the participants. Employing a coding process, key themes and subthemes were identified, providing a structured framework for understanding the multifaceted nature of participants' experiences and perspectives. This approach moved beyond data description, offering a detailed and insightful interpretation of the complex issues being investigated. By organising the findings around these significant themes and subthemes, this chapter illuminates the interconnectedness of participant narratives and facilitates a deeper comprehension of the phenomenon of ICT integration. Chapter 6 reflects on the data presented in Chapter 5 through the use of literature which has been reviewed as well as the theoretical framework. This will be done through the use of themes and sub-themes to establish findings and present recommendations.

CHAPTER 6

FINDINGS AND RECOMMENDATIONS

6.1 INTRODUCTION

The previous chapter presented the data gathered from the participants. The data were structured using themes and sub-themes to highlight valuable insights aligned with the research questions and objectives. Maintaining the established themes and subthemes, this chapter intertwines the generated data with insights from the literature review (see Chapter 2) and the theoretical framework (see Chapter 3). Each finding, presented under its respective sub-theme, will be followed by a recommendation, ensuring that the study offers practical solutions for the finding. This section reflects on the data collected by drawing connections between the findings, the relevant literature, and the theoretical framework of the study.

By analysing the data in the context of existing theories and research, I aim to deepen the understanding of the themes and sub-themes that emerged and provide a comprehensive interpretation of how they align with or challenge the existing body of knowledge. This reflection also demonstrates how the theoretical framework guided the analysis and interpretation of the data throughout the research. As a result, I will separate findings as emulated by empirical research and theoretical framework.

6.2 FINDINGS EMULATED BY THE LITERATURE REVIEW AND EMPIRICAL RESEARCH COVERED BY THIS STUDY.

6.2.1 The significant role of teachers in promoting ICT integration in schools

Finding 1

The literature reviewed in this study found that teachers typically demonstrate a character that is receptive and conducive to the integration of ICT within their classrooms as a mechanism to support and enhance their pedagogical approaches (Alzaidiyeen et al., 2010; Mirzajani et al.,

2016). A significant number of teachers exhibit an optimistic perspective on the integration of ICT into their teaching practices, acknowledging its possible advantages while simultaneously dealing with barriers that demand continuous professional growth and instructional change (Indah & Pupung, 2024). Furthermore, teachers regard ICT as essential for rendering the teaching-learning experience more engaging, enjoyable, effective, and efficient, thereby exerting a substantial impact on educational achievement through the enhancement of methodologies and techniques (Kabita & Helmina, 2024).

Confirmation of Finding 1

The findings from the literature correspond with those from the empirical research. From the empirical research, it is evident that the participants view ICT tools as a progressive approach to improving the teaching and learning process. The participants were unanimously receptive to having ICT in their classrooms as they all mentioned that it is a good thing to have in the class. Furthermore, some participants elaborated further by stating that ICT “makes life easy in the classroom” (Participant 4) and that ICT “should be standard for each class. It is something that can elevate the level of classroom participation and understanding of learners” (Participant 2).

Finding 2

This study also found that, beyond the contributions of individual teachers, institutions dedicated to the training of teachers assume a pivotal role in promoting the integration of ICT within the educational setting (Umar et al., 2024). These institutions are essential in preparing prospective teachers with the necessary skills and instructional methodologies to effectively apply and utilise ICT within their classrooms (Sagufta, 2018).

Confirmation of Finding 2

The empirical research in this study found that training institutions play a pivotal role in exposing pre-service teachers to ICT. For most of the participants (Participant 2, Participant 3, Participant 4, and Participant 6), their exposure to ICT was at the training institutions where ICT tools were

only used for communication with lecturers, as well as for researching, typing, and the submission of assignments. The findings suggest that these training institutions have a huge role to play in ensuring that pre-service teachers enter the professional space as qualified teachers with the necessary skills to utilise and integrate ICT in their teaching.

Finding 3

It was found that the ongoing provision of comprehensive training sessions, coupled with the implementation of anticipatory support mechanisms for teachers, is of paramount importance in ensuring the successful integration of ICT within their pedagogical practices, as this not only augments their technical competencies but also significantly contributes to the enhancement of overall learning outcomes for their learners (Theodorio, 2024; Haji et al., 2023; Krishna, 2023).

Finding 4

The literature reviewed in this study also found that creating a conducive policy environment is crucial for ensuring equitable access to ICT, developing digital skills, and facilitating necessary curricular adaptations, ultimately supporting effective adoption in schools (Pezo, 2024). However, the findings also display a gap between policy and practice in relation to policy expectations for ICT integration and the readiness of teachers to meet those ICT-related policy expansions (Howie, 2010; Kafu-Quvane & Chikoko, 2019; Van Der Ross & Tsibolane, 2017).

Confirmation of Finding 3 and Finding 4

The empirical research also sheds light on the need for training for in-service teachers, as they may need empowerment programs that will also allow them to effectively utilise ICT in the classroom. This becomes evident when looking at the contributions of Participants 1 and 5, who state that their experience with ICT was mainly while they were in-service teachers. They also mentioned that they had basic computer skills due to their exposure to ICT at university; however, they expressed how the training institutions do not necessarily equip teachers for the reality that awaits them once they are qualified teachers who will be expected to utilise smartboards while they have

never been previously exposed to them. This gap therefore poses a challenge to the training institutions as well as the Department of Education because the participants pointed out that there is a need to be trained so that they remain relevant in the forever-changing ICT world. While the participants are of the view that the Department of Basic Education is responsible for training and ensuring that the in-service teachers are continuously trained to remain relevant in the forever changing space of ICT, they also unanimously believe that the Department of Education is responsible for making policies that can make the integration of ICT possible and equal to everyone in all schools. The participants were of the view that policy should not only be good on paper but should translate to equitable execution which will favour both teachers and learners.

The findings on the significant role of teachers in promoting ICT integration in schools were emulated by the theoretical framework covered in this study.

The findings related to teachers' promotion of ICT integration suggest that most teachers remain at the substitution or augmentation levels of the SAMR model, using technology primarily to enhance existing tasks rather than to fundamentally redesign or redefine their pedagogical approaches (Erica, Hamilton, Joshua, Rosenberg, Mete, Akcaoglu, 2016). The limited exposure during pre-service training and the need for ongoing professional development prevent their progression to higher levels of the SAMR model, such as modification and redefinition (Arantes, 2022).

6.2.2 Teachers' experiences and perceptions of integrating ICT tools into their daily teaching practices.

Finding 5

There is a sense of reluctance by teachers to abandon traditional ways of teaching (which include the lecture approach, reading of notes and highlighting the concepts from hard copy print outs) because of the pressure which comes from upper structures in the form of subject advisors, or district officials as they are most commonly known as in schools (Abedi et al., 2024; Boonmoh & Sanmuang, 2024; Kosiorek, 2023).

Confirmation of Finding 5

The empirical research shows a commonality in the participants' responses regarding their reluctance to abandon the traditional ways of teaching Business Studies for ICT-inclusive methodologies. Participants 3, 4, 5, and 6 all cited the pressure that comes from district officials which forces them to resort to traditional ways of teaching. Furthermore, they also express how the district officials do not acknowledge the evolution in education which caters for the use of ICT when teaching Business Studies. This was evident when Participant 4 expressed that "...when we have district visits, they take the books of the learners and if the notes are not there, they say that you have not taught the learners a certain topic." This further highlights the existing gap between ICT implementation and policy development that speaks to the integration of ICT when teaching business studies.

Finding 6

The frequency of integrating ICT into teaching is also limited because of the pressure imposed on them by district officials (Abedi et al., 2024). In addition, it was found that rolling blackouts, known as load shedding, severely influenced the limited use of ICT tools in South African schools (Bawinile & Mthanti, 2023; Mbaleki, Elegbeleye, Esan, & Rabotapi, 2023; Moetlhoa, 2023).

Confirmation of Finding 6

The empirical research in this study shows a common frustrating factor displayed unanimously by the participants which relates to the issue of power cuts as a major cause for teachers to abandon the use of ICT in their classes. One of the participants expressed this frustration by stating that "... my use of ICT is also controlled by the schedule of loadshedding... you will want to use technology, but ESKOM will just say no to you" (Participant 2).

Finding 7

When ICT tools are utilised, teachers mostly use various ICT tools such as smartboards, laptops, data projectors, and mobile phones to enhance classroom instruction and learner engagement (Siddiqui, 2024). Furthermore, it was found that these devices are paired with software,

applications, and modes such as videos, pictures, PowerPoint slides, and word documents to conduct lessons (Rakhimzhanova, 2023).

Confirmation of Finding 7

In the empirical research of this study, it was found that the most commonly used ICT tool was the smartboard. Participants unanimously reported the use of Smartboards as their schools were all fitted with these devices in the classes as an initiative by the Gauteng Department of Education which sought to have paperless classrooms. However, other participants also mentioned that they used other ICT devices, including data projectors, laptops, cell-phones, and tablets. Furthermore, it was found that these ICT devices are used with certain computer applications which include Microsoft PowerPoint, VLC media player, PDF readers, and Microsoft Word.

Finding 8

Teachers are not aware of ICT-related policies which guide and control how ICT ought to be used because of the lack of standardisation of ICT integration through policy implementation (Halabi & Hill, 2024). Furthermore, teachers lack knowledge and awareness of ICT policies in schools (Mfaume, 2019; Mkhonto & Mubangizi, 2024).

Confirmation of Finding 8

The empirical research in this study shows that teachers are mostly unaware of internal and external ICT policies which are meant to standardise the implementation of ICT in the classroom (Participant 1, Participant 3, Participant 4, Participant 5, Participant 6). Participant 2 confirmed that there is an ICT policy in the school; however, the policy does not seek to standardise the implementation of ICT. It only aims to protect the infrastructure and integrity of the school by stating the dos and don'ts of using ICT in the school. Furthermore, Participant 2 confirmed that she did not know the contents of the ICT policy which came from the Department of Education (external policy).

Findings on teachers' experiences and perceptions of integrating ICT tools into their daily teaching practices emulated by theoretical framework covered in this study

The current methods employed by teachers to integrate ICT into Business Studies classrooms primarily align with the substitution and augmentation levels of the SAMR model. Teachers utilise a variety of tools to enhance content delivery, but systemic pressures such as curriculum demands and a lack of policy awareness hinder them from progressing to the modification and redefinition levels, where ICT could lead to a transformative teaching experience (Abedi et al., 2024; Kafu-Quvane & Chikoko, 2019; Kennedy & Cronjé, 2023).

6.2.3 The impact of ICT integration on teaching practices in Business Studies.

Finding 9

The findings suggest that ICT operates as an instrumental mechanism that enhances the ability to cultivate a sense of discipline and sustained focus among learners throughout the duration of their lessons, while simultaneously promoting a heightened level of engagement and facilitating a deeper understanding of the subject matter being presented during these educational sessions (Adhikari, 2021; Ames, 2023; Lestari, 2022; Valente et al., 2018).

Confirmation of Finding 9

The above finding from the literature corresponds with the finding from the empirical study which found that when ICT is implemented in an orderly manner in a lesson, it can serve as a mechanism that instils discipline in the learners. This became evident when Participant 5 stated that “[the learners] are interested in ICT; the class will be disciplined.” Furthermore, it was found that ICT serves as a mechanism that fosters effective learning as learners are always engaged, even when the teacher may be absent. Participant 5 posited that ICT can be used to effectively use contact time with the learners even when the teacher is not present, and the allocated contact time does not completely go to waste.

Finding 10

The theoretical framework also revealed that digital tools and resources present avenues for personalised learning experiences that are specifically designed to accommodate the distinct requirements and learning styles of individual learners, leading to improved learning (Alfiana, 2021; Niswatin & Zainiyati, 2021).

Confirmation of Finding 10

While ICT contributes to effective learning, the empirical research of this study also shows how ICT integration accommodates different learning styles for different learners. This is attested to by Participant 6, who stated that learners “get to understand better as the ICT caters for their different learning styles”.

Finding 11

It was also found that interactive learning platforms and educational software can provide immediate feedback and assessment, enabling teachers to track learners’ progress more effectively and intervene when necessary to address areas of difficulty (Ames, 2023; Dahnoun, 2023; Drugova et al., 2021; Totaj, 2023).

Confirmation of Finding 11

The empirical research found that ICT makes the life of a teacher much easier because of its hardware and software features, and it was also found that these ICT tools make the process of informal assessments easier to administer in class as well as to give feedback to learners about their performance and areas of improvement. This was evident from the unanimous feedback from all participants who reported that ICT made life easier in class. Further elaboration of how ICT tools make the process of teaching easier is the benefit highlighted by Participant 6 who stated that “... it also makes it super easy for me to assess when we have our informal assessments such as classwork, group work, as well as homework”.

Finding 12

Theodorio (2024) found that there is a potential deviation of lessons from their intended focus due to technical issues or teachers' unfamiliarity with ICT tools. This finding is further supported by Hidson (2018), who attests that this can lead to teachers encountering difficulties in smoothly integrating technology into their lesson plans, leading to disruptions in the flow of the lesson.

Confirmation of Finding 12

From the empirical research of this study, it was found that lessons are most likely to deviate or not go as planned because of unforeseen malfunctions or technical glitches that may occur before or during the lesson. Participants 5 and 6 expressed how smartboards are not reliable as they sometimes decide not to work even when there is power in the school. In some instances, the smartboards get glitches which deviate the lesson, cause disruptions in class, and lead to loss of focus to the learners. Additionally, it was found that disruptions also occur due to teachers who are unable to utilise ICT tools. Participants 2 and 5 both highlighted that there are teachers who are unable to effectively utilise ICT tools, and this unfamiliarity or lack of ICT skills with ICT tools leaves a gap for disruptions in the classroom and, consequently, the neighbouring classes as well.

Finding 13

Another finding from this study is that learners misuse digital devices or online resources for non-educational purposes, such as browsing social media or playing games, thereby detracting from their engagement with lesson content (Vahedi and Zannella, 2021).

Confirmation of Finding 13

The empirical research in this study found that a common challenge faced with the integration of ICT in the classroom is the issue of learner deception. Participants reported on issues of learners who pretend to be working during the lesson but are actually engaging in other unproductive

activities such as browsing the internet for non-educational content or being on social media chatting with friends which deviates them from learning (Participant 3 and Participant 4).

Finding 14

It was also found in the literature that there is insufficient provision of continuous training programs for teachers to enhance their ICT skills and pedagogical strategies (Ajani & Govender, 2023; SasereI & Makhasane, 2023). The literature found that teachers are not exposed to enough training programs that aim to update and improve their ICT skills which will enable them to effectively integrate ICT when teaching Business Studies.

Confirmation of Finding 14

Empirical research has found that teachers need access to continuous development programs. Participants emphasised that this is because ICT is a space which has new inventions and developments regularly; therefore, teachers need to be refreshed on the knowledge that they currently possess and trained on new skills that they may need to successfully integrate ICT into the classroom (Participants 2 and 4).

Finding 15

Infrastructure-related issues, such as power outages and the unreliability of ICT devices, were found to pose significant barriers to ICT integration in South African schools. (Sabiri 2020; Chima et al. 2024).

Confirmation of Finding 15

From the empirical research covered in this study, it was also found that there is a challenge of power outages which hinders the progress of ICT integration. Participants unanimously agreed that the major challenge when integrating ICT is the issue of scheduled blackouts, which leave teachers looking for alternatives to teaching. This issue is coupled with other infrastructural challenges, such as the shortage or unavailability of devices for crowded classes coupled with

connection issues. These challenges leave teachers with the need to use their own private resources, such as downloading videos and other educational content, as they know that the school infrastructure, such as WI-FI, will not allow them to download the content they need to execute the lesson (Participants 1 and 3).

Findings on the impact of ICT integration on teaching practices in Business Studies emulated by theoretical framework covered in this study

Finding 16

The experiences of teachers in Johannesburg Central District Schools reveal that while ICT has introduced significant improvements in Business Studies classrooms, challenges such as infrastructural limitations and a lack of training hinder full integration (Graham, Kruger, & van Ryneveld, 2024; Munje & Jita, 2020). It was found that teachers are currently utilising ICT tools mostly at the substitution and augmentation levels, with some reaching the modification level by redesigning lessons to improve engagement and understanding (Choi & Lam, 2018; Mangwegape & Paseka, 2023). However, to fully realise the redefinition level and unlock the transformative potential of ICT, issues of learner deception and systemic issues need to be addressed, particularly in terms of infrastructure and professional development (Kheswa & Dlamini, 2024).

