TEACHERS' PERCEPTIONS OF SECONDARY SCHOOLS' LEARNERS' USE OF SMARTPHONES AND TABLETS FOR LEARNING IN VHURONGA 2 CIRCUIT

by

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DECLARATION

I, **PHULUSO RAMATSITSI**, hereby declare that the proposal entitled**:**

"Teachers' Perceptions of Learners' use of Smartphones and Tablets for Learning in Vhuronga 2 Circuit"

… is my own work and has not previously been submitted for a degree at this or any other university. All sources that I have consulted or quoted have been clearly indicated and acknowledged by means of complete references.

Signature:  **Date: 04.10.2025**

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DEDICATION

This dissertation is dedicated to my family for their encouragement during my studies. They provided physical, emotional and prayerful support throughout the study.

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- Immeasurable appreciation and deepest gratefulness to God Almighty, for without his grace and blessings, this study would not have been possible.
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ABSTRACT

Smartphones and tablets are gradually becoming crucial learning tools to enhance teaching and learning. Their usage ensures flexibility in course delivery, allowing learners to access online learning platforms, course resources, and interact digitally. Research into teachers' perceptions of the usage of smartphones and tablets in learning is still in its infancy in South Africa, and this paper attempted to fill in this gap by examining teachers' perceptions towards the use of these devices for the purposes of learning. This study used grounded theory's Technology Acceptance Model. The target population for this study comprised Vhembe West District, Vhuronga 2 Circuit teachers, principals and learners. This was a qualitative study that involved three principals, three teachers, and three learners, who shared their opinions on learners' use of smartphones and tablets in learning. The research data collected from the participants were thematically analysed. The study revealed positive attitudes among teachers, highlighting their recognition of the potential benefits, such as increased learner engagement and access to educational resources. It provided insights into how teachers integrate these devices into their teaching practices, uncovering innovative strategies and instructional approaches. Additionally, the research identified barriers and challenges that hinder successful integration, informing strategies to address them and identifying teachers' professional development needs. The findings can have policy implications, guiding the development of guidelines or policies regarding device management and internet safety.

Keywords: e-Learning, Smartphones, Tablets, Technology-Enhanced Learning, Online Learning and Remote Learning

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LIST OF ACRONYMS

BYOD : Bring Your Own Device
DBE : Department of Education
EMB : Education and Manpower Bureau
ICT : Information Communication Technology
ISTE : International Society for Technology in Education
LMS : Learning Management System
MOE : Ministry of Education
PEU : Perceived Ease of Use
PU : Perceived Usefulness
TEL : Technology Enhanced Learning
TMA : Technology Acceptance Model

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CHAPTER 1

BACKGROUND, PROBLEM FORMULATION AND OBJECTIVES

1.1. INTRODUCTION

Advanced technologies are growing day by day, and every day new applications are developed for users. According to Nwachukwu and Onyenankeya (2017), over one billion people worldwide own mobile phones, using them for apps, internet access, communication, and digital media consumption. People around the world have adopted this new and exciting technology as one of the most important devices in their everyday lives (Fook, Narasuman, Aziz & Han, 2021).

The modern smartphone can trace its origins back to the early 1990s, when mobile phones started to incorporate more advanced computing capabilities beyond just voice calls (Fling, 2009). The first devices that could be considered early prototypes of smartphones were introduced in the mid-to-late 1990s, such as the IBM Simon Personal Communicator and the BlackBerry 850 (Sam-Epelle & Appiah, 2019). However, the real breakthrough in smartphone technology came with the introduction of the Apple iPhone in 2007(Aldhabi, Daim, Harmon & Basoglu, 2020).

The iPhone revolutionised the mobile device market by integrating a large touchscreen display, an intuitive user interface, and robust mobile computing power into a sleek, handheld form factor (West & Mace, 2010). According to West and Mace (2010), the iPhone's debut set a new standard for what a smartphone could be. In the years that followed, other major technology companies such as Google, Samsung, and Microsoft introduced competing smartphone platforms and devices, accelerating innovation across the industry. This competition sparked a rapid evolution in smartphone hardware and software capabilities, leading to high-resolution cameras, expansive mobile app ecosystems, mobile internet access, GPS navigation, and integrated voice assistants becoming standard features on subsequent generations of smartphones.