6.3 FINDINGS NOT EMULATED BY THE LITERATURE REVIEW AND THEORETICAL FRAMEWORK COVERED IN THIS STUDY.

Finding 17

Long-term use of ICT tools in schools can lead to significant cost savings and enhanced operational efficiency. ICT tools, such as computers, tablets, and software applications, facilitate a more interactive and engaging learning environment, which can reduce the need for physical resources like textbooks and printed materials, thereby saving costs for schools (Siddiqui, 2024; Singh, Sharma, & Gupta, 2024).

Confirmation of finding 17

The empirical research covered in this study reflects the opinion of some participants that they are saving the school a significant amount of money by utilising ICT in their classrooms, thus cutting on printing and copying costs for the school (Participants 4 and 6).

6.4 RECOMMENDATIONS

6.4.1 Recommendations to the significant role of teachers in promoting ICT integration in schools

Recommendation 1

Both the literature and empirical findings in this study point to the fact that teachers accept and appreciate the idea of having ICT incorporated into their classrooms. Therefore, to capitalise on this positive disposition towards ICT integration, it is recommended that targeted professional development programs be implemented. These programs should focus on equipping teachers with practical skills and pedagogical strategies to effectively incorporate ICT into their teaching practices. When analysing this recommendation through the lens of the theoretical framework of this study, which is the SAMR model, it becomes clear that this process of equipping teachers with practical skills and pedagogical strategies moves beyond the basic technical skills, but delves deeper into the teachers' innovative lesson design, the learner-centred approach, as well as improved assessment methods through the use of ICT. This signifies the *modification* level of the SAMR model, where teachers are not just substituting traditional methods with technology or augmenting existing practices; rather, they are modifying and redesigning learning activities to fully utilise the potential of technology, thereby creating new learning opportunities which were not previously possible or explored in the South African educational context. (Choi & Lam, 2018; Zhai et al., 2018).

Recommendation 2

Finding 2 suggests that teacher training institutions play a critical role in advancing ICT integration in schools. Therefore, to maximise the impact of teacher training institutions, South Africa's

Department of Higher Education and Training should mandate ICT integration in all teacher training programmes. This should involve developing a standardised curriculum framework that equips aspiring teachers with the technical proficiency and pedagogical understanding needed to confidently and creatively utilise ICT in their future classrooms. This recommendation falls within the redefinition level of the SAMR model. It is not about substituting traditional teaching methods with technology, enhancing existing practices, or modifying lessons to include technology. This recommendation is aimed at transforming teacher training by making ICT integration a core component, thereby redefining how future teachers are prepared for the classroom (Handina et al., 2020; Rachman et al., 2022). This initiative should be coupled with ongoing support and resources for teacher-training institutions to effectively implement this new standard. Furthermore, the government can play an active role by undergoing the process of policy review on Minimum Requirements for Teacher Education Qualification (MRTEQ). This may standardise the standard which will ensure that all teachers have basic knowledge which will assist them as in-service teachers to implement ICT effectively.

Recommendation 3

The literature and empirical data in this study led to finding 3 which suggests that the Department of Basic Education's focus on creating a conducive policy environment is essential for guiding schools in adopting ICT effectively. Furthermore, Finding 3 suggests that there is a need for ongoing teacher support from the Department of Education to ensure that in-service teachers are not left behind in the advancements of technology in the classroom. To ensure sustained and impactful ICT integration, it is therefore recommended that the Department of Basic Education establishes a dedicated ICT support unit. This unit would provide ongoing assistance to schools and teachers, offering technical support, pedagogical guidance, and access to relevant resources. This dedicated support structure would be instrumental in addressing the practical challenges of ICT implementation and ensuring that both schools and teachers are well equipped to embrace technology in a way that benefits teaching and learning in South Africa. When analysing this recommendation through the lens of the SAMR model, the recommendation signifies the augmentation level. This is because the unit being recommended for establishment does not seek to replace existing structures but bolsters them with specialised ICT expertise and resources. This

added layer of support empowers teachers to integrate technology more effectively, moving beyond mere substitution to more innovative applications of ICT in the classroom, which in turn may result in a more productive teaching and learning environment (Ames, 2023; Lestari, 2022).

Recommendation 4

Finding 4 suggests that there are gaps between policy and practice in relation to policy expectations for ICT integration and the readiness of teachers to meet those ICT-related policy expansions. This finding suggests that the collaboration between DBE and universities needs to be upgraded to produce teachers who are ready to implement ICT and navigate challenges related to ICT integration. To bridge the gap between policy and practice, it is recommended that a collaborative task force be established, comprising representatives from the Department of Basic Education, teacher training institutions, and experienced teachers in the field of ICT integration. This taskforce would be responsible for developing a comprehensive framework for pre-service and in-service teacher training that aligns with the latest ICT policies and addresses the practical realities of integrating technology into South African classrooms. This collaborative approach would ensure that teachers are well prepared to meet the evolving demands of ICT integration and effectively utilise technology to enhance teaching and learning. In the lens of the theoretical framework utilised in this study, this falls under the Redefinition level of the SAMR model, as it signifies a systemic change and not merely substituting, augmenting, or modifying existing practices. It mainly focuses on fundamentally rethinking and redesigning how teachers are prepared for ICT integration (Handina et al., 2020; Rachman et al., 2022). Creating a taskforce with representatives from the DBE, teacher training institutions, and experienced teachers demonstrates a commitment to a comprehensive and collaborative approach aimed at addressing the gap between policy and practice.

6.4.2 Recommendations for teachers' experiences and perceptions of integrating ICT tools into their daily teaching practices.

Recommendation to finding 5 and 8

The findings suggest that teachers hesitate to fully integrate ICT due to pressure from authorities and a lack of clarity. This finding links with Finding 8, which suggests that the lack of standardised ICT integration policies leaves teachers unaware of guidelines and controls for using technology in the classroom. To address these intertwined challenges, the Department of Basic Education should adopt a multi-faceted approach which:

- First, **develop and disseminate a comprehensive ICT Integration Framework which focuses on** creating a clear and holistic definition of ICT integration, outlining its practical implications for teachers, and distinguishing it from other teaching methods which exclude ICT. Using the SAMR model as a lens to interpret and implement this recommendation, it is evident that this recommendation falls within the substitution level. The creation of a comprehensive ICT Integration Framework could initially be seen as a substitution level. It replaces previous and less defined understandings of ICT integration with a clear, holistic definition (Reedy et al., 2020). This framework should be widely disseminated to all stakeholders, including district officials, subject advisors, and teachers through accessible channels, such as online platforms, workshops, and policy documents. This will ensure a shared understanding and vision of ICT integration across the educational hierarchy.
- Second, the DBE should **establish and implement clear and standardised ICT Integration Policies**. This recommendation is within the Augmentation level of the SAMR model because it improves the existing teaching environment (Lyddon 2019). These policies provide structure and guidance which in turn enhances teachers' ability to effectively utilise technology by setting clear expectations and best practices. These policies should outline the guidelines, controls, and best practices for using technology in the classroom. Dissemination should occur through the same accessible channels used for the ICT integration framework.
- Finally, the DBE should **integrate mandatory ICT policy and practice training into professional development**. This should include mandatory training on both ICT integration policies and their practical application. This training should cover not only the guidelines and implementation strategies but also provide hands-on experience with various ICT tools and pedagogical approaches. This combined approach equips teachers

with the knowledge, skills, and confidence to effectively integrate ICT into their teaching practices. This recommendation is within the modification level of the SAMR model. This empowers teachers to redesign and modify their teaching practices while using technology to create new learning experiences which were previously not possible with traditional methods of teaching, such as the lecture approach (Choi & Lam, 2018; Zhai et al., 2018). Furthermore, showcasing successful ICT integration models, fostering mentorship, and recognising innovation within these programs will cultivate a supportive environment that encourages teachers to embrace technology.

Recommendation 6

Finding 6 suggests that district official pressure and frequent blackouts limit ICT integration in schools. While there is a collaborative professional development program that is recommended above that aims at addressing the pressure that comes with the top-down approach from the Department of Education, it is also recommended that, in order for teachers to address the pressure that they face regarding how frequently they integrate ICT during rolling blackouts, the schools should be empowered with reliable backup power solutions, such as solar panels or portable power stations that will prioritise computer labs and other ICT facilities for teaching and learning. This aligns with the modification level of the SAMR model, as it significantly changes how technology can be utilised in the classroom, enabling more consistent and reliable use. It moves beyond simply augmenting traditional teaching methods and opens up possibilities for redesigned learning experiences (Choi & Lam, 2018; Zhai et al., 2018). While this would be the ideal solution, it is worth mentioning that the successful implementation of independent power stations would be one that has financial limitations and inefficiencies which have become the norm in government sectors (Hottenrott, (2022)). This situation impacts the provision of quality education in South Africa and may result in a further technology divide between South Africa and the rest of the world for years to come.

Recommendation 7

Finding 7 suggests that teachers primarily utilise ICT tools such as smartboards, laptops, projectors, and mobile phones, paired with software and applications that include multimedia players for videos and pictures, PowerPoint, and Word documents, to enhance teaching and engagement. To maximise the impact of existing ICT tools used by teachers in classrooms, it is recommended that the Department of Basic Education and teacher training institutions implement professional development programmes that guide teachers on transitioning from passive content delivery to active learning experiences. This includes training on project-based learning, where learners utilise ICT tools for research and collaboration, implement flipped classroom models with engaging video lessons and interactive activities, and introduce educational games and simulations that utilise technology for immersive learning experiences. These teaching methodologies fit well in the SAMR model as they cover the Modification and Redefinition levels. To be more specific, teaching styles such as the project-based learning where learners utilise ICT for research and collaboration falls within the Modification level as this modifies the traditional learning task in a way that it allows for deeper engagement with the content and develops 21st century skills (Choi & Lam, 2018; Zhai et al., 2018). This is similar to other styles, such as flipped classrooms, the use of engaging video lessons, and interactive activities which also modify the traditional lecture style and provide opportunities for a more personalised learning approach (Choi & Lam, 2018; Zhai et al., 2018). The utilisation of educational games and simulations aligns with the Redefinition level of the SAMR model, as these approaches can redefine how learning takes place. The redefinition level comes into existence when considering that these experiences are often impossible without the use of technology, which creates an entirely new opportunity for exploration and engagement for the learner (Handina et al., 2020; Paulauskaitė-Tarasevičienė et al., 2022; Rachman et al., 2022).

Such an approach can be implemented in conjunction with Recommendation 2 which proposes that the Department of Higher Education and Training should mandate ICT integration within all teacher training programmes. This approach will ensure that ICT tools are used to foster learner-centred learning environments and maximise their educational impact.

6.4.3 The impact of ICT integration on teaching practices in Business Studies.

Recommendation 9

Finding 9 suggests that ICT serves as a tool that can assist in facilitating discipline and focus for learners during lessons and fosters engagement and understanding. To maximise the impact of existing ICT tools on learner discipline, focus, and engagement in Business Studies classrooms, it is recommended that the Department of Basic Education curate and share a publicly accessible online repository of interactive, curriculum-aligned Business Studies resources specifically designed for smartboards. The creation of a publicly accessible online repository of interactive, curriculum-aligned Business Studies resources specifically designed for smartboards falls under the **Substitution level of the SAMR model**. This is due to the fact that it replaces traditional teaching materials with digital versions that offer the potential for increased interactivity and engagement. While smartboards offer interactive capabilities, simply using them to display digital resources does not fundamentally change the learning task (Reedy et al., 2020).

This repository would include interactive simulations, data visualisation tools, case study platforms, and other engaging resources that teachers can readily incorporate into their lessons, making effective use of existing technology to create a more stimulating and focused learning environment. To enhance the effectiveness of this initiative, teachers should play an active role. This could start with them being encouraged to do the following:

- **First, they should** actively explore and experiment with the resources in the proposed repository and adapt them to their specific classroom needs and teaching styles. This will promote ownership and the integration of resources into pedagogical practices.
- Second, teachers can share their experiences and best practices using these resources with colleagues, fostering a community of practice and collaborative learning around ICT integration. According to As (2017), this newly established peer-to-peer support system can be invaluable in driving the wider adoption and effective use of technology in the classroom.

- Lastly, teachers could embrace ongoing professional development in ICT integration by seeking opportunities to enhance their skills and knowledge of using technology effectively for teaching and learning. Hennessy, Harrison, & Wamakote (2010) posits that a continuous improvement mindset of this nature is important for staying up-to-date about advancements in educational technology and maximising its potential in the classroom. It is also worth mentioning that teachers must take ownership of their professional development and actively look for opportunities to improve their practice.

The recommendations also encourage teachers to actively explore, adapt, and share these resources. This element of professional development and collaboration, along with the focus on interactive simulations and data visualisation tools, starts to move towards the **Augmentation level of the SAMR model**. These activities enhance traditional teaching methods, providing opportunities for a deeper understanding and more engaging learning experiences (Ames, 2023; Lestari, 2022; Lyddon, 2019).

By combining a top-down approach (the DBE repository) with bottom-up engagement (individual teacher initiatives), this recommendation aims to create a more dynamic and impactful integration of ICT in Business Studies classrooms. According to Ramorola (2013), this approach recognises that while providing resources for teachers is important, it is equally important for teachers to promote a culture of innovation and continuous improvement among themselves. This is particularly relevant in the South African context, where teachers often face numerous challenges and have limited resources. Empowering teachers to take ownership of their professional development and embrace technology is a powerful catalyst for positive change in the classroom.

Recommendation 10

The literature and empirical research in this study suggest that digital tools and resources offer opportunities for personalised learning experiences that are tailored to individual learner needs and learning styles. To support the implementation of personalised learning experiences in Business Studies, the Department of Basic Education should develop and disseminate a framework for creating and utilising digital learning portfolios. This framework guides teachers on how to use

readily available platforms and tools to create individualised learning pathways for learners, incorporating multimedia resources, formative assessments, and personalised feedback mechanisms. This empowers teachers to cater to diverse learning needs and styles in the Business Studies curriculum. To achieve maximum compliance and participation from teachers, who will see this recommendation succeeding, the teachers should also be encouraged to actively engage with the framework and explore different digital portfolio platforms and tools, selecting those that best suit their teaching context and the needs of their learners. This may foster a sense of ownership among teachers, allowing them to tailor the approach to their specific classroom environment. This framework aligns well with the Modification and Redefinition levels of the SAMR model. With regard to the Modification level, digital portfolios, the incorporation of multimedia resources, formative assessments, and personalised feedback mechanisms all modify traditional assessment methods because they offer a more dynamic and individualised approach that showcases the extent of learning and the progress of the learners. The framework's guidance on creating individualised learning pathways further supports this modification, allowing teachers to tailor instruction to individual learner needs (Choi & Lam, 2018; Zhai et al., 2018). When digital portfolios are effectively implemented, they can redefine the learning process in the sense that they can become platforms for learner reflection, self-assessment, and ownership of learning. This shift towards a learner-centred approach, facilitated by technology, represents a significant departure from traditional, teacher-centric approaches which aligns with the Redefinition level of the SAMR model (Handina et al., 2020; Paulauskaitė-Tarasevičienė et al., 2022; Rachman et al., 2022).

In addition, teachers should not view the use of digital portfolios as an additional burden, but as an integral part of their teaching practice, as they recognise its potential to enhance learning and cater to the different learner needs that exist within the classroom. According to Mgarbi, Chkouri, and Tahiri (2022), this shift in mindset is crucial for the successful integration of any new pedagogical approach.

Recommendation 11

Under finding 11, the literature and empirical research reveal that interactive learning platforms and educational software can provide immediate feedback and assessment that enables teachers to

track the learners' progress more effectively, thus allowing the teacher to intervene when necessary to address areas of difficulty. This falls under the Augmentation level of the SAMR model because the integration of ICT improves the efficiency and effectiveness of existing practices (Ames 2023; Lestari 2022). To fully realise the benefits of the immediate feedback and progress tracking offered by interactive learning platforms, the Department of Basic Education should prioritise partnerships with telecommunications providers to offer affordable, if not free, data bundles specifically designated for accessing educational software and platforms. This will help bridge the digital divide and ensure that all learners, regardless of their socioeconomic background, can benefit from real-time feedback, personalised support, and equitable access to digital learning opportunities in Business Studies. The accomplishment of this recommendation.

Recommendation 12

The literature and empirical research found that technical issues and teacher unfamiliarity with ICT tools can cause lesson deviations which may disrupt the intended flow and integration of technology during the lesson. To mitigate potential lesson disruptions caused by ICT challenges, the Department of Basic Education should establish dedicated ICT support teams at the district level. These teams would offer schools regular on-site technical support, troubleshooting assistance, and tailored training on effectively utilising specific ICT tools in the classroom. This localised support system empowers teachers to confidently integrate technology, minimise technical disruptions, and ensure smoother lesson delivery. When analysing this recommendation through the lens of the theoretical framework of this study, it becomes evident that this recommendation directly supports the Augmentation level of the SAMR model by enhancing the effective use of technology. Providing regular on-site technical support, troubleshooting assistance, and tailored training empowers teachers to confidently integrate technology into their lessons, thus minimising disruptions and maximising its potential for enhancing teaching and learning (Ames, 2023; Lestari, 2022).

Recommendation 13

Finding 13 suggests that learners misuse digital devices or online resources for non-educational purposes, such as browsing social media or playing games, which detracts from their engagement with the lesson content. To address the issue of learners misusing digital devices during lessons, it is recommended that the Department of Basic Education work with schools to develop and implement clear and consistent digital citizenship policies. These policies should outline acceptable and unacceptable uses of devices in the classroom, emphasise responsible online behaviour, and establish consequences for misuse. By setting clear expectations and promoting responsible digital citizenship, schools can create a more focused and productive learning environment. Both teachers and learners play a role in supporting the effective implementation of these policies.

Recommendation directed to the teachers

Training on digital citizenship principles and effective strategies for promoting responsible device use in classrooms must be offered. This training could be in line with or included in the targeted professional development programs proposed in recommendation 1; as well as the dedicated ICT support unit which will focus on providing support to teachers, as mentioned in Recommendation 3. This will empower teachers to model good digital citizenship, guide learner behaviour and address misuse effectively (Joseph, 2023). Teachers can also integrate digital citizenship education into the curriculum to foster critical thinking and responsible online behaviour among learners. (Krutka & Carpenter, 2017).

Recommendation directed to the learners

Learners should also be actively involved in the development and implementation of digital citizenship policies. This participatory approach fosters a sense of ownership and encourages learners to take responsibility for their online behaviour. (Joseph, 2023) According to Leatham and Robertson, (2017), learners should also be encouraged to reflect on their digital footprint and the potential consequences of their online choices. Open discussions about online safety, privacy,

and ethical behaviour can empower learners to become responsible digital citizens (Ghosn-Chelala, 2018; Melhuish, Spencer, Webster, Spence, 2018).

Recommendation 14

In finding 14, the literature review and the empirical study found that there is insufficient provision of continuous training programs for teachers to enhance their ICT skills and pedagogical strategies. To empower teachers to continuously enhance their ICT skills spontaneously, the Department of Basic Education should foster a culture of peer-to-peer mentorship by establishing a voluntary online platform where teachers can connect with and learn from each other. This platform could facilitate the sharing of best practices, offer a space for troubleshooting ICT challenges, and provide a forum for showcasing innovative ways to integrate technology into Business Studies lessons. By fostering a community of practice, teachers can learn from each other's experiences and continuously develop their ICT skills within a supportive and collaborative environment.

Recommendation 15

Finding 15 presents a challenge related to infrastructure, whereby issues of power outages and the unreliability of ICT devices were found to potentially pose significant barriers to ICT integration in South African schools. To mitigate the impact of infrastructure-related challenges on ICT integration, the Department of Basic Education, through its provincial education departments, should pilot a program that equips schools with solar-powered charging stations for digital devices. This initiative would provide a reliable and sustainable power source for ICT tools, ensuring that teaching and learning can continue uninterrupted, even during power outages. This practical approach acknowledges the reality of infrastructure limitations while empowering schools to create a more conducive environment for ICT integration in education. By providing a reliable power source, the Augmentation level of the SAMR model is effective because these independent charging stations augment the functionality of digital devices, enabling their consistent use in teaching and learning, even during power outages (Ames, 2023; Lestari, 2022, Malatji, 2023).

6.5 RECOMMENDATIONS FOR FINDINGS EMANATING FROM THE THEORETICAL FRAMEWORK.

Recommendation 16

Finding 16 suggests that teachers remain at the substitution or augmentation levels of the SAMR model because they utilise technology primarily to enhance existing tasks rather than to fundamentally redesign or redefine their pedagogical approaches to teaching. To guide Business Studies teachers towards the modification, redefinition, and ultimately, transformation levels of the SAMR model, it is recommended that professional development programs be implemented that move beyond simply enhancing existing tasks with technology. These programs should empower teachers to redesign learning experiences by utilising ICT to facilitate learner-created content, collaborative online simulations of real-world business scenarios, and learner-led projects that utilise technology for research, design, and presentation, fostering deeper learning and 21st-century skills.

6.6 RECOMMENDATIONS FOR FINDINGS NOT EMULATED BY THE LITERATURE REVIEW AND THEORETICAL FRAMEWORK COVERED IN THIS STUDY.

Recommendation 17

The empirical research of this study found that the long-term usage of ICT tools in schools can lead to significant cost savings and enhanced operational efficiency. To help schools utilise ICT for cost savings, the Department of Basic Education should create a user-friendly guide promoting free, open-source software alternatives for administrative tasks. This initiative can be further strengthened by encouraging teachers to embrace and share their experiences with these tools, and parents can advocate for their adoption through school communication channels. This collaborative effort will ensure that schools can optimise resources, prioritise spending on learner-centred initiatives, and realise the full cost-saving potential of ICT.

6.7 CHAPTER SUMMARY

This chapter presents a comprehensive analysis of the research findings, drawing on the data obtained from the participants, as detailed in Chapter 5. The findings were examined and discussed considering the existing literature reviewed (see Chapter 2) and interpreted through the lens of the study's theoretical framework (Chapter 3). This process of contextualisation and critical analysis illuminated the key challenges and opportunities surrounding ICT integration in Business Studies education. Informed by these insights, this study concludes by proposing a set of practical and actionable recommendations aimed at addressing the identified issues and fostering a more effective and sustainable approach to ICT integration in South African schools.

Chapter 7 presents a summary of the study, conclusions derived from the data, and opportunities for future research.

CHAPTER 7

SUMMATIVE REMARKS AND CONCLUSIONS

7.1 INTRODUCTION

The preceding chapter focused on the presentation and discussion of the findings and recommendations. The data collected through semi-structured individual interviews provided comprehensive insights from the participants, facilitating the compilation of findings aimed at understanding the pedagogical value of integrating ICT tools in teaching Business Studies to learners. The key findings of this study were emphasised using themes and subthemes derived in Chapter 5. This chapter concludes the research process and presents a summary of the study's results with a primary focus on demonstrating the fulfilment of research objectives after contrasting them with the literature reviewed in Chapter 2.

7.2 SYNOPSIS OF THE STUDY

The study involved participants from six schools located in the Johannesburg Central District of Gauteng Province. All six schools were classified as ordinary public secondary schools with no fees. The study included six participants who engaged in semi-structured, individual interviews. This study aimed to gather teachers' perspectives on the integration of ICT tools in teaching Business Studies to learners. This study comprises seven chapters, including the current one. My supervisor emphasised the importance of acknowledging my rationale and maintaining a motivating drive. I have developed justifications for my commitment to this study until its completion. This is where I drew from my personal ambitions, career aspirations, and academic motivations to gain a comprehensive understanding of the research process that I must undertake.

I presented my first chapter, titled "Overview of the Study," which provided a comprehensive description of the study, including the research aim, objectives, main research questions, and sub-questions. Additionally, I discussed the research paradigm, a synopsis of the research design and methodology, population and sampling techniques, standards of validity and trustworthiness, and ethical clearance from gatekeepers. I progressed to Chapter Two and utilised empirical research to

gather additional literature to support my study. This section references a substantial number of esteemed authors and scholars in the relevant field to select the theoretical framework (Chapter 3). Chapter 4 elaborates on the research design and methods, building upon the discussion presented in Chapter 1. Chapter 5 presents the analysis of conversation, which is guided by verbatim responses from participants for data interpretation and scholarly writings for data analysis. This conversation then allowed for Chapter 6, in which the findings and recommendations of the study are presented.

The participants presented information that exceeded my expectations, considering my background as an ICT specialist. I was employed as a computer laboratory assistant immediately after secondary school and have maintained an interest in the integration of ICT in educational settings, particularly in township schools, where such resources are limited. I completed my secondary education at Dr BW Vilakazi Senior Secondary School in Zola 3, where ICT resources were limited. I currently have the privilege of working as a teacher in a semi-affluent school with the available resources. This transition allows for an examination of the disconnect between theoretical frameworks and their practical application, highlighting inequities within the education system in specific schools.

These reflections represent my personal perspective during the development of this study. In the context of the Fourth Industrial Revolution, school policies delineate the integration of ICT into educational practices. However, policymakers often neglect the uneven distribution of resources and insufficient training for teachers, particularly those with more experience, to effectively incorporate ICT tools into their daily activities. This oversight hinders the realisation of the overarching goals of educational policy. This dissertation aims to serve as a foundation for inspiring policymakers to equitably distribute educational resources and tools to enhance instructional outcomes across all schools, rather than solely those involved in ICT integration pilot programs.

This study presents narrative findings derived from the participants' suggestions. These endorsements aim to foster a culture within schools that enables newly trained teachers, educated in various higher learning institutions utilising ICT, to effectively share knowledge with their

colleagues, thereby ensuring that all teachers remain informed about contemporary 21st century pedagogical practices. In contemporary society, educational institutions are influenced by the urgency stemming from both the pre-and present technological eras. To the best of my knowledge, the collaborative relationship between teachers from these distinct eras has not been effectively established or implemented in schools. This issue can be attributed to the ambiguous and stagnant advancement of ICT integration in schools, particularly those operating under significant poverty constraints and lacking access to educational resources.

This is mentioned due to its significance in understanding teachers' perceptions and experiences regarding the integration of ICT tools in their daily teaching and pedagogy. Therefore, it is essential to investigate the factors that hinder the effective integration of ICT in educational institutions. This study indicates that teachers play a central role in the implementation of ICT integration in teaching practice. Therefore, it is essential for teachers to comprehend their role in the integration of teaching methodologies. This reflects the understanding that contemporary learners are increasingly inclined to utilise Information and Communication Technology (ICT), which plays a significant role in interpreting the outcomes of ICT integration during progress evaluation. Consequently, it is essential that learners are not overlooked during the implementation of teaching with ICT tools.

7.3 SUMMARY OF RECOMMENDATIONS EMANATING FROM THE STUDY.

Based on the study findings, comprehensive recommendations are provided to key stakeholders identified as essential for implementing ICT integration in educational settings. These recommendations may be utilised individually or in combination to accommodate specific learning environments and contexts. The stakeholders receiving recommendations include teachers, principals, policymakers, learners, parents, and guardians.

7.3.1 Summarised recommendations for teachers

Teachers need continuous professional development programs that equip them with technical skills and pedagogical strategies to integrate ICT effectively. These programs should emphasise learner-

centred approaches, innovative lesson design, and improved assessment methods. Teachers should also receive training in digital citizenship to manage classroom technology and curb learner misuse of digital tools. Moreover, peer mentorship programs and online collaborative platforms should be established to facilitate knowledge sharing and troubleshooting among teachers. Teachers should actively explore and experiment with ICT resources and adapt them to their teaching styles to maximise learner engagement. They should also integrate project-based learning, flipped classrooms, and educational simulations into their teaching to transition from passive to active learning. Additionally, teachers must familiarise themselves with digital learning portfolios and interactive platforms to personalise learning, track learner progress, and provide real-time feedback.

7.3.2 Summarised recommendations for Learners

Learners should be actively involved in developing digital citizenship policies to foster a sense of ownership and accountability for responsible technology use. Open discussions on online safety, privacy, and ethical behaviour should be facilitated to cultivate responsible digital citizenship. Furthermore, learners should be encouraged to use ICT tools for collaboration, research, and self-directed learning, and to utilise technology to develop critical thinking and problem-solving skills. To prevent the misuse of digital devices for non-educational purposes, structured classroom policies must be implemented to ensure that learners understand the expectations for using ICT responsibly. Digital learning portfolios should also be introduced to help learners track their academic progress, reflect on their learning experiences and receive personalised feedback from teachers.

7.3.3 Summarised recommendations for Subject Advisors or District Officials

District officials should establish dedicated ICT support teams to provide on-site technical assistance, troubleshoot challenges, and offer tailored training to teachers for ICT integration. These teams should also facilitate workshops and continuous training programs to keep teachers updated on the latest technologies and best practices. Additionally, district officials should collaborate with schools to address infrastructure challenges, such as ensuring a reliable electricity

supply through solar-powered charging stations. They must also work closely with teachers to ensure that ICT policies are effectively implemented and that schools receive adequate support to sustain ICT integration initiatives.

7.3.4 Summarised recommendations for Policy Makers

Policymakers should develop and implement standardised ICT integration policies that clearly outline expectations, guidelines, and best practices for technology use in the classroom. These policies should be aligned with teacher training programs to ensure that all teachers, both pre- and in-service, receive the necessary skills and knowledge to integrate ICT effectively. A collaborative task force consisting of representatives from the Department of Basic Education, universities, and experienced ICT-integrating teachers should be established to bridge the gap between policy and practice in teacher training. This task force should develop a framework that ensures that ICT integration is not only encouraged but also actively supported through clear policies and sustained funding.

7.3.5 Summarised recommendations for the Department of Basic Education

The DBE should create a dedicated ICT support unit to assist schools with technical challenges and provide pedagogical guidance. This unit should offer professional development programs, facilitate the adoption of best practices, and provide teachers with resources to enhance ICT integration. The DBE should also establish partnerships with telecommunications providers to offer affordable or free data bundles, specifically for accessing educational software and online platforms. Additionally, publicly accessible online repositories of curriculum-aligned resources should be developed to support teachers in engaging with digital content. Furthermore, the DBE must implement strategies to provide alternative power solutions, such as solar energy, to address the electricity shortages that hinder ICT use in classrooms.

7.3.6 Summarised recommendations for Teacher Training Institutions (Universities and Colleges)

Teacher training institutions should incorporate ICT integration as a mandatory component in all teacher education programmes. This should include both technical training and pedagogical

approaches that enable future teachers to use technology effectively for instruction. ICT integration should also be embedded in practical teaching experiences, ensuring that student teachers gain hands-on experience with various digital tools before they enter the workforce. Additionally, universities and colleges should collaborate with the DBE to align teacher-training programmes with ICT policies and classroom realities. By standardising ICT competencies within educational qualifications, institutions can ensure that all graduating teachers possess a baseline proficiency in using technology to enhance learning.

7.4 FUTURE RESEARCH DIRECTIONS

The research was conducted in the Johannesburg Central District. Future researchers may expand the scope of this study by conducting similar research in other provinces and incorporating a larger participant pool, thereby addressing the sampling limitations mentioned in the preceding section. Future researchers should investigate the long-term effects of ICT integration on learners' academic performance rather than solely focusing on the experiences and perceptions of teachers. The utilisation of such lenses will enable schools and policymakers to investigate the challenges encountered by learners in the integration and implementation of ICT tools in public schools. The insights obtained from this study should be compared with those derived from private sector schools. This will facilitate the government's efforts to expedite the closure of the inequity gap in the allocation of state-owned resources. Furthermore, this will enhance advocacy discourse regarding the equitable allocation of resources to learners, irrespective of the type and location of their schools. This approach aims to address and mitigate, if not eliminate, the historical imbalances and inequities established during the apartheid regime, particularly in education.

7.5 CONCLUSIONS

The study examined teachers' experiences and perceptions regarding the integration of ICT tools in their daily instruction. This study investigates the pedagogical value of teachers instructing Business Studies to learners. The investigation was conducted in six schools in the Johannesburg Central District. The integration of ICT in schools is essential for South Africa to remain competitive in the global educational arena. Numerous countries have made significant

advancements in education, receiving commendations for their effective integration of ICT in teaching and learning processes. This ensures that learners acquire the contemporary skills and competencies necessary for navigating their career paths and adapting swiftly to the current discourse associated with the Fourth Industrial Revolution.