Sam-Epelle and Appiah (2019) stated that smartphones became more ubiquitous and technologically advanced; they also became deeply integrated into many aspects of

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daily life, from communication and information access to entertainment and productivity. The proliferation of smartphones has transformed how people interact with technology and with each other in the modern digital age. Today, smartphones are an indispensable part of the lives of billions of people worldwide. The continuous innovation in smartphone technology shows no signs of slowing down, as these devices continue to evolve and become even more capable, connected, and essential.

Ali, Khan and Hussain (2021) in the early 2000s stated that schools began experimenting with personal digital assistants and early tablet devices, but these initial efforts were limited. The introduction of the iPhone in 2007 and the subsequent proliferation of smartphones sparked renewed interest in mobile technology for learning, as schools started exploring how to leverage these ubiquitous devices. The launch of the iPad in 2010 and the rise of other tablets further accelerated the adoption of mobile devices, with many schools implementing one-to-one tablet programmes.

As smartphones and tablets became more affordable and technologically advanced, their integration into classroom instruction and activities became more widespread, with schools exploring various educational use cases (Moraes, Zimpeck, Meinhardt & Reis, 2019). However, Moraes,et.al(2009) stated that the increased presence of mobile devices also raised concerns about potential challenges, such as device-related distractions and digital divides, leading teachers and policymakers to develop appropriate policies and guidelines. Today, the adoption of smartphones and tablets in schools continues to evolve, with ongoing research and experimentation aimed at finding the most effective ways to integrate these devices into teaching and learning practices.

The quality of online learning in places like Singapore is tied closely to the development of quality digital resources for education (Ali, Khan & Hussain, 2021). An initiative to allow the sharing of useful digital resources among Singapore schools caused the development of common e-learning standards so that they facilitate interoperability in the exchange of content and meet common taxonomy standards (Kong, Looi, Chan & Huang, 2017). As a follow-up to this development, Singapore is currently looking into a framework for the development of digital content, including e-Learning resources. The initiative will provide a set of guidelines to facilitate and

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ensure the development of quality digital content by commercial vendors. Also, the Ministry of Education (MOE) has a website of digital teaching and learning resources to ensure that these are pedagogically sound and easily available to teachers.

E-Learning in Hong Kong enables learners to engage in collaboration, inquiry, and projects at any time, from anywhere (Wong, Li, Wong & Yau, 2019). They added that it is stipulated in the new IT in Education Strategy Policy Document "Empowering Learning and Teaching with Information Technology" published by the Education and Manpower Bureau (EMB) in July 2004 that suitably designed e-Learning platforms should support the above-mentioned learning activities, which will be provided for all primary and secondary schools. The Government funds all public sector schools in Hong Kong, and learners are not required to pay extra for taking any e-Learning course or using e-Learning materials offered by their schools (Mseleku, 2020).

Online learning is new to the East African country of Tanzania; hence, in most schools, colleges, and universities, online learning is non- existent. In rural areas of Tanzania, there is no electricity, which makes it extremely difficult to access the internet (Mtebe & Raphael, 2018). One of the major universities, St. Augustine University of Tanzania, is leading the way in this field by learners participating in online discussions and posting course materials and resources on the internet (Semlambo, Sengati & Angalia, 2022). Machumu, Josephaty, Zhu and Anania (2022) added that learners can access the internet from urban centres to conduct research and complete their studies. Several teachers in Tanzania have participated in courses offered by iEARN, which has prompted a proposal to train teachers to use computers and the internet in their classrooms. Authorities want to create an online teachers' forum to facilitate discussions, and to share lessons, ideas, and resources on different topics. However, the schools must obtain computers and internet access before they can operate (Mtebe, 2020). At present, most schools have one computer, and most people in Tanzania go to internet cafes to access the internet.

Similarly, e-Learning in Zimbabwe has not been formally institutionalised (Nyathi, 2023), although the National University of Science and Technology's ICT Department has installed a Learning Management System (LMS) on the University's server to introduce e-Learning. Teachers and lecturers in Zimbabwe are working with iEARN

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and have managed to convince the University to allow them to pilot the use of the software on the University's intranet (Nyathi, 2023). Now, lecturers and learners in a few departments are involved in the training, which has resulted in the development of an online learning pilot programme (Nyathi, 2023). Training is currently being offered for lecturers at the National University of Science and Technology. Zimbabwe is looking forward to collaborating with other countries in developing training for teachers and in designing an online education programme. Their current focus, therefore, is to continue using emerging and existing technologies.

In South Africa, as in many developing countries, eLearning has become a critical part of the national effort to enhance higher education quality. As stated by Maphalala and Adigun (2021), eLearning is a necessity in Higher Education Institutions (HEIs) and is deployed in educational establishments throughout the world, through the online Learning Management Systems (LMS). Ansary (2025) views the internet as a perfect tool for learning, as it offers learners expediency and flexibility, while at the same time, contributing endless innovative opportunities in teaching.

Technology's impact, in general, on teaching and learning, and on higher education, is still unclear; therefore, it is open to much research and debate (Guri-Rosenblit, 2018). It is argued that learners ought to be at the centre of decision-making at universities, in areas such as pedagogy and curriculum design, while they should also be seen as knowledge creators (Guri-Rosenblit, 2018). Nevertheless, a disconnect is evident between the way learners interact with and experience technology in their social and personal lives and how technology is used in their learner roles. On the one hand, many young learners use new technologies for various purposes, such as downloading music files, chatting with friends, playing complex video games, and even preparing presentations; however, most do not know how, or are unwilling to study extensively through electronic media (Letseka, Letseka & Pitsoe, 2018).

Research by Zhang, Li and Deng (2017) reveals that teachers who had witnessed improvements in their learners' engagement, collaboration, and academic performance when using smartphones and tablets were significantly more likely to hold positive perceptions of the educational value of these mobile devices. These teachers recognised the potential for smartphones and tablets to enhance the overall

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learning experiences of learners, facilitating a deeper understanding of course content and enabling more engaging and interactive learning activities. Importantly, the study suggests that teachers were more receptive to integrating smartphones and tablets when they could clearly identify how these technologies could support the attainment of specific learning objectives and align with their teaching approaches.

Zhang, Fan, Chai, Yu, and Song (2020) found that teachers who perceived strong parental endorsement and administrative support for smartphones and tablets were more likely to hold positive attitudes toward their integration. Similarly, other studies indicate that institutional support, access to resources, and professional development significantly influence teachers' willingness to adopt mobile technologies in the classroom (Ertmer & Ottenbreit-Leftwich, 2010). When teachers feel confident in managing classroom technology and are supported by school leadership, they are more inclined to integrate mobile devices as meaningful learning tools rather than viewing them as distractions.

However, the literature also reveals mixed findings. While some studies report improved learner engagement and access to digital resources through smartphone and tablet use, others highlight concerns about classroom management challenges, learner distraction, cyberbullying, and inequitable access (Thomas & Muñoz,2016).Research on teachers' perceptions therefore encompasses multiple factors, including perceived impact on learner achievement, alignment with curricular and pedagogical goals, digital competence, infrastructure availability, and parental and administrative support. These differing findings suggest that teachers' attitudes are shaped not only by the technology itself but also by contextual and systemic conditions.

In the South African context, the integration of smartphones and tablets into schools occurs within a landscape marked by digital inequality, resource constraints, and varying levels of technological infrastructure. While national and provincial initiatives promote ICT integration to enhance teaching and learning, the success of such initiatives largely depends on teachers' acceptance, preparedness, and contextual realities. Despite growing international literature on mobile learning, there remains limited context-specific research examining how South African secondary school

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teachers perceive the usability and impact of smartphones and tablets in their classrooms. Addressing this gap is important, as teachers' perspectives may significantly influence whether these technologies are implemented effectively or resisted in practice.

1.2. STATEMENT OF THE PROBLEM

Smartphones and tablets have become one of the essential technological instruments of the modern era, giving people access to all the new technologies available. Users of smartphones and tablets take advantage of this versatility and incorporate it heavily into their jobs, studies, and leisure activities. The current drive by the South African Department of Education (DBE) to increase the use of smartphones and tablets in schools as tools to facilitate teaching and learning for both teachers and learners is a crucial move which will prepare learners for future life (Department of education, 2017).

The problem at hand is the negative perception of teachers regarding the usage of smartphones and tablets by secondary school learners as a learning tool. There is a significant divide among teachers regarding their integration into the classroom. Teachers hold reservations about the effectiveness and impact of smartphones and tablets on the learning process. Some perceive devices as distractors of learning and sources of disruptive behaviour rather than as valuable educational tools. This perception hinders the potential benefits that mobile devices can bring to the learning environment.