In Johannesburg's central district, the introduction and implementation of ICT tools in teaching has been accompanied by narratives of both success and failure. The uneven distribution of educational resources is attributable to the quintile system employed in schools, which dictates resource allocation, and the limited integration of ICT in some institutions. While some educational stakeholders view the introduction of ICT as chaotic, others emphasise that ICT tools have significantly improved teaching methods, enhanced learner engagement, strengthened the partnership between schools and parents, and positively impacted learning outcomes. ICT contributes to the creation of more effective and interactive learning environments, thereby maintaining learners' interest in ICT for their personal development.

The incorporation of ICT tools in the instruction of Business Studies for learners provides significant pedagogical benefits. The integration of technological resources in educational settings enhances learner engagement and promotes interactive learning while providing open access to a vast array of resources that can challenge and deepen the understanding of complex concepts. The utilisation of ICT tools provides alternative methods for knowledge dissemination and instruction delivery in education. ICT integration addresses diverse learner needs and learning styles, thereby promoting inclusivity and providing tailored educational experiences. The integration of ICT in educational institutions not only supports the academic growth of learners but also equips them for the contemporary workforce, where ICT tools are employed to enhance efficiency and productivity. The introduction of ICT equips learners with the essential digital skills necessary for navigating the modern economy.

The integration of ICT in skill development promotes creative and critical thinking, which is essential for devising solutions in complex educational environments in the contemporary era. Furthermore, the integration of ICT is expected to enhance teamwork and problem-solving skills, which are essential for future leaders. Successful ICT integration in schools necessitates

addressing existing challenges that hinder stakeholder participation. Challenges include insufficient teacher training, lack of investment in infrastructure, and unequal access to technological resources. Addressing these obstacles enables teachers and learners to fully appreciate the benefits of ICT, leading to improvements in academic performance across all subjects and enhancing the overall quality of education in the long run. The integration of ICT in teaching Business Studies to Grade 11 pupils significantly enhance traditional pedagogical methods, enriches the learning experience, and effectively prepares learners for future challenges.

REFERENCES

- Abdullah, M., Siraj, S., Hussin, Z., & Leng, C. (2015). Interpretive structural activity-based m-learning implementation model of undergraduate English language learning: a theoretical mapping. *Procedia - Social and Behavioral Sciences*, 176, 299-306. <https://doi.org/10.1016/j.sbspro.2015.01.475>
- Abedi, E. A., Prestridge, S., & Hodge, S. (2024). Teachers' beliefs about technology integration in Ghana: A qualitative study of teachers', headteachers', and education officials' perceptions. *Education and Information Technologies*, 29(5), 5857–5877. <https://doi.org/10.1007/s10639-023-12049-0>
- Adams, M., Cornford, S., Martin, D., & McCorquodale, P. (2019). Composite matrix construction for structured grid adaptive mesh refinement. *Computer Physics Communications*, 244, 35-39. <https://doi.org/10.1016/j.cpc.2019.07.006>
- Adhikari, G. (2021). Teachers' perception and challenges of using ICT in teaching mathematics at secondary level. *Mathematics Education Forum Chitwan*, 6(6), 50-65. <https://doi.org/10.3126/mefc.v6i6.42405>
- Aiyegbayo, O. (2014). How and why academics do and do not use iPads for academic teaching?. *British Journal of Educational Technology*, 46(6), 1324-1332. <https://doi.org/10.1111/bjet.12202>
- Ajani, O. & Govender, S. (2023). Impact of ict-driven teacher professional development for the enhancement of classroom practices in south africa: a systematic review of literature. *Journal of Educational and Social Research*, 13(5), 116. <https://doi.org/10.36941/jesr-2023-0125>
- Ajibade, B. A., & Bertram, C. (2020). How district teacher development centres support teachers' learning: Case studies in KwaZulu-Natal, South Africa. *Perspectives in Education*, 38(2), 103-117.
- Akram, H., Abdelrady, A. H., Al-Adwan, A. S., & Ramzan, M. (2022). Teachers' perceptions of technology integration in teaching-learning practices: A systematic review. *Frontiers in psychology*, 13, 920317.

- Al-Gindy, A., Felix, C., Ahmed, A., Matoug, A., & Alkhidir, M. (2020). Virtual reality: Development of an integrated learning environment for education. *International Journal of Information and Education Technology*, 10(3), 171-175.
- Alfiana, H. (2021). Peningkatan model samr serta penerapannya untuk pembelajaran online yang mendalam. *Jurnal Inovasi Teknologi Pendidikan*, 8(1). <https://doi.org/10.21831/jitp.v8i1.42026>
- Ali, M., Younas, K., & Mushtaq, M. (2021). Impact of continuous assessment techniques on students' academic performance at the secondary school level. *Global Educational Studies Review*, VI(II), 105-113. [https://doi.org/10.31703/gesr.2021\(vi-ii\).10](https://doi.org/10.31703/gesr.2021(vi-ii).10)
- Alzaidiyeen, N., Leong, L., & Fong, S. (2010). Teachers' attitudes and levels of technology use in classrooms: The case of Jordanian schools. *International Education Studies*, 3(2). <https://doi.org/10.5539/ies.v3n2p211>
- Ames, M. (2023). Assessment of the implementation of the substitution augmentation modification redefinition model in online courses during the prep phase at university of global health equity. *International Journal of Online and Distance Learning*, 4(1), 47-55. <https://doi.org/10.47604/ijodl.2169>
- Amin, N., & Mahabeer, P. (2021). Curriculum tinkering in situations of crises and inequalities: The case of South Africa. *Prospects*, 51(1), 489-501.
- Anastasopoulou, E., Tsagri, A., Avramidi, E., Lourida, K., Mitroyanni, E., Tsogka, D., & Katsikis, I. (2024). The Impact of ICT on Education: *Technium Social Sciences Journal*, 58, 48–55. <https://doi.org/10.47577/tssj.v58i1.11144>
- Anderson, T. (2003). Getting the mix right: An updated and theoretical rationale for interaction. *International Review of Research in Open and Distance Learning*, 4(2). Retrieved 1016, 2017, from <http://www.irrod.org/content/v4.2/anderson.html>
- Anderson, T. (1998). Learning in a networked world: New roles and responsibilities. In C.Gibson (Ed.) *Distance learners in higher education*, 97-112.
- Anderson, T. and Garrison, D.R. (1998). Learning in a networked world: New roles and responsibilities. In C. Gibson (Ed.) *Distance learners in higher education*, 97-112.
- Ankiewicz, P. (2021). Technology education in South Africa since the new dispensation in 1994: An analysis of curriculum documents and a meta-synthesis of scholarly work. *International*

Journal of Technology and Design Education, 31(5), 939-963.

- Ansari, A. N. (2024). Enhancing Real-World Skills through Internships. *Advances in Educational Technologies and Instructional Design Book Series*, 211–236. <https://doi.org/10.4018/979-8-3693-7555-6.ch008>
- Antonenko, P. D. (2015). The instrumental value of conceptual frameworks in educational technology research. *Educational Technology Research and Development*, 63(1), 53–71. <https://doi.org/10.1007/S11423-014-9363-4>
- Arantes, J.A. (2022). The SAMR model as a framework for scaffolding online chat: a theoretical discussion of the SAMR model as a research method during these “interesting” times. *Qualitative Research Journal*, doi: 10.1108/qrij-08-2021-0088
- Ardiansyah, W., & Ujihanti, M. (2017). Constructivism and Its Perspectives Related to Teaching and Learning Process in the Classroom: A Conceptual Framework. *Tarbawy: Jurnal Pendidikan Islam*, 4(1), 117-143.
- Arnold, B. (2019). The seven traits of a learning environment: A framework for evaluating mobile learning engagement. *International Journal of E-Education E-Business E-Management and E-Learning*, 9(1), 54-60. <https://doi.org/10.17706/ijeeeee.2019.9.1.54-60>
- Autry Jr, A. J., & Berge, Z. (2011). Digital natives and digital immigrants: Getting to know each other. *Industrial and commercial training*, 43(7), 460-466.
- Awotunde, O. B., Onasanya, A. S., & Adefuye, A. L. (2024). Perception of Pre-Service Teachers on the Integration of Social Media for Learning in Universities in Kwara State, Nigeria. *International Journal of Advanced Humanities Research*, 4(2), 16-28.
- Bai, Y., Mo, D., Zhang, L., Boswell, M., & Rozelle, S. (2016). The impact of integrating ICT with teaching: Evidence from a randomised controlled trial in rural schools in China. *Computers & Education*, 96, 1-14.
- Bawinile, J., Mthanti. (2023). 1. A Descriptive Learning Analytics: An Online Learning Program and Load-shedding Conundrum. *E-Journal of Humanities, Art and Social Sciences*, doi: 10.38159/ehass.202341214
- Bay, D. N. (2020). Examining the plays that preschool children prefer and the characteristics shaping them using the draw and tell technique. *The European Journal of Educational Sciences*, 07(02). <https://doi.org/10.19044/ejes.v7no2a7>

- Betts, A. (2024). *Methods and methodology*. 62–81. <https://doi.org/10.1093/actrade/9780192871824.003.0004>
- Bicalho, R., Coll, C., Engel, A., & Oliveira, M. (2022). Integration of ICTs in teaching practices: Propositions to the SAMR model. *Educational Technology Research and Development*, 71(2), 563-578. <https://doi.org/10.1007/s11423-022-10169-x>
- Binangbang, J. (2020). The effect of substitution, augmentation, modification, and redefinition models on students' writing skills. *Middle Eastern Journal of Research in Education and Social Sciences*, 1(2), 29-51. <https://doi.org/10.47631/mejress.v1i2.131>
- Bingimlas, K. A. (2009). Barriers to the successful integration of ICT in teaching and learning environments: A review of the literature. *Eurasia Journal of Mathematics, science and technology education*, 5(3), 235-245.
- Bloom, G. A., Alexander-Urquhart, D., & Falcão, W. R. (2024). *Individual and focus group interviews*. 212–221. <https://doi.org/10.4324/9781003381891-26>
- Bloom, L. A., Doss, K. K., Sastre, C., & Martin, T. H. (2019). The effects of models and instructions on children's divergent thinking. *Gifted and Talented International*, 34(1-2), 44-58.
- Boateng, S., & Kalonde, G. (2024). *Exploring the Synergy of the SAMR (Substitution, Augmentation, Modification, and Redefinition) Model and Technology Integration in Education: The Key to Unlocking Student Engagement and Motivation*. <https://doi.org/10.33422/aretl.v1i1.185>
- Bonfiglio-Pavisich, N. (2018). Technology and Pedagogy Integration: A Model for Meaningful Technology Integration. *Australian Educational Computing*, 33(1),
- Boobalakrishnan, N., & Pichandy, C. (2016). ICT and higher education: Teachers technology-driven ecosystem and a paradigm shift in learning environment. *ICTACT Journal on Management Studies*, 2(4), 377-383.
- Boonmoh, A., & Sanmuang, K. (2024). 1. Challenges of ICT Teachers in Integrating Digital Literacy into Post-COVID-19 Curriculum Revisions in Thailand's English Teacher Education Programs. *International Journal of Education and Literacy Studies*, doi: 10.7575/aiac.ijels.v.12n.3p.208

- Botello, F. O., Hernández, G. V., & de Luna Caballero, R. (2019). Pedagogical considerations for the curricular incorporation of ICT. *Revista de Docencia e Investigación Educativa: Journal of Teaching and Educational Research*, 5(15), 32-39.
- Bourbour, M. (2014). Preschool teachers' reasoning about interactive whiteboard embedded in mathematics education in Swedish preschools. *Journal of Nordic Early Childhood Education Research Tidsskrift for Nordisk Barnehageforskning*. Retrieved February 8, 2017, from <https://journals.hioa.no-nbf-download>
- Brantley-Dias, L., & Ertmer, P. A. (2013). Goldilocks and TPACK: Is the construct ‘just right?’. *Journal of Research on Technology in education*, 46(2), 103-128.
- Bright, D. (2022). An integrative review of the potential of wireless assistive technologies and internet of things (IoT) to improve accessibility to education for students with disabilities. *Assistive Technology*, 34(6), 653-660.
- Brown, C., Thomas, H., Ad, V. der M., & L, V. D. (2008). *The impact of South Africa's ICT infrastructure on higher education*. http://ahero.uwc.ac.za/index.php?module=cshe&action=viewtitle&id=cshe_478
- Budnyk, O., & Kotyk, M. (2020). Use of information and communication technologies in the inclusive process of educational institutions. *Journal of Vasyl Stefanyk Precarpathian National University*, 7(1), 15-23.
- Çapuk, S., & Kara, A. (2015). A discussion of ICT integration within the developed and developing world context from critical perspectives. *Procedia-Social and Behavioral Sciences*, 191, 56-62.
- Chand, B. (2018). *A constructivism approach towards integration of ICT for collaborative learning*. 6(26). <https://doi.org/10.21922/SRJHSEL.V6I26.11432>
- Chandra, V., & Mills, K. A. (2015). Transforming the core business of teaching and learning in classrooms through ICT. *Technology, Pedagogy and Education*, 24(3), 285-301.
- Chen, Y. (2022). The relationship of students' blended learning ability and students' willingness to learn a blended course: the mediating role of teachers' blended teaching competency. *Creative Education*, 13(9), 2799-2810.
- Chisango, G., Marongwe, N., Mtsi, N., & Matyedi, T. E. (2020). Teachers' perceptions of adopting information and communication technologies in teaching and learning at rural secondary

- schools in Eastern Cape, South Africa. *Africa Education Review*, 17(2), 1-19.
- Chuaungo, M. L., Lalnunsiami, K., & Mishra, L. (2022). Opportunities and Barriers in ICT-Integrated Education: A Critical Analysis. *International Journal of Engineering Technology and Management Sciences*, 6(5), 753-759.
- Clark, R. (2005). Five common but questionable principles of multimedia learning. In Meyer, R. Cambridge Handbook of Multimedia Learning.
- Cleland, J. A. (2017). The qualitative orientation in medical education research. *Korean journal of medical education*, 29(2), 61.
- Cohen, L., Manion, L., & Morrison, K. (2011). Research methods in education(7th ed.). Routledge.
- Cohen, L., Manion, L., & Morrison, K. (2007). Research methods in education (6th ed). . London: Routledge Falmer.
- Coleman, L. O., Gibson, P., Cotten, S. R., Howell-Moroney, M., & Stringer, K. (2016). Integrating computing across the curriculum: The impact of internal barriers and training intensity on computer integration in the elementary school classroom. *Journal of Educational Computing Research*, 54(2), 275-294.
- Conole, G., & Dyke, M. (2004). What are the affordances of information and communication technologies? *ALT-J*, 12(2), 113–124. <https://doi.org/10.1080/0968776042000216183>
- Cox M, W. M. (2003). ICT and Pedagogy. A Review of the Research Literature.
- Creswell, J.W. (2003). Research design: Qualitative, quantitative, and mixed methods approaches. (2nd ed.) Thousand Oaks: Sage.
- Creswell, J.W. (2012). Educational research: Planning, conducting, and evaluating quantitative and qualitative research. Pearson Education.
- Dahnoun, N. (2023). 2. Enhancing Remote and Face-to-Face Learning: Real-Time Feedback System for Teaching Platforms. doi: 10.1109/meco58584.2023.10154911
- Department of Basic Education, R. (2011). Republic of South Africa (RSA), National Curriculum Statement (NCS). Curriculum and Assessment Policy Statement (CAPS): Business Studies. Pretoria, SA: Government Gazette.

Department of Basic Education. (2004). White Paper on e-Education: Transforming Learning and Teaching through Information and Communication Technologies (ICTs) Government Gazette. No. 26734. South Africa.

Dhir, S., & Dubey, R. (2021). Identification of Barriers to the Successful Integration of ICT in Teaching and Learning. *Turkish Online Journal of Qualitative Enquiry*, 12(5).

Dinh, H. T. B. (2015). *Factors influencing English as a Foreign Language (EFL) teachers' use of Information and Communication Technology (ICT) in classroom practice: a mixed methods study at Hanoi University, Vietnam* (Doctoral dissertation, RMIT University).