The concerns are about learners' engagement, academic integrity, increased screen time, limited control over device usage, and potential negative effects on social interaction and communication skills. The perceptions of teachers lead to resistance to the incorporation of mobile devices into their teaching practices. It can result in a reluctance to explore innovative pedagogical approaches that leverage the capabilities of smartphones and tablets, limiting opportunities for interactive and personalised learning experiences. On the above ground, the researcher felt that understanding teachers' perceptions is crucial for designing appropriate professional development programmes, and support systems should be investigated.

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1.3. AIM AND OBJECTIVES OF THE STUDY

1.3.1. Aim of the Study

This study's primary aim was to explore teachers' perceptions of the use of smartphones and tablets for learning in the classrooms.

1.3.2. Objectives of the Study

The sub-objectives of the study were:

- To identify the challenges that teachers perceive in leveraging smartphones and tablets as educational tools in the classroom.
- To explore teachers' attitudes towards the use of smartphones and tablets by learners in schools.
- To examine the effects of using smartphones and tablets in learning in the classroom.

1.4. RESEARCH QUESTIONS

The main question was:

- How do teachers perceive the use of smartphones and tablets for learning in the classroom?

The sub-questions were:

- What are the challenges learners face when using smartphones and tablets in the classroom?
- What are the teachers' attitudes towards the use of smartphones and tablets in learning by learners?
- What are the effects of using smartphones and tablets in learning?

1.5. PRELIMINARY LITERATURE REVIEW

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A literature review examines scholarly work produced by respected researchers on a specific topic (Thomas, Utley, Hong, Korkmaz & Nugent, 2020). As secondary sources, literature reviews synthesise existing research rather than present original findings. This review focuses specifically on teachers' and learners' perceptions of the usability of smartphones and tablets in educational settings, as perception plays a critical role in determining whether technology is adopted, resisted, or effectively implemented in schools.

1.5.1. Technology Acceptance Model (TAM)

A theoretical framework provides a structure for interpreting research findings and grounding a study in established theory (Swanson, 2013). It synthesises tested concepts and theories to guide data analysis and interpretation (Braidotti, 2019). In this study, the Technology Acceptance Model (TAM), developed by Davis, Bagozzi, and Warshaw (1989), underpins the investigation of perceptions toward smartphone and tablet use.

TAM explains technology adoption through two central constructs: Perceived Usefulness (PU) and Perceived Ease of Use (PEU). Perceived usefulness refers to the extent to which an individual believes that using a technology will enhance performance, while perceived ease of use refers to the degree to which a person believes that using the technology will be free of effort (Marangunić & Granić, 2015). These constructs directly relate to teachers' and learners' perceptions of smartphones and tablets as learning tools.

Research applying TAM to mobile learning suggests that positive perceptions of usefulness and ease of use significantly influence attitudes and behavioural intentions to integrate technology into teaching and learning (Raunia, Rawski, Yang, & Johnson, 2014). Therefore, TAM provides an appropriate lens for examining how teachers and learners perceive the usability of smartphones and tablets in schools.

1.5.2. Teachers' and Learners' Perceptions: Challenges of Smartphone and Tablet Use

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Although technology can transform classroom practices, perceptions of its effectiveness vary. Some teachers perceive smartphones as disruptive tools that increase classroom management difficulties and reduce learner concentration (Barnwell, 2016). Learners themselves may acknowledge that constant access to social media, messaging, and entertainment applications can divert attention from academic tasks.

According to Karen (2022), these perceived distractions influence teachers' attitudes toward integrating smartphones into instruction. When teachers believe that smartphones hinder focus or encourage off-task behaviour, their perceived usefulness of the technology decreases, negatively affecting adoption. However, other perceptions highlight equity benefits, particularly in contexts where mobile devices provide access to digital resources for learners from disadvantaged backgrounds.

Thus, perceptions of challenges such as distraction, misuse, and classroom control shape attitudes toward smartphone integration and influence whether teachers support or resist their use.

1.5.3. **Perceived Effects of Smartphones and Tablets in the Classroom**

Studies examining the impact of smartphone use in education report mixed perceptions. Timmers, Janssen, Kool, and Kremer (2020) argue that the effects of smartphone use depend largely on how the devices are utilised. Similarly, Nikolopoulou (2020) found that perceptions of smartphone influence on academic performance are varied, with some participants reporting improved engagement and others noting negative effects on concentration.

These differing perceptions demonstrate that technology itself is not inherently beneficial or harmful; rather, its value is interpreted through users' experiences and beliefs. Teachers' perceptions of whether smartphones enhance or undermine learning outcomes significantly shape their willingness to integrate them into classroom practice.