Dogan, M. (2010). Primary trainee teachers' attitudes to and use of computer and technology in mathematics: the case of Turkey. *Educational Research and Reviews*, 5(11), 690.

Dron, J. (2012). The Pedagogical-technological Divide and the elephant in the Room. *International Journal on e-Learning*, 11(1), 23-38.

Drugova, E., Журавлева, И., Aiusheeva, M., & Grits, D. (2021). Toward a model of learning innovation integration: TPACK-SAMR based analysis of the introduction of a digital learning environment in three Russian universities. *Education and Information Technologies*, 26(4), 4925-4942. <https://doi.org/10.1007/s10639-021-10514-2>

Du Plessis, A., & Webb, P. (2008). Generative use of computers: Promoting critical outcomes in the South African curriculum. *Education as change*, 12(1), 15-27.

Dyantiyi, N. (2023). Turning threats into opportunities: a reflection on the use of digital technologies in learning and teaching environment in one South African University. *International Journal of Research In Business and Social Science*, 12(10), 63–68. <https://doi.org/10.20525/ijrbs.v12i10.3106>

Dyke, G. C. (2004). What are the affordances of information and communications technologies? *Research in Learning Technology*, 12(2), 113-124.

Ebidor, L.L., & Ikhida, I. G. (2024). Literature Review in Scientific Research: An Overview. *East African Journal of Education Studies*, 7(2), 179–186. <https://doi.org/10.37284/eajes.7.2.1909>

Eden, C., Chisom, O., & Adeniyi, I. (2024). Harnessing technology integration in education: Strategies for enhancing learning outcomes and equity. *World Journal of Advanced Engineering Technology and Sciences*, 11(2), 001–008.

<https://doi.org/10.30574/wjaets.2024.11.2.0071>

- Emelina-Torres, M., Orlando-Piraquive, J., & Chiappe, A. (2023). School engagement and ICT: a systematic review.
- Erica, R., Hamilton., Joshua, M., Rosenberg., Mete, Akcaoglu. (2016). 2. The Substitution Augmentation Modification Redefinition (SAMR) Model: A Critical Review and Suggestions for its Use. *Techtrends*, doi: 10.1007/S11528-016-0091-Y
- Érsek, A. (2021). Történelmi forrásokhoz kapcsolódó kritikai gondolkodásfejlesztés tapasztalatai.. <https://doi.org/10.17048/am.2020.179>
- Feist, D., & Reid, D. (2018). Technology and teaching: Technology and student-centred pedagogy in 21st century classrooms. In *Handbook of research on digital content, mobile learning, and technology integration models in teacher education* (pp. 69-87). IGI Global.
- Ferreira, N. (2012). Constructing a psychological career profile for staff retention (Doctoral dissertation, University of South Africa). <https://uir.unisa.ac.za/handle/10500/6722>
- Financing constraints for innovation* (pp. 153–156). (2022). Edward Elgar Publishing eBooks. <https://doi.org/10.4337/9781839106996.00023>
- Fletcher, J., Everatt, J., Mackey, J., & Fickel, L. (2020). Digital technologies and innovative learning environments in schooling: A New Zealand experience. *New Zealand Journal of Educational Studies*, 55(1), 91-112.
- Gamage, S. N., & Tanwar, T. (2018). Systematic Reviews (SRs)| Factors Affecting the Use of ICTs in the Classroom by Teachers: A Systematic Literature Review *Information Technologies & International Development*, 14, 11.
- Garris, W. R., Lester, L., Doran, E., Lowery, A., & Weber, A. (2018). iCollaborate or not: Does technology impede collaborative learning among primary grade students?. *International Journal of Learning, Teaching and Educational Research*, 17(5), 64-81.
- Gaur, V. (2025). Teacher training in lifelong learning: The importance of digital competence in the encouragement of teaching innovation. *The Business & Management Review*, 15(03). <https://doi.org/10.24052/bmr/v15nu03/art-24>
- Gebremeskel, G. B., Kebede, A. A., & Chai, Y. (2016). The paradigm role of ICT in behavioural and educational psychology: The case of developing countries. *International Journal of*

Information and Education Technology, 6(4), 301.

George, F. a. (2016). Teacher perceptions of the use of ICT in a Computer Assisted Learning Environment. *Universal Journal of Educational research*, 4(1), 151-156.

Gerhardt, T., & Mackenzie-Philps, L. (2018). The challenges and opportunities of ICT in WIL: A case study among priests exploring the correlation and trajectory between effective WIL and ICT pervasiveness. *Higher Education, Skills and Work-Based Learning*, 8(4), 408-421.

Ghavifekr, S., & Rosdy, W. A. W. (2015). Teaching and learning with technology: Effectiveness of ICT integration in schools. *International journal of research in education and science*, 1(2), 175-191.

Ghosn-Chelala, M. (2018). Exploring sustainable learning and practice of digital citizenship: Education and place-based challenges. In *Education Citizenship and Social Justice* (Vol. 14, Issue 1, p. 40). SAGE Publishing. <https://doi.org/10.1177/1746197918759155>

Goh, C., Pan, G., & Yuen, C. K. (2020). How to prepare young finance and accounting professionals for the digital revolution.

González-Mohino, M., Rodriguez-Domenech, M. Á., Callejas-Albiñana, A. I., & Castillo-Canalejo, A. (2023). Empowering critical thinking: The role of digital tools in citizen participation. *Journal of New Approaches in Educational Research*, 12(2), 258-275.

Graham, M. (2011). Time machines and virtual portals: The spatiality of the digital divide. *Progress in development studies*, 11(3), 211-227.

Graham, M.A., Kruger, G.M., & van Ryneveld, L. (2024). Developing a Novel Model for ICT Integration in South African Education: Insights from TIMSS. *Neveléstudomány*, doi: 10.3390/educsci14080865

Groff, J., & Mouza, C. (2008). A framework for addressing challenges in classroom technology use. *AACE Review (Formerly AACE Journal)*, 16(1), 21-46.

Guba, E. G. & Lincoln, Y (2005) 'Paradigmatic controversies, contradictions & emerging confluences' in *The Sage Handbook of Qualitative Research*, 3rd Edn. California: Sage.

Gumede, V., & Biyase, M. (2016). Educational reforms and curriculum transformation in post-apartheid South Africa. *Environmental Economics*, (7, Iss. 2), 69-76.

- Guo, Q., Everage, D., & Zhang, Q. (2024). *Hands-On Learning for Enhanced Thermodynamics Education With Refrigeration System Analysis*. <https://doi.org/10.1115/imece2024-145167>
- Hafifah, G. N., & Sulisty, G. H. (2020). Teachers' ICT Literacy and ICT Integration in ELT in the Indonesian Higher Education Setting. *Turkish Online Journal of Distance Education*, 21(13), 186–198.
- Haji, J. R., Shiyo, R. J., & Mrutu, N. (2023). Exploring effective ICT integration strategies in education: A case of two public primary schools in Mombasa, Kenya. *Journal of Education and Practice*, 7(7), 15.
- Halabi, L. and Hill, C. (2024). The Emerging Nature of ICT Policies in Education: A Comparative Analysis of School ICT Policies. doi: 10.1007/978-3-031-56121-4_14
- Hamaluba, T. (2022). An assessment of computer and ICT skills at Botswana Open University: Implications of ICT in business subjects.
- Handina, H., Rochintaniawati, D., & Nugraha, I. (2020). Students' environmental awareness in learning environmental pollution using instagram-mediated samr model.. <https://doi.org/10.4108/eai.12-10-2019.2296342>
- Hasan Emon, M. M. (2024). *Research Approach: A Comparative Analysis of Quantitative and Qualitative Methodologies in Social Science Research*. <https://doi.org/10.20944/preprints202412.1128.v1>
- Hennessy, S. (2010). Developing the use of Information Communication Technology to Enhance Teaching and Learning in East African Schools: A Review of Literature. Centre for Commonwealth Education, Aga Khan University. Institute for Educational Development, Eastern Africa.
- Hennessy, S., Harrison, D., & Wamakote, L. (2010). Teacher Factors Influencing Classroom Use of ICT in Sub-Saharan Africa.
- Hero, J. L. (2020). Teachers' Preparedness and Acceptance of Information and Communications Technology (ICT) Integration and Its Effect on their ICT Integration Practices. *Puissant A Multidisciplinary Journal*, 1, 59–76. <https://www.ssoar.info/ssoar/handle/document/76732>
- Hew, K. F., & Brush, T. (2007). Integrating technology into K-12 teaching and learning: Current knowledge gaps and recommendations for future research. *Educational technology research*

and development, 55, 223-252.

- Hidson, E. (2018). 2. Challenges to Pedagogical Content Knowledge in lesson planning during curriculum transition: a multiple case study of teachers of ICT and Computing in England..
- Hilton, J. (2016). Open educational resources and college textbook choices: A review of research on efficacy and perceptions. *Educational technology research and development*, 64, 573-590.
- Hlatshwayo, M. (2022). Online Learning during the South African Covid-19 Lockdown: University Students Left to Their Own Devices. *Education As Change*, 26. <https://doi.org/10.25159/1947-9417/11155>
- Hofer, M., & Grandgenett, N. (2012). TPACK development in teacher education: A longitudinal study of preservice teachers in a secondary MA Ed. program. *Journal of research on Technology in Education*, 45(1), 83-106.
- Horany, H. (2022). Managing the implementation of ICT in schools and its influence on the performance of school students. *Annals of the University of Oradea, Economic Science Series*, 31(1).
- Hottenrott, H. (2022). "Chapter 18: Financing constraints for innovation". In Elgar Encyclopedia on the Economics of Knowledge and Innovation. Cheltenham, UK: Edward Elgar Publishing. Retrieved Jul 16, 2025, from <https://doi.org/10.4337/9781839106996.00023>
- Howie, S. (2010). ICT-supported pedagogical policies and practices in South Africa and Chile: Emerging economies and realities. *Journal of Computer Assisted Learning*, 26(6), 507-522. <https://doi.org/10.1111/j.1365-2729.2010.00377.x>
- Hussain, H., Wen, J., Jiang, R., Waheed, J., Ali, W., & Khan, N. A. (2024). Analysing the role of ICT in bridging the digital divide: A transitional analytical framework for ICT access to impact. *Library Hi Tech*, 42(5), 1648-1668.
- Indah, W.P., and Pupung, P. (2024). Teacher's Perspective on the Use of ICT in the Classroom: Teacher Elementary School Context. doi: 10.35905/inspiring.v7i1.7096
- Jedrinović, S., Ferk Savec, V., & Rugelj, J. (2019). Innovative and flexible approaches to teaching and learning with ICT. In the *Digital Turn in Schools—Research, Policy, Practice: Proceedings of the ICEM 2018 Conference* (pp. 171-186). Springer Singapore.

- Jita, T., & Sintema, E. J. (2022). Exploring classroom use of ICT among pre-service science teachers in selected Southern SADC countries. *African Journal of Research in Mathematics, Science and Technology Education*, 26(3), 218-236.
- Johnson, R. B., and Christensen, L. B. (2024). Educational research: Quantitative, qualitative and mixed approaches. Sage publications.
- Johnstone. (2000). Qualitative Methods in Sociolinguistics. Oxford University Press.
- Jones, M., & McLean, K. (2012). Personalising learning in teacher education through the use of technology. *Australian Journal of Teacher Education (Online)*, 37(1), 75-92.
- Joseph, M. (2023). Why is digital citizenship essential? <https://districtadministration.com/why-is-digital-citizenship-essential-here-are-6-ways-to-start-the-conversation/>
- Jumde, A., Hazarika, I., & Akre, V. (2023, March). Challenges and Opportunities in Integrating Rapidly Changing Technologies in Business Curriculum. In 2023 International Conference on Computational Intelligence and Knowledge Economy (ICCIKE) (pp. 203-208). IEEE.
- Kabita, C., & Helmina, K. (2024). Teachers' attitudes towards the use of ict in education. doi: 10.58532/v3beso11p3chl
- Kafu-Quvane, B. and Chikoko, V. (2019). 4. Factors shaping teachers' experiences in managing teaching in the era of information and communication technology (ict) integration across the curriculum. doi: 10.21125/EDULEARN.2019.1027
- Kaffenberger, M. A. (2022). The Role of Purpose in Education System Outcomes: A Conceptual Framework and Empirical Examples.
- Kalafsky, R. V., & Raymond, M. (2025). International business education experiences through temporary learning environments: Evidence from Atlantic Canada. *Journal of International Education in Business*. <https://doi.org/10.1108/jieb-02-2024-0020>
- Kandel, G. (2022). Integration of information and communication technology in education: Opportunities and challenges. *Marsyangdi Journal*, 3(1), 82-90. <https://doi.org/10.3126/mj.v3i1.47954>

- Karagianni, E., & Drigas, A. (2023). New Technologies for Inclusive Learning for Students with Special Educational Needs. *International Journal of Online & Biomedical Engineering*, 19(5).
- Karpliuk, S., Moyseyenko, I., Lysenko, T., Moroz, O., & Протас, О. (2024). The role of ICT in education: Comparing virtual and traditional learning methods. *Multidisciplinary Reviews*, 8, 2024spe068. <https://doi.org/10.31893/multirev.2024spe068>
- Kaur, K. (2023). Teaching and learning with ICT tools: Issues and challenges. *International Journal of Cybernetics and Informatics*. <https://doi.org/10.5121/ijci>.
- Keane, J. (2002). Teacher vs. Computer. Where Educators Stand in the Technology Revolution. *T.H.E. Journal Technological Horizons in Education*, 30(1), 38. <https://www.questia.com/library/journal/1G1-108722700/teacher-vs-computer-where-educators-stand-in-the>
- Kell, C., Thandar, Y., Bhundoo, A. K., Haffejee, F., Mbhele, B., & Ducray, J. (2024). Academic integrity in the information age: Insights from health sciences students at a South African University. *Journal of Applied Research in Higher Education*. <https://doi.org/10.1108/jarhe-12-2023-0565>
- Kennedy, I and Cronjé, J. (2023). The Dynamics of Access to ICT and Technology Practices of Secondary School Teachers. *Electronic Journal of e-Learning*, doi: 10.34190/ejel.21.3.2999
- Kennedy, I., & Cronjé, J. (2024). Integration of ICT in Schools: Context-Aware ICT Appropriation (CAIA) Model. *Electronic Journal of E-Learning*, 22(8), 129–141. <https://doi.org/10.34190/ejel.22.8.3590>
- Kgosi, M. K., Makgato, M., & Skosana, N. M. (2023). Teachers' views on the application of educational technologies in the classroom: A case of selected Tshwane West secondary schools in Gauteng. *Journal of Curriculum Studies Research*, 5(2), 151-166.
- Kheswa, E, & Dlamini, Z. (2024). 2. An Assessment of Available Access to Technology in KwaZulu-Natal. doi: 10.29007/19kq
- Khine, L. (2006). Managing teachers' barriers to ICT integration in Singapore schools. *Journal of Technology and Teacher Education*, 14(1), 97-125.
- Kim, J., & Park, C. (2020). Education, skill training, and lifelong learning in the era of

- technological revolution: a review. *Asian-Pacific Economic Literature*, 34(2), 3–19. <https://doi.org/10.1111/apel.12299>
- Kimotho, J. W. (2016). *Determinants of digital innovation adoption by financial institutions in Kenya* (Doctoral dissertation, University of Nairobi).
- Kivunja, C. & Kuyini, A. B. (2017). Understanding and applying research paradigms in educational contexts. *International Journal of Higher Education*, 6(5), 26-41.
- Koc, M. (2005). Questioning technology use in educational reform: Ideological, theoretical, and practical perspectives. *Malaysian online journal of instructional technology*, 2(2), 72-81.
- Koehler, M., & Mishra, P. (2009). What is Technological Pedagogical Content Knowledge (TPACK)?. *Contemporary issues in technology and teacher education*, 9(1), 60-70.
- Koehler, M., Mishra, P., & Cain, W. (2013). What is technological pedagogical content knowledge (tpack)?. *Journal of Education*, 193(3), 13-19. <https://doi.org/10.1177/002205741319300303>
- Kola, J. (2013). *Effective Teaching and Learning in Science Education through Information and Communication Technology (ICT)*. <https://iosrjournals.org/iosr-jrme/papers/Vol-2%20Issue-5/H0254347.pdf?id=4045>
- Kosiorek, M. (2023). Forms of teacher resistance as a manifestation of civic engagement in the process of democratisation of education. doi: 10.5604/01.3001.0054.1667
- Krauss, N. a. (2014). The integration of ICT in marginalised schools in South Africa: Considerations for understanding the perceptions of in-service teachers and the role of training. 8th International Development Informatics Association Conference.
- Krisbiantoro, B., & Ashari, I. A. (2024). Evaluating the samr model for enhancing ict integration in english language teaching at the tertiary level: a systematic literature review. *FRASA : English Education and Literature Journal*, 5(2), 108–115. <https://doi.org/10.47701/frasa.v5i2.4027>
- Krishna, G. (2023). 3. Teachers' Experience of ICT Training for Professional Development. doi: 10.3126/kjmr.v1i1.61494
- Kritzinger, E. (2014). Online safety in South Africa: A cause for growing concern. *Information Security for South Africa*, 1–7. <https://doi.org/10.1109/ISSA.2014.6950502>