1.5.4. **Perceived Benefits of Smartphones and Tablets in Learning**

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Despite concerns, many studies report positive perceptions regarding the educational value of smartphones and tablets. Nikolopoulou (2020) found that both teachers and learners perceive mobile devices as tools that enable access to educational resources anytime and anywhere. Interactive applications, multimedia content, and collaborative platforms are often viewed as enhancing learner engagement and motivation.
Furthermore, smartphones and tablets are perceived to support communication, collaboration, and the development of digital literacy skills necessary for the modern workforce (Memon & Memon, 2025). When teachers perceive these devices as improving instructional delivery and learner participation, their perceived usefulness increases, positively influencing technology acceptance.

A literature study reviews the writings on a topic produced by respected scholars and researchers (Thomas, et.al, 2020). As secondary sources, literature reviews do not include any original or unpublished experimental research. This particular literature evaluation focused on teachers' perceptions of the usability of smartphones and tablets in educational settings.

1.6. DEFINITION OF KEY CONCEPTS

Defining key concepts is essential for creating a clear understanding of any subject. These concepts act as the foundation for communication, analysis, and interpretation, enabling individuals to effectively navigate complex information. This overview of key concepts highlights their importance in clarifying terms, organising ideas, and promoting meaningful dialogue. offering precise definitions and placing concepts in context, we improve clarity and facilitate better engagement with the material. Grasping these foundational elements not only supports academic rigour but also encourages informed discussions across different fields.

1.6.1. Perceptions

This refers to individuals' subjective beliefs, attitudes, and interpretations regarding the usability, usefulness, and impact of smartphones and tablets as learning tools. Perceptions are not direct measures of behaviour; instead, they reflect how teachers and learners interpret and make sense of technological tools, which in turn shapes

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their willingness to adopt or resist these tools in educational practice (Venkatesh & Davis, 2000). According to Ajzen (1991), perceptions reflect individuals' beliefs, attitudes, and subjective evaluations that influence their intentions and behaviour.

1.6.2. Smartphone

A smartphone is a compact device that combines computing and mobile phone features into one unit (Blahnik & Schindelbeck, 2021). It serves as an all-in-one gadget, incorporating telephone functionality, a digital camera, and an MP3 player (Roulet & Clemente, 2018). Additionally, the Pew Research Centre (2018) notes that smartphones are increasingly vital as educational tools, offering access to a variety of resources and learning opportunities. These devices enable users to connect to the internet, as well as send emails and text messages. In this study, smartphones are referred to as "tools for learning" due to their versatile functionalities.

1.6.3. Tablets

A tablet, a type of smartphone, is a compact, handheld personal computing device often referred to as a "portable computer" or simply a "notebook" (Chou & Feng, 2019). This lightweight electronic device aims to combine the best features of both mobile phones and computers (Melin, Hägglund, Ullman, Persson & Hagerman, 2018). Tablets, also known as tablet computers or tablet PCs, are designed to be held in one or two hands (Beal & Rosenblum, 2018). In this study, tablets are explored as tools for learning due to their ability to access the internet.

1.6.4. eLearning

E-Learning, or electronic learning, refers to the use of electronic devices and technologies to deliver educational content and support learning (Murphy, 2020). According to Kumar Basak, Wotto and Belanger (2018), this process generally involves employing computers, tablets, or mobile devices to access online courses or resources. E-Learning encompasses a variety of technological tools that are Web-based, Web-distributed, or Web-capable for educational purposes (Weeden &

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Cornwell, 2020). In this study, e-Learning is defined as the use of smartphones and tablets to access learning materials such as books and notes.

1.6.5. Online Learning

Online learning, often referred to as distance education, is an educational format conducted over the internet. Rather than attending a physical classroom, learners utilise online resources and platforms for their learning (Dogan, Goru & Bozkurt, 2023). Researchers have highlighted various elements of online learning. For example, Wong (2023) emphasises the concept of transactional distance, which pertains to the psychological and communicative gap between learners and instructors. Additionally, Garrison and Rivera Vargas (2020) examine the Community of Inquiry framework, stressing the importance of social, cognitive, and teaching presence in creating effective online learning experiences. This approach allows learners to learn in a completely virtual environment. In this study, online learning focuses on how learners interact with their teachers' using smartphones and tablets.