- Krutka, D. G., & Carpenter, J. P. (2017). Digital Citizenship in the Curriculum. In *Educational Leadership* (Vol. 75, Issue 3, p. 50). Association for Supervision and Curriculum Development (ASCD). <https://eric.ed.gov/?id=EJ1159339>
- Kumar, R., Singh, A., & Kumar, S. (2022). Role of technology in enhancing learning and teaching practices in the education sector. *Academy of Marketing Studies Journal*, 26(6).
- Kumari, D. (2024). National Education Policy 2020: A Transformative Shift in Education to Foster Critical Thinking among Students. *International Journal For Multidisciplinary Research*. <https://doi.org/10.36948/ijfmr.2024.v06i02.17721>
- Laurillard, D. (1999). A conversational framework for individual learning applied to the learning organisation and society. *Applying Systems Thinking to Higher Education*, 16(2).
- Lawley, B. (2020). *Bloom's Taxonomy*. <https://boisestate.pressbooks.pub/priorlearningportfolio/chapter/blooms-taxonomy/>
- Leatham, H., & Robertson, L. (2017). Student Digital Privacy in Classrooms: Teachers in the Crosscurrents of Technology Imperatives. *International Journal for Digital Society* (Vol. 8, Issue 1, p. 1260). <https://doi.org/10.20533/ijds.2040.2570.2017.0155>
- Leedy, P. D., & Ormond, J. E. (2005). Review of related literature. *Practical research: Planning and design*, 1(1), 64-84.
- Leedy, P. D., & Ormrod, J. E. (2010). *Practical research: Planning and design*. Pearson.
- Lestari, S. (2022). The use of the SAMR model to improve students speaking ability. *English Education Journal*, 12(4), 694-704. <https://doi.org/10.15294/eej.v12i4.70246>
- Lim, C. P., & Khine, M. (2006). Managing teachers' barriers to ICT integration in Singapore schools. *Journal of technology and Teacher Education*, 14(1), 97-125.
- Lincoln, Y. S., & Guba, E. G. (2000). Paradigmatic controversies, contradictions and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *The handbook of qualitative research* (2nd ed., pp. 163–188). Beverly Hills, CA: Sage
- Lix, L. M., Ahmed, N., Fung, D. L. X., Al-Azazi, S., & Hamm, N. C. (2024). Transparent reporting on multi-site studies of algorithms for linked health data: A systematic review of Health

- Data Research Network Canada's Algorithms Inventory. *International Journal for Population Data Science*, 9(5). <https://doi.org/10.23889/ijpds.v9i5.2800>
- Lloyd, M. (2005). Towards a definition of the integration of ICT in the classroom. In AARE 2005, AARE, Eds. Proceedings AARE 05 Education Research. New South Wales. Retrieved from <http://eprints.qut.edu.au/3553/1/3553.pdf>.
- Luhanya, A., Bakkabulindi, F. E. K., & Muyinda, P. B. (2017). Integration of ICT in teaching and learning: A review of theories. *Makerere Journal of Higher Education*, 9(1), 21-36.
- Luo, Y. (2023). Taiwanese parents' perspectives on young children's use of information communication technology. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1248863>
- Lyddon, P. (2019). A reflective approach to digital technology implementation in language teaching: Expanding pedagogical capacity by rethinking substitution, augmentation, modification, and redefinition. *Tesl Canada Journal*, 36(3), 186-200. <https://doi.org/10.18806/tesl.v36i3.1327>
- Ma, Y., & Sun, Y. (2022). An Interactive and Scenario-based Simulation Gaming System for Business Education using a Game Engine and Machine Learning. *Artificial Intelligence and Applications*. <https://doi.org/10.5121/csit.2022.121817>
- Makura, A. H. (2014). Students' perceptions of the use of ICT in a higher education teaching and learning context: The case of a South African University. *Mediterranean Journal of Social Sciences*, 5(11), 43-47.
- Malatji, E. (2023). Analysis of ramifications of power outages on online teaching and learning in south africa.. <https://doi.org/10.33422/9th.hsconf.2023.07.130>
- Malik, R. (2023, March). Impact of technology-based education on student learning outcomes and engagement. In *2023 10th International Conference on Computing for Sustainable Global Development (INDIACom)* (pp. 784-788). IEEE.
- Mangwegape, B. and Paseka, P. (2023). Exploring the integration level of information and communication technology (ICT) by Setswana student teachers at a university of technology in South Africa. *Education and new developments*, [doi: 10.36315/2023v1end036](https://doi.org/10.36315/2023v1end036)
- Manyonga, B., & Ngubane, S. (2021). Curriculum implementation and the right to education

during COVID-19 in South Africa.

Maree, K. (2007). First steps in the research. Van Schaik Publishers.

Marlatt, R. (2018). “i didn’t say, ‘macbeth,’ it was my google doc!”: A secondary English case study of redefining learning in the 21st century. *E-Learning and Digital Media*, 16(1), 46-62. <https://doi.org/10.1177/2042753018817544>

Masenya, T. M., & Ngulube, P. (2021). Digital preservation systems and technologies in South African academic libraries. *SA Journal of Information Management*, 23(1), 11. <https://doi.org/10.4102/SAJIM.V23I1.1249>

Matashu, M. (2023). Does primary and secondary education contribute to short- and long-term economic growth in South Africa? *Journal of Economic Development, Environment and People*, 12(2), 82–95. <https://doi.org/10.26458/jedep.v12i2.808>

Mbaleki, C., Elegbeleye, F. A., Esan, O. A., & Rabotapi, T. (2023). Power supply rationing in the era of e-learning: Evidence from a rural university. *EUREKA: Social and Humanities*, (6), 3-12.

McMillan, J. H., & Schumacher, S. (2010). Research in Education: Evidence-based Enquiry. pearson.

Melhuish, N., Spencer, K. C., Webster, A., & Spence, P. (2018). From Literacy to Fluency to Citizenship: Digital Citizenship in Education. In the SSRN Electronic Journal. RELX Group (Netherlands). <https://doi.org/10.2139/ssrn.3220745>

Memon, F. S., & Abdullah, F. (2024). Leveraging Case Studies in Business Education. *Advances in Human Resources Management and Organizational Development Book Series*, 11–30. <https://doi.org/10.4018/979-8-3693-3779-0.ch002>

Merriam, S. (2009). Qualitative research: A guide to design and implementation. San Francisco, CA: Jossey-Bass.

Mfaume, H. (2019). Awareness and use of mobile phones as potential pedagogical tools among secondary school teachers in Tanzania. *International Journal of Education and Development using ICT*,

Mgarbi, H., Chkouri, M. Y., & Tahiri, A. (2022). Purpose and Design of a Digital Environment for the Professional Insertion of Students Based on the E-Portfolio Approach. In *International Journal of Emerging Technologies in Learning (iJET)* (Vol. 17, Issue 1, p. 36). kassel university press. <https://doi.org/10.3991/ijet.v17i01.26703>

- Mijanović, N. V. (2023). Constructivism as a contemporary teaching paradigm. *Inovacije u nastavi-časopis za savremenu nastavu*, 36(1), 21-32.
- Miles, R. (2019). Ipads in the classroom: teachers' perspectives post-implementation. *Learning and Teaching in Higher Education Gulf Perspectives*, 16(1), 14-26. <https://doi.org/10.18538/lthe.v16.n1.321>
- Mirzajani, H., Mahmud, R., Ayub, A., & Wong, S. (2016). Teachers' acceptance of ICT and its integration into the classroom. *Quality Assurance in education*, 24(1), 26-40. <https://doi.org/10.1108/qaе-06-2014-0025>
- Mishol-Shauli, N., Shacham, M., & Golan, O. (2019). ICTs in religious communities: Communal and domestic integration of new media among Jewish ultra-Orthodox in Israel. *Learning in a networked society: Spontaneous and designed technology-enhanced learning communities*, 221-241.
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers college record*, 108(6), 1017-1054.
- Miyazoe, T. &. (2010). The Interaction Equivalency Theorem. *Journal of Interactive Online Learning*, 9(2), 94-104.
- Mlambo, S., Rambe, P., & Schlebusch, C. (2020). Effects of Gauteng province's educators' ICT self-efficacy on their pedagogical use of icts in classrooms. *Heliyon*, 6(4), e03730. <https://doi.org/10.1016/j.heliyon.2020.e03730>
- Moetlhoa, B. (2023). Barriers and enablers for implementation of 4ir-linked diagnostics models at point-of-care in south africa: stakeholder engagement.. <https://doi.org/10.21203/rs.3.rs-3034819/v1>
- Mohammadi, F., Abrizah, A., Nazari, M., & Attaran, M. (2015). What Motivates High School Teachers To Use Web-Based Learning Resources For Classroom Instruction? An Exploratory Case Study in an Iranian Smart School.
- Mohsin, S. (2024). Effects of Business Teachers Pedagogical Skills on Male and Female Students in Business Institutions of Lahore. *Bulletin of Business and Economics*. <https://doi.org/10.61506/01.00368>
- Moll, I. (2013). Learning and Computing: Theoretical Perspectives on the Pedagogic Integration

of ICT's. In McCabe,K.& Van Wyk,K.(Eds) Teaching and e-Learning in South African Schools:

- Moodley, K. (2023). Developing a framework for professional teacher technical identity development through mobile learning. *Progressio South African Journal for Open and Distance Learning Practice*. <https://doi.org/10.25159/2663-5895/12975>
- Morgan, H. (2022). Conducting a Qualitative Document Analysis. *The Qualitative Report*, 27(1), 64-77.
- Moslehi, S., Masoumi, G., Barghi-Shirazi, F., (2022). Benefits of simulation-based education in hospital emergency departments: A systematic review. *J Educ Health Promot*. Jan 31;11:40. doi: 10.4103/jehp.jehp_558_21. PMID: 35281376; PMCID: PMC8893067.
- Msila, V. (2015). Teacher readiness and information and communications technology (ICT) use in classrooms: A South African case study. *Creative Education*, 6(18), 1973-1981.
- Msomi, T.M. (2013). The experiences of teachers in designing assessment tasks for Business Studies in the FET and Training Phase. Unpublished Med Thesis. Faculty of Education, University of KwaZulu-Natal, Durban, South Africa.
- Mugambi, M. M. (2018). Linking constructivist theory to classroom practice. *International Journal of Humanities Social Sciences and Education*, 5(9), 96-104.
- Munje, P. N., Jita, T. (2020). 8. The Impact of the Lack of ICT Resources on Teaching and Learning in Selected South African Primary Schools. *International Journal of Learning, Teaching and Educational Research*, doi: 10.26803/IJLTER.19.7.15
- Mustafa, F., Nguyen, H. T. M., & Gao, X. A. (2024). The challenges and solutions of technology integration in rural schools: A systematic literature review. *International Journal of Educational Research*, 126, 102380.
- Nair, R. and Chuan, T. (2021). Integrating technology that uses the modified SAMR model as a pedagogical framework in evaluating learning performance of undergraduates. *The Educational Review Usa*, 5(10), 373-384. <https://doi.org/10.26855/er.2021.10.001>
- Ndlovu, N. S., & Lawrence, D. (2012). The quality of ICT use in South African classrooms. *Towards Carnegie III: Strategies to Overcome Poverty & Inequality*, Cape Town, 3-7.

- Ntsobi, M.P. (2022). Educators' perceptions and influences regarding ICT integration into teaching and learning in Gauteng public schools. MCET. <https://doi.org/10.55162/mcet.03.079>
- Nyathi, T., & Joseph, R. M. (2024). Empowering South African educators: Navigating the challenges of digital teaching and learning competencies. *SA Journal of Human Resource Management*, 22, 2591.
- Nyayu, S., Setiawan, H., & Sulaiman, M. (2019). The use of the technology integration SAMR model in teaching English. *Ideas Journal on English Language Teaching and Learning Linguistics and Literature*, 7(1). <https://doi.org/10.24256/ideas.v7i1.720>
- Odundo, P. A., & Gunga, S. O. (2013). Effects of the application of instructional methods on learner achievement in business studies in secondary schools in Kenya. *International Journal of Education and Research*, 1(5), 1-22.
- Ogenyi, F. C., Eze, V. H. U., & Ugwu, C. N. (2023). Navigating Challenges and Maximising Benefits in the Integration of Information and Communication Technology in African Primary Schools. *International Journal of Humanities, Management and Social Science (IJ-HUMASS)*. <https://doi.org/10.36079/lamintang.ij-humass-0602.599>
- Olatunji, O. (2017). Educators' Perspectives of Fair Performance Appraisal Practices in Gauteng Independent Schools (Master's thesis, University of Pretoria (South Africa)).
- Orhani, S., Kolukaj, M., Saramati, F., & Saramati, E. (2023). ICT as a didactic tool to facilitate the learning process in the subject of mathematics in combined classes. *International Journal of Innovative Research in Multidisciplinary Education*, 2(5), 184-193.
- Padayachee, K. (2017). A snapshot survey of ICT integration in South African schools. *South African Computer Journal*, 29(2). <https://doi.org/10.18489/sacj.v29i2.463>
- Pandey, G. P. (2024). Doing a Literature Review in English Language Teaching Research: Practical Suggestions. *Access : An International Journal of Nepal Library Association*, 3, 133–148. <https://doi.org/10.3126/access.v3i1.69429>
- Pandey, S. R. (2024). *Rummaging on a Research Method*. <https://doi.org/10.3126/jonk.v2i1.69661>
- Pele, N. V. (2014). Mediation of learning in business studies in the further education and training phase in the Lejweleputswa education district (Doctoral dissertation, Welkom: Central University of Technology, Free State).

- Pezo, E. (2024). 2. Adoption of ICT by Basic Education Teachers: A Systematic Review. *Journal of Namibian Studies : History Politics Culture*, doi: 10.59670/3tn2an17
- Pinar, W. F. (2021). Curriculum and the Covid-19 crisis. *Prospects*, 51(1), 299-311.
- Prasakti, A. W., & Idrus, A. (2024). The Importance of Entrepreneurship Education from an Early Age. *LADU: Journal of Languages and Education*. <https://doi.org/10.56724/ladu.v4i3.276>
- Pšenák, P., Pšenáková, I., Szabó, T., & Kováč, U. (2019, November). The interactive web applications in financial literacy teaching. In 2019, the 17th International Conference on Emerging eLearning Technologies and Applications (ICETA) (pp. 661-666). IEEE.
- Punch, M. (2009), *Politics and Ethics in Qualitative Research*. Handbook of Qualitative Research, Sage.
- Putri, F. Y., & Ilmi, D. (2023). Implementation of holistic learning strategies. *El-Rusyd : Jurnal Sekolah Tinggi Ilmu Tarbiyah STIT Ahlussunnah Bukittinggi*, 8(1), 63–70. <https://doi.org/10.58485/elrusyd.v8i1.140>
- Quadros-Flores, P., Flores, A., Ramos, A., & Peres, A. (2019, March). Made by them for them: The Students in the Learning Process. In *Conference Proceedings. New Perspectives in Science Education, 2019*.
- Rachman, D., Rochma, A., & Widiatmoko, P. (2022). EFL teachers' use of digital technology to facilitate m-learning. *Borneo Educational Journal (Borju)*, 5(1), 11-26. <https://doi.org/10.24903/bej.v5i1.1084>
- Rakhimzhanova, L.S.H. (2023). The use of multimedia technologies in robotics lessons for the development of cognitive activity. *ҚазҰҰ хабаршысы*, doi: 10.26577/jes.2023.v74.i1.014
- Ramaila, S., & Molwele, A. J. (2022). The Role of Technology Integration in the Development of 21st Century Skills and Competencies in Life Sciences Teaching and Learning. *International Journal of Higher Education*, 11(5), 9-17.
- Ramorola, M. Z. (2013). Challenges of effective technology integration into teaching and learning (Vol. 10, Issue 4, p. 654). Taylor & Francis.
- Rana, K., & Rana, K. (2020). ICT Integration in Teaching and Learning Activities in Higher Education: A Case Study of Teacher Education in Nepal. *Malaysian Online Journal of*

Educational Technology, 8(1), 36-47.