1.6.6. Remote Learning

This is where learners and teachers, or information sources, are not physically present in a traditional classroom environment (Martin, Dennen & Bonk, 2023). Information is relayed through technology, such as discussion boards, video conferencing and online assessment. Garrison and Wah (2020) emphasised the importance of designing effective remote learning environments that promote active engagement and collaboration among learners. Additionally, a study by Zhao (2020) highlighted challenges such as maintaining learner motivation and ensuring effective communication in remote settings. Learners learn primarily through digital platforms, often in real time, which mirrors the traditional classroom-based learning experience, albeit from a distance. In this study, the discussion focuses on how lessons are carried out when learners are not in school.

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1.6.7. Technology-enhanced Learning

Technology-enhanced Learning (TEL) refers to the application of technology to improve and support the learning process. It involves integrating a variety of technological tools and resources such as computers, mobile devices, software applications, online platforms, and multimedia materials into educational settings and practices (Le, 2019). Shankar, Pothancheri, Sasi and Mishra (2024) highlight how technology can transform traditional educational models, suggesting that it boosts engagement and knowledge retention. Chiu and Mok (2020) note that for TEL to be effective, it is essential to carefully consider pedagogical strategies, ensuring that technology acts as an enabler rather than a substitute for meaningful learning.

TEL encompasses a broad spectrum of approaches, strategies, and methodologies that utilise technology to enhance learning experiences. In this study, TEL is applied in schools for corporate training and lifelong learning.

1.7. RESEARCH DESIGN AND METHODOLOGY

Research techniques outline how a researcher plans to conduct a study, addressing the approach to various aspects of the research problem. This process involves methods for data collection, statistical analysis, and interpretation of participants' responses (Sileyew, 2019). To address the research question, the methodology explains the data collection methods, analytical procedures, and other key features of the study. For this qualitative research, interviews were conducted with teachers and school principals, and the collected data were subsequently analysed.

1.7.1. Research Paradigms

According to Sileyew (2019) a paradigm is a deeply held system of thought and theoretical framework that encompasses assumptions about ontology, epistemology, methodology, and procedures. In essence, it defines how we learn about and understand the realities of the world. This study employed an ontological methodology, which refers to "the essence of what we believe about reality" (Kivunja & Kuyini, 2017: 27). In social science research, the ontological position pertains to the nature of reality, with two main contrasting views: objectivism, which asserts that an independent reality

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exists, and constructionism, which posits that reality is shaped by social processes (Sileyew, 2019). A researcher with a positivist perspective views reality as an external entity that can be discovered through conventional scientific methods (Khaldi, 2017). In this study, reality was explored by collecting information from participants.

1.7.2. Research Approach

Research approaches are strategies for conducting research, ranging from broad hypotheses to specific methods for collecting, analysing, and interpreting data (Sileyew, 2019). This study utilised a qualitative methodology, which focuses on understanding the meanings that individuals or groups assign to social or human issues (Khaldi, 2017). The research process progresses inductively from specific observations to broader concepts, encompassing data analysis, interpretation, and addressing emergent questions and procedures. In this current study, interviews were conducted with teachers, principals, and learners in environments where learners commonly use smartphones and tablets. This data collection method aligns well with the qualitative research methodology.

1.7.3. Research Design

Sileyew (2019) explains that a study design is essentially the researcher's plan for collecting and analysing data using a specific research approach. In this study, an exploratory research design and qualitative methods were employed to gather information from participants. Exploratory research targets issues that have not been thoroughly investigated, and qualitative techniques are commonly utilised in such studies (Hennink, Hutter & Bailey, 2020).

The aim of this study was to explore teachers' perspectives on the usability of smartphones and tablets in schools in Vhuronga 2 Circuit. Participants for the interviews were selected through purposive sampling. Semi-structured interviews were conducted, allowing the researcher to ask questions while also giving participants the opportunity to ask their own questions.

1.8. SAMPLING

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Lakens (2022) defines sampling as the process of selecting participants from whom data will be collected for the study. In simple terms, sampling involves gaining insights about a larger population by examining a smaller subset of it. The sampling process includes the following components:

1.8.1. Population

A population refers to a group of potential participants to whom the researcher aims to generalise the findings of the study (Rahman, Tabash, Salamzadeh, Abduli & Rahaman, 2022). In this study, the population consisted of school principals, teachers, and learners from Vhuronga 2 Circuit in Vhembe West District of Limpopo Province.