Rapanyane, M. B. (2024). *South African Basic Education System: Colonial Legacies in the Curriculum Design and a Way Forward*. <https://doi.org/10.17576/ebangi.2024.2102.35>

Reedy, A., Carmichael, K., & Kelly, O. (2020). Emergency responses to teaching, assessment and student support during the covid-19 pandemic. <https://doi.org/10.14742/ascilite2020.0138>

Rencewigg, R., & Joseph, N. P. (2024). Enhancing presentation skills: A comparative study of students' performance in virtual and physical classrooms. *Multidisciplinary Reviews*, 7(7), 2024156-2024156.

Richardson, J., Sales, G., & Sentocnik, S. (2015). Plans for embedding ICTs into teaching and learning through a large-scale secondary education reform in the country of georgia. *Fire Forum for International Research in Education*, 2(1). <https://doi.org/10.18275/fire201502011047>

Romrell, D., Kidder, L., & Wood, E. (2014). The samr model as a framework for evaluating m-learning. *Online Learning*, 18(2). <https://doi.org/10.24059/olj.v18i2.435>

Russell, Y. (2009). *New assessment methods in business studies in the FET phase* (Doctoral dissertation, University of South Africa).

Sabiri, K. A. (2020). ICT in EFL teaching and learning: A systematic literature review. *Contemporary Educational Technology*, 11(2), 177–195. <https://doi.org/10.30935/cet.665350>

Sagufta, Sahin. (2018). A critical survey on the involvement of ICT in the teacher training institutes of West Bengal. *International Journal of Advance Research, Ideas and Innovations in Technology*,

SasereI, O., and Makhasane, S. (2023). Adult learning theory tenets: A panacea to ICT skills gaps among educators in South Africa. *Journal of Education*, (92), 58-75. <https://doi.org/10.17159/2520-9868/i92a04>

Schreurs, J., & Dumbraveanu, R. (2014). A shift from a teacher-centred to a learner-centred approach.

Scheerens, J. (2016). An Overarching Conceptual Framework (pp. 3–25). Springer, Dordrecht. https://doi.org/10.1007/978-94-017-7459-8_1

- Sekwena, G. (2014). Active Learning in a high school Economics class: A framework for learner engagement. Master of Education Dissertation. University of Free State.
- Sepadi, M. D., & Molapo, K. (2024). Exploring teachers' understanding of curriculum and assessment policy statement document implementation in South African schools. *Frontiers in Education*, 9. <https://doi.org/10.3389/feduc.2024.1354959>
- Setiyawati, S., Basori, B., & Efendi, A. (2023). Substitution, Augmentation, Modification, and Redefinition (SAMR) Model to Improve Students' Critical Thinking Ability. *IJIE (Indonesian Journal of Informatics Education)*. <https://doi.org/10.20961/ijie.v7i1.60356>
- Shah, S. S. (2022). Teaching and learning with technology: Effectiveness of ICT integration in schools. *Indonesian Journal of Educational Research and Technology*, 2(2), 133-140.
- Shambare, B., & Jita, T. (2024, October). Understanding science teachers' TPACK for virtual lab adoption in rural schools in South Africa: a mixed-methods approach. In *Frontiers in Education* (Vol. 9, p. 1426451). Frontiers Media SA.
- Shamir-Inbal, T. & Blau, I. (2021). Characteristics of pedagogical change in integrating digital collaborative learning and their sustainability in a school culture: e-csamr framework. *Journal of Computer Assisted Learning*, 37(3), 825-838. <https://doi.org/10.1111/jcal.12526>
- Shamir-Inbal, T. and Blau, I. (2021). Digital competences and long-term ICT integration in school culture: the perspective of elementary school leaders. *Education and Information Technologies*, 22(3), 769-787. <https://doi.org/10.1007/s10639-015-9456-7>
- Sharma, U., & Bansal, D. (2017). Constructivism as a paradigm for teaching and learning. *International Journal of Physical Education, Sports and Health*, 4(5), 209-212.
- Shukla, A., & Yadav, B. K. (2019). A Study of ICT in Education: An Indian Perspective. *International Journal of Research*, 6(2), 33-45.
- Siddiqui, S. (2024). 1. ICT Tools in Education. *International Journal For Multidisciplinary Research*, doi: 10.36948/ijfmr.2024.v06i02.17712
- Simin, G., Thanusha, K., Logeswary, R., Annreetha, A. (2016). Teaching and Learning with ICT Tools: Issues and Challenges from Teachers' Perceptions. *Malaysian Online Journal of Educational Technology*, 4(2), 38-57

- Singh, M., Sharma, M., & Gupta, R. M. (2024). Awareness and extent of using ICT tools among school teachers in Punjab. *International journal of agriculture extension and social development*, doi: 10.33545/26180723.2024.v7.i3sc.480
- Sithole, B. M. (2012). A curriculum for vocational business subjects in Botswana junior secondary schools (Doctoral dissertation).
- Sithole, B. M. (2018). Making Group-work Work: Ideas for Teaching Business Studies Derived from Kagan's Cooperative Learning Structures. *INTERNATIONAL JOURNAL OF EDUCATIONAL SCIENCES*, 22(1-3), 11-18.
- Sithole, B. M., & Lumadi, M. W. (2012). Pedagogical challenges besetting Business Studies teachers in secondary schools: A Botswana perspective. *Journal of Social Sciences*, 32(1), 71-80.
- Smith, T. W., & Colby, S. A. (2007). U.S. Census Teaching for Deep Learning. *The Clearing House*, 205-210.
- Sithole, V. L., & Mbukanma, I. (2024). Prospects and Challenges to ICT Adoption in Teaching and Learning at Rural South African Universities: A Systematic Review. *Research in Social Sciences and Technology*, 9(3), 178-193.
- Sklyar, V. (2021). Business Analysis Learning Perspectives in ICT Education. In *ICTERI* (pp. 129-141).
- Slater, A. (2024). Essays on Innovation and Technological Change in South African Enterprises.
- Smith, T. W., & Colby, S. A. (2010). Perspectives on the decisions of researchers who examine the efficacy of the advanced certification system of the National Board for Professional Teaching Standards. *Studies in Educational Evaluation*, 36(4), 143-152.
- Statistics South Africa: <https://www.statssa.gov.za/>
- Steiner, D., & Mendelovitch, M. (2017). I'm the same teacher": The attitudes of science and computer literacy teachers regarding integrating ICT in instruction to advance meaningful learning. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(5), 1259-1282.
- Stumke, O. (2023). Information communication technology integration via Bloom's taxonomy in the accountancy curriculum. *Transformation in Higher Education*. <https://doi.org/10.4102/the.v8i0.283>

- Suwanbamrung, C. and Kaewsawat, S. (2020). Public health students' reflections on the first case of coronavirus disease 2019 in a university in southern Thailand. *Journal of Health Care and Research*, 1(3), 182-192. <https://doi.org/10.36502/2020/hcr.6177>
- Syafaruddin, S., Amiruddin, A., & Ibbat, A. (2024). Challenges and Strategies for Effective Resource Utilisation in Secondary Schools. *International Journal of Education, Language, Literature, Arts, Culture, and Social Humanities*, 2(2), 116–125. <https://doi.org/10.59024/ijellacush.v2i2.803>
- Tan, K. H., Ji, G., Lim, C. P., & Tseng, M. L. (2017). Using big data to make better decisions in the digital economy. *International Journal of Production Research*, 55(17), 4998-5000.
- Tarling, I., & Ng'ambi, D. (2016). Teachers pedagogical change framework: a diagnostic tool for changing teachers' uses of emerging technologies. *British Journal of Educational Technology*, 47(3), 554-572. <http://onlinelibrary.wiley.com/doi/10.1111/bjet.12454/full>
- Tashakkori, A., & Teddlie, C. (2009). Major issues and controversies in the use of mixed methods in the social and behavioural sciences. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioural research* (pp. 3-50). Thousand Oaks, CA: SAGE.
- Tayaban, A. D. (2022). Students' and Teachers' Perspectives on ICT Integration in the Learning Process During the Pandemic. *International Journal of Multidisciplinary: Applied Business and Education Research*, 3(12), 2622-2630.
- Tella, A. (2022). Teaching information literacy in Nigerian universities using advanced technologies. *Regional Journal of Information and Knowledge Management*, 7(2), 38-53.
- Thaanyane, M., & Jita, T. (2024). Pre-Service Teachers' Professional Competence in Integrating ICT in Business Education in Lesotho: A Systematic Literature Review. *International Journal of Learning, Teaching and Educational Research*, 23(4), 462-475.
- Thaanyane, M., & Jita, T. (2024). The Impact of ICT on Fostering Creativity in Business Education Pre-service Teachers: A Comprehensive Literature Review. *International Journal of Religion*, 5(12), 1132–1139. <https://doi.org/10.61707/wmpvv336>
- Thakral, P. (2015). Role of ICT in the professional development of teachers. *Learning Community- An International Journal of Educational and Social Development*, 6(1), 127-133.

- Theodorio, O.A. (2024). Examining the support required by educators for successful technology integration in teacher professional development programs. *Cogent Education*, doi: 10.1080/2331186x.2023.2298607
- Thomas, M., & Schmid, E. C. (2010). *Interactive Whiteboards for Education: Theory, Research and Practice*. <https://doi.org/10.4018/978-1-61520-715-2>
- Tikam, M. (2021). ICT integration in education: The Indian scenario. In *Human-Computer Interaction and Technology Integration in Modern Society* (pp. 1-11). IGI Global.
- Tirado-Morueta, R., García-Ruiz, R., Hernando-Gómez, Á., Contreras-Pulido, P., & Agüaded, I. (2022). The role of teacher support in the acquisition of digital skills associated with technology-based learning activities: moderation of the educational level. *Research and Practice in Technology Enhanced Learning*, 18, 10. <https://doi.org/10.58459/rptel.2023.18010>
- Tok, B. R., & Sora, M. (2013). Perspective of emerging integrating technology (ICT) in learning and teaching. *International Journal of Information and Education Technology*, 3(2), 282.
- Torres, A. (2023). Online teaching strategies: Lessons learned from the transition to virtual classrooms. *Asia-Pacific Journal of Convergent Research Interchange*, 9(6), 619-628. <https://doi.org/10.47116/apjcri.2023.06.48>
- Trichkova-Kashamova, E. (2021). *Portfolio Approach for Optimization the Usage of E-resources*. <https://doi.org/10.1109/ET52713.2021.9580123>
- Tseng., J. (2019). Do EFL teachers transform their teaching with iPads? a tpack-samr approach., 71-85. <https://doi.org/10.14705/rpnet.2019.28.871>
- Tunjera, N. and Chigona, A. (2020). Teacher educators' appropriation of TPACK-SAMR models for 21st century pre-service teacher preparation. *International Journal of Information and Communication Technology Education*, 16(3), 126-140. <https://doi.org/10.4018/ijicte.2020070110>
- Turza, C. (2023). *Process of Learning: Insights from Neuropsychology Studies and Asia-Pacific Perspectives* (pp. 1–25). https://doi.org/10.1007/978-981-16-2327-1_44-1
- Umar, Ibrahim., U, Isah., Ibrahim, J., A., Babawuro, Shuaibu., Musa, I., M. (2024). 1. Advancing Teachers' Professional Development: Exploring Models and Impact Assessment of ICT

- United Nations International Children's Emergency Fund. (2021). Learners in South Africa up to one school year behind where they should be. Retrieved 12 May, 2024, from <https://www.unicef.org/southafrica/press-releases/learners-south-africa-one-school-year-behind-where-they-should-be>
- Vahedi, Z., & Zannella, L. (2021). Students ' use of information and communication technologies in the classroom : Uses, restriction, and integration. *Active Learning in Higher Education*, 22(3), 215–228. <https://doi.org/10.1177/1469787419861926>
- Valente, S., Monteiro, A. P., & Lourenço, A. A. (2018). The relationship between teachers' emotional intelligence and classroom discipline management. *Psychology in the Schools*, 56(5), 741-750. <https://doi.org/10.1002/pits.22218>
- Valtonen, T., Leppänen, U., Hyypiä, M., Kokko, A., Manninen, J., Vartiainen, H., Sointu, E., & Hirsto, L. (2021). Learning environments preferred by university students: A shift toward informal and flexible learning environments. *Learning Environments Research*, 24(3), 371–388. <https://doi.org/10.1007/s10984-020-09339-6>
- Van Der Ross, D. Tsibolane, P. (2017). 5. The Influence of Teacher Attitudes and Beliefs on Information and Communications Technology Integration Behavior in South African High Schools.
- Van Slyck, M. R., Nelson, L. L., Foster, R. H., & Cardella, L. A. (2019). Peace education and conflict resolution curricula for middle school students. *Scholarly Journal of Psychology and Behavioral Sciences*, 2(3), 184-194.
- Vásquez, G. (2023). Diseño didáctico de aprendizaje basado en la web para entrenamiento docente en incorporación de tecnología a la clase de inglés. *Praxis*, 19(2), 287-305. <https://doi.org/10.21676/23897856.4979>
- Voogt, J., Fisser, P., Pareja Roblin, N., Tondeur, J., & van Braak, J. (2013). Technological pedagogical content knowledge: A review of the literature. *Journal of computer assisted learning*, 29(2), 109-121.
- Wahyudi, R. (2023). The samr model for the development of learning device innovations in the subject of applying electronic circuits. *Jurnal Inovasi Dan Teknologi Pembelajaran*, 10(3), 234. <https://doi.org/10.17977/um031v10i32023p234>

- Wahyuni, S., Mujiyanto, J., Rukmini, D., & Fitriati, S. (2020). Teachers' technology integration into english instructions: samr model.. <https://doi.org/10.2991/assehr.k.200620.109>
- Walters, A. G. (2021). *Classroom Management 3.0: Moving From Now to Next* (pp. 185–202). IGI Global. <https://doi.org/10.4018/978-1-7998-6803-3.CH009>
- Wang, J., Zhou, H., Chen, S., Tong, H., & Yang, Y. (2024). How teachers support secondary school students to become self-regulated learners in technology-enhanced language learning. *System*. <https://doi.org/10.1016/j.system.2024.103313>
- Watson, J. (2008). Blended Learning: The Convergence of Online and Face-to-Face Education. Promising Practices in Online Learning. *North American Council for Online Learning (NACOL)*.
- Wilson-Strydom, M., Thomson, J., & Hodgkinson-Williams, C. (2005). Understanding ICT integration in South African classrooms: Research: Information and communication technologies. *Perspectives in education*, 23(1), 71-85.
- Wilson, J. (2014). *Essentials of business research: A guide to doing your research project*.
- Yasa, I. M. A., Agung, A. A. G., & Sulindawati, N. L. G. E. (2023). Transformation of Professionalism in the World of Education: Effective Management Strategies for Developing the Behaviour and Competence of Educational and Teaching Personnel. *Jurnal Syntax Admiration*, 4(10), 1849-1864.
- Yelland, N., Neal, G., & Dakich, E. (2008). *Rethinking Education with ICT: New Directions for Effective Practices*. <https://doi.org/10.1163/9789087902810>
- Yilmaz, Z., Williams, K., Alegre, F., & Kendrick, R. (2023, June). Teachers' Understanding of Synergies Between Computational and Mathematical Thinking after a Summer Professional Development. *Proceedings of the Asia-Pacific Society for Computers Education International Conference on Computational Thinking and STEM Education 2023 (CTE-STEM 2023)*.
- Yoffie, D.B., Jain, K., Villasenor, A., Xu, V., and Yang, A. (2020). *Extended Reality Extends into Enterprises?* Harvard Business School Case 720-472, June
- Zarabanda, D. E. B. (2019). ICT and its purpose in pedagogical practice. *Research in Social Sciences and Technology*, 4(2), 83-95.

APPENDICES

Appendix A: Turnitin Report Summary

Sydney Xolani Noyile (883337)
Turnitin Report:
Supervisor: *[Signature]*

XS Noyile Masters-1.docx

ORIGINALITY REPORT

12%	7%	10%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	wiredspace.wits.ac.za Internet Source	1%
2	Submitted to AUT University Student Paper	1%
3	uir.unisa.ac.za Internet Source	1%
4	hdl.handle.net Internet Source	1%
5	Sarah, Mafampe Mokware. "The Implementation of Information Communication Technology for Teaching and Learning in Tshwane West District.", University of Pretoria (South Africa), 2024 Publication	<1%
6	ujcontent.uj.ac.za Internet Source	<1%
7	researchspace.ukzn.ac.za Internet Source	<1%

Appendix B: University ethics clearance

SCHOOL OF EDUCATION ETHICS COMMITTEE

CONSTITUTED UNDER THE UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)

CLEARANCE CERTIFICATE

PROTOCOL NUMBER: 2020ECE180M

PROJECT TITLE

Exploring the integration of into the pedagogy of Business Studies in schools in Soweto

INVESTIGATOR

XOLANI SYDNEY NOYILE

SCHOOL/DEPARTMENT OF INVESTIGATOR

DATE CONSIDERED

15 February 2021

DECISION OF THE COMMITTEE

Approved unconditionally

RISK LEVEL

MINIMAL

EXPIRY DATE

Date of submission of the Research Report

ISSUE DATE OF CERTIFICATE

26 July 2021

CHAIRPERSON

Dr. Paul Goldschagg



cc: Dr Beverley Blake

DECLARATION OF INVESTIGATOR

To be completed in duplicate and **ONE COPY** returned to the Chairperson of the School/Department ethics committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.



Signature

Date 27/07/2021

Appendix C: GDE clearance letter.



GAUTENG PROVINCE

Department: Education
REPUBLIC OF SOUTH AFRICA

8/4/4/1/2

GDE RESEARCH APPROVAL LETTER

Date:	01 March 2021
Validity of Research Approval:	08 February 2021– 30 September 2021 2019/400A
Name of Researcher:	Noyile XS
Address of Researcher:	108A Sibeko Street Zola 3 1868
Telephone Number:	061 840 9977
Email address:	Xs.noyile@gmail.com
Research Topic:	Exploring ICT pedagogic integration of Business Studies teachers in four schools in Soweto
Type of qualification	Master of Education
Number and type of schools:	4 Secondary School
District/s/HO	Johannesburg Central

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved to conduct the research. A separate copy of this letter must be presented to both the School (both Principal and SGB) and the District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted.

The following conditions apply to GDE research. The researcher may proceed with the above study subject to the conditions listed below being met. Approval may be withdrawn should any of the conditions listed below be flouted:

1. Letter that would indicate that the said researcher/s has/have been granted permission from the Gauteng Department of Education to conduct the research study.

1

Making education a societal priority

Office of the Director: Education Research and Knowledge Management

7th Floor, 17 Simmonds Street, Johannesburg, 2001

Tel: (011) 355 0488

Email: Faith.Tshabalala@gauteng.gov.za

Website: www.education.gpg.gov.za

Appendix D: Research Tools

PROPOSED INTERVIEW QUESTIONS FOR TEACHERS

1. Did you get exposed to ICT knowledge as a pre-service or in-service teacher?
2. Which technology/technologies do you use in your classroom for teaching and learning?
3. How do you utilise this/ these technology(ies) which you mentioned above?
4. How often do you utilise this/ these technology(ies) mentioned earlier on?
5. What are the benefits of utilising ICT in your lessons?
6. What challenges do you often face when integrating digital technologies into teaching and learning?
7. Is the South African CAPS curriculum clear on how technologies ought to be integrated into teaching and learning?
8. Does your school have a policy on ICT? Have you read it?
9. Have you read the Department of Education policies on ICT or your school policy?
10. Are there any other details which you feel I have left out which may be related to the integration of ICT in the classroom?

LETTER TO THE PRINCIPAL

Dear Sir/Madam,

My name is Sydney Xolani Noyile. I am a Master of Education (M. Ed.) student. in the School of Education at the University of Witwatersrand. The title of my study is **‘Exploring ICT integration into the pedagogy of Business Studies in Johannesburg Central District**

My research focuses on identifying, understanding, and exploring teaching practices used in the teaching of high school Business Studies in an ICT school in Soweto. From the literature reviewed it is evident that there is limited research that has been done on schools which are

categorised as Full ICT by the Gauteng Department of Education (GDE). In addition, there are few studies in South Africa that have focused on teacher practices used in the teaching of high school Business Studies when ICT is integrated into the lesson. Most studies appear to focus on the challenges, experiences, and affordances of ICT while ignoring the teacher practices in the classroom which are a primary avenue to teaching and learning.

I intend to observe and interview one teacher who has been oriented through professional development workshops on the use of smartboards and is currently teaching Business Studies. The reason I have chosen your school is that it is fully endowed with ICT infrastructure. Your school also meets the criteria of my research sample, as it offers Business Studies. I am inviting your school to participate in this research, the findings of which will be beneficial to the school and the Department of Education.

The research participants will not be advantaged or disadvantaged. Face-to-face interviews and document analysis will be used to collect data. Participants will be reassured that they can withdraw their permission at any time during the project without any penalty. There were no foreseeable risks associated with participation in this study. Participants will not be paid for this study.

The names of the research participants and the identity of the school will be kept confidential at all times and in all academic writing about the study. Your individual privacy will be maintained in all

published and written data resulting from this study. All research data will be destroyed–3-5 years after project completion. Please inform me if you require any further information. I look forward to your response at your earliest convenience.

Yours sincerely,

Sydney Xolani Noyile

108A Sibeko Street, Zola 3

Soweto

Email: xs.noyile@gmail.com

Contact No: 061 840 9977

DECLARATION

I _____ (Name and surname of Principal) hereby confirm that I understand the contents of this document and the nature of the research project, and I agree that my school may participate in the research project.

SIGNATURE OF PRINCIPAL _____

DATE _____

LETTER TO THE TEACHER

Dear Sir/Madam,

My name is Sydney Xolani Noyile. I am a Master of Education student (M.Ed.) in the School of Education at the University of the Witwatersrand. The title of my study is **‘Exploring ICT integration into the pedagogy of Business Studies in Johannesburg Central District**

My research focuses on identifying, understanding and exploring teaching practices used in the teaching of high school Business Studies in an ICT school in Soweto. From the literature reviewed it is evident that there is limited research that has been done on schools which are

categorised as Full ICT by the Gauteng Department of Education. In addition, there are few studies in South Africa that have focused on teacher practices used in the teaching of high school Business Studies when ICT is integrated to the lesson. Most studies appear to focus on challenges, experiences and affordances of ICT while ignoring the teacher practices in the classroom which are a primary avenue to teaching and learning.

I intend to observe and interview you as a teacher who has been oriented through professional development workshops on the use of smartboards and is currently teaching Business Studies. The reason I chose you is that your school is fully endowed with ICT infrastructure. Your school also meets the criteria of my research sample as it offers Business Studies. I am inviting you to participate in this research, the findings of which will be beneficial to the school and the Department of Education.

You will not be advantaged or disadvantaged in any way by your decision. Face-to-face interviews and document analysis will be used to generate data. As a participant, you are reassured that you can withdraw your permission at any time during this project, without any penalty. There are no foreseeable risks in participating in this study. You will not be paid for participating in this study.

Your name, identity, and the identity of the school will be kept confidential at all times and in all academic writing about the study. Your individual privacy will be maintained in all published and written data resulting from the study. All research data will be destroyed between 3-5 years after completion of the project. Please let me know if you require any further information. I look forward to your response as soon as is convenient.

Yours sincerely,

Sydney Xolani Noyile

108A Sibeko Street, Zola 3

Soweto

Email: xs.noyile@gmail.com

Contact No: 061 840 9977

DECLARATION

I _____ (Name and surname of Teacher)
hereby confirm that I understand the contents of this document and the nature of the research
project, and I agree that my school may participate in the research project.

SIGNATURE OF TEACHER _____

DATE _____

Teacher's Consent Form

Please fill in and return the reply slip below indicating your willingness to be a participant in my voluntary research project called: **Exploring ICT pedagogic integration of Business Studies teachers in three schools in Soweto.**

I, _____ give my consent for the following:

(Please circle on Yes or No as your response to the following)

Permission to be interviewed

I would like to be interviewed for this study. YES/NO

I know that I can stop the interview at any time and don't have to

All questions were answered. YES/NO

Permission to be audiotaped

I agree to be audiotaped during the interview session YES/NO

I know that the audiotapes will be used for this project only YES/NO

Permission to be observed and video recorded

I would like to be observed in this study. YES/NO

I know that I can stop the observation at any time YES/NO

Informed Consent

I understand that:

- My name and information will be kept confidential and safe, and my name and the name of my school will not be revealed.
- I do not have to answer every question and can withdraw from the study at any time.
- I can ask not to be audiotaped, photographed and/or videotape
- All data collected during this study will be destroyed within 3-5 years after the completion of the project.

Sign_____

Date_____

INTERVIEW QUESTIONS FOR TEACHERS

Section A: Biographical Information

- A. **Gender:** M / E
- B. **Age:** 21-29 30-39 40-49 50-65 Above 65
- C. **Experience in teaching (years)** _____
- D. **Qualifications:**

Section B: Interview questions

1. Did you get exposed to ICT knowledge as a pre-service or in-service teacher?
2. Which technology/ technologies do you use in your classroom for teaching and learning?
3. How do you utilise this/ these technology(ies) which you mentioned above?
4. How often do you utilise this/ these technology(ies) mentioned earlier on?
5. What are the benefits of utilising ICT in your lessons?
6. What challenges do you often face when integrating digital technologies to teaching and learning?

7. Is the South African CAPS curriculum clear on how technologies ought to be integrated into teaching and learning?
8. Does your school have a policy on ICT? Have you read it?
9. Have you read the department of Education policies in ICT or your school policy?
10. Are there any other details which you feel I have left out which may be related to the integration of ICT in the classroom?

Dear Parent/ Guardian

My name is Sydney Xolani Noyile. I am a Master of Education student (M.Ed.) in the School of Education at the University of the Witwatersrand. The title of my study is **‘Exploring ICT pedagogic integration of Business Studies teachers in three schools in Soweto’**.

I am pleased to inform you that the school your child attends meets the requirements of my research on ICT integration in teaching. For this reason, I chose this school to conduct my research.

While you will not be directly involved in this study, I will be observing your child’s teacher while teaching them in the classroom. The aim of my study is to determine how they use ICT in the classroom to teach Business Studies as an FET subject. My research focuses on identifying, understanding and exploring teaching practices used in the teaching of high school Business Studies in an ICT school in Soweto. In other words, the focus will be more on how the teacher teaches the child’s class using ICT and how the learners as a whole respond to the teaching strategy which integrates ICT.

Your child is a member of the classroom in which I will be observing the teacher. Your child **IS NOT** the focus of the study, but the teacher who teaches the class. Your child will not be advantaged or disadvantaged in any way. They will be reassured that they can withdraw their permission at any time during this project without any penalty.

By agreeing to the above, you will not be putting your child at any risk, but you will only be agreeing that I, as the researcher, can be in the same classroom as your child in the presence of his/her teacher as well as other learners while they are being taught; you will be granting me permission to observe his/her teacher while he/she teaches the entire class. In addition, by agreeing to this, you will be granting me the right to use a video recorder which will only focus on capturing ICT interactions that will occur during the lesson, mostly by the teacher during the teaching process. As mentioned earlier, the identity of your child will not be revealed at any point of this study; therefore, the camera will be positioned at the back of the classroom which will allow the video not to capture the faces of the learners.

There are no foreseeable risks associated with participation, and your child will not be paid for participating in this study. Your child's name and identity will be kept confidential at all times and in all academic writings about the study. Individual privacy will be maintained in all published and written data resulting from the study. All research data will be destroyed between 3-5 years after completion of the project.

Please let me know if you require any further information.

Thank you for your consideration.

Yours sincerely,

Sydney Xolani Noyile
108A Sibeko Street, Zola 3
Soweto
Email: xs.noyile@gmail.com
Contact No: 061 840 9977

DECLARATION

I _____ (Name and surname of Parent/
Guardian), the parent of (name and surname of learner)
_____ hereby confirm that I understand the contents of
this document and the nature of the research project, and I agree that my school may participate in
the research project.

SIGNATURE OF PARENT/ GUARDIAN _____

DATE _____

PARENT'S CONSENT FORM

Please fill in the reply slip below if you agree to participate in my study called: **'Exploring ICT pedagogic integration of Business Studies teachers in three schools in Soweto'**.

My name is: _____ and I am the Parent/ Guardian
to _____

NB: Please Circle Yes/No

Permission for my child to be in class while the researcher is observing the teacher while teaching a lesson in Business Studies.

I agree that my child may be involved in the teacher's session, while the researcher is in class observing the teacher.

YES/NO

Permission to be videotaped

I agree that the researcher may videotape the teacher's lesson while my child is in class.

YES/NO

I know that the videotapes will be used only for this project.

YES/NO

I know that my child's face will not be shown in the videotape

YES/NO

Informed Consent

I understand that:

- My name and information will be kept confidential and safe and that my name and the name of my school will not be revealed.

- I do not have to answer every question and can withdraw from the study at any time.
- I can ask not to be audiotaped, photographed and/or videotape
- All data collected during this study will be destroyed within 3-5 years after the completion of my project.

Sign_____

Date_____

Dear Learner,

My name is Sydney Xolani Noyile. I am a Master of Education student (M.Ed.) in the School of Education at the University of the Witwatersrand. The title of my study is **‘Exploring ICT pedagogic into the pedagogy of Business Studies in Johannesburg Central District**

Although you will not be directly involved in this study, I will be observing your Business Studies teacher while teaching you in the classroom. The interest of my study is to find out how your teacher uses ICT in the classroom to teach Business Studies as an FET subject. My research focuses on identifying, understanding and exploring teaching practices used in the teaching of high school Business Studies in an ICT school in Soweto.

I would like to video record a lesson during which your Business Studies teacher will be teaching you. Should you feel uncomfortable in the course of my presence in your classroom to observe the teacher, you are at liberty to excuse yourself and leave the classroom.

Your face will not be shown in the video. Should the angle of the video mistakenly capture your face, I will use Google editing tools to blur out your face during my data analysis. All information about you will be kept confidential in all my writings about the study. In addition, all collected information will be stored safely and destroyed between 3-5 years after I have completed my project. Your parents have also been provided with an information sheet and consent form. However, it is your decision, since you will be in the classroom when I come to observe your teaching.

I look forward to your response.

Please feel free to contact me through your teacher if you have any questions regarding this.

Thank you in advance

DECLARATION

I _____ (name and surname of learner) hereby confirm that I understand the contents of this document and the nature of the research project, and I **AGREE** / **DO NOT AGREE** that I may be in the classroom while the researcher is observing the teacher during the lesson of Business Studies and video record the lesson.

SIGNATURE OF LEARNER _____

DATE _____

LEARNER'S ASCENT FORM

Please fill in the reply slip below if you agree to participate in my study called: **'Exploring ICT into the pedagogy of Business Studies in Johannesburg Central District**

My name is: _____

NB: *Please Circle Yes/No*

Permission to observe your teacher in class, while you participate in the lesson

I agree to be involved in the teacher's session while the researcher is in class. **YES/NO**

Permission to be videotaped

I agree to being videotaped in class. **YES/NO**

I know that the videotapes will be used for this project only. **YES/NO**

Informed Ascent

I understand that:

- My name and information will be kept confidential and safe and that my name and the name of my school will not be revealed.
- I do not have to answer every question and can withdraw from the study at any time.
- I can ask not to be audiotaped, photographed and/or videotape
- All the data collected during this study will be destroyed within 3-5 years after completion of my project.

Sign_____ **Date**_____