1.8.2. Sampling Method

Purposive sampling was employed in this research. Lakens (2022) describes purposive sampling as a non-probability technique where the selection of participants is based on the researcher's perspective. Teachers, who monitor and assign homework to learners, are most familiar with the impact of smartphones and tablets on learners' academic performance, so a sample was drawn from them. Similarly, principals, along with management, establish school rules and decide whether smartphones and tablets should be allowed on campus, making them an important group from which to gather opinions. Additionally, learners, as the primary users of smartphones and tablets in classrooms, provide essential insights; thus, purposive sampling was deemed suitable for this study.

1.8.3. Study Sample

The characteristics required for individuals to be part of the target population are referred to as the "sampling criteria" (Lakens, 2022). In this study, three school principals, three teachers, and three learners from Vhuronga 2 Circuit in Vhembe West District of Limpopo Province were selected through purposive sampling.

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1.9. ETHICAL CONSIDERATIONS

Ethical issues in research consist of a set of guidelines for study designs and methodologies (Arifin, 2018). These widely recognised guidelines provide a framework and standard for ensuring proper conduct among researchers.

1.9.1. Permission

Permissions or approvals are necessary to establish and confirm the partnership between an organisation and the researcher (Hasan, Rana, Chowdhury, Dola & Rony,2021). This involves obtaining written consent to conduct the study from the school principals, the University of Venda Research Ethics Committee, and the Limpopo Department of Education.

1.9.2. Informed Consent

According to Hasan,et.al(2021), obtaining informed consent requires providing individuals with information about key elements, including potential benefits and risks. In this study, the principle of informed consent was followed for interviews with teachers and principals. For interviews with learners, consent forms were given to them to pass on to their parents, as they were minors and required parental consent. Participants were informed about the research methodology and objectives to ensure they were adequately informed before deciding whether to participate.

1.9.3. Confidentiality

Confidentiality is defined as a situation where the researcher knows the identity of a participant but takes measures to keep that identity hidden from others (Tolich & Tumilty, 2021). Arifin (2018) emphasised that protecting the privacy of the study's findings and the identities of participants are critical ethical considerations in conducting research. To uphold the principle of anonymity, only aliases or code names were used to refer to the schools and participants involved in the study (Hoft, 2021). For example, "Teacher A" was used instead of the instructor's actual name, and all reporting of interview data adhered to strict confidentiality guidelines.

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1.9.4. Voluntary Participation

Hasan, Rana, Chowdhury, Dola and Rony (2021) define "voluntary participation" as the right of participants to decide whether or not to engage in a research activity. Participants were informed about the benefits of their voluntary involvement and their right to withdraw from the study at any time. They were assured that the data collected would be used solely for this research and that the inquiry adhered to established ethical guidelines.

1.9.5. Emotional and Psychological Constraints

Psychological limitations refer to the constraints on what individuals can do based on their perceptions of their environment (Hoft, 2021). Emotional limitations, considered a final cultural barrier to effective communication, involve emotional restraints (Olson, 2023). These constraints can manifest as participants withholding their thoughts, which may negatively affect their emotional well-being.

1.10. DATA COLLECTION METHODS

Data collection is the systematic process of gathering and analysing information on key elements to answer specific questions, test research hypotheses, and assess outcomes (Groenland & Dana, 2020). In this study, semi-structured interviews were used for data collection. This qualitative approach involves the researcher asking a series of prepared but open-ended questions to participants (Magaldi & Berler, 2020). As noted by Magaldi and Berler (2020), these interviews are conducted within a predefined topic framework. Teachers, principals, and learners were interviewed using this semi-structured format.

1.11. SIGNIFICANCE OF THE STUDY

The findings will help teachers comprehend how learners use smartphones and tablets in schools. The Department of Education will gain insights into the challenges and benefits associated with these devices in the learning environment, enabling schools

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to make informed decisions about whether to permit their use. Additionally, the results will inform users of smartphones and tablets about their effects in academic settings.

1.12. TRUSTWORTHINESS OF THE STUDY

Kyngäs, Kääriäinen and Elo (2020) noted that the trustworthiness of the data used in a study significantly impacts the validity of the material being analysed, as well as the findings and conclusions drawn. Researchers should implement the necessary protocols and procedures to ensure that their study is credible to readers (Stahl & King, 2020). The researcher defines the following elements of trustworthiness related to the gathered information and its interpretation:

1.12.1. Credibility

Credibility relates to the accuracy of the information or participant perspectives, as well as how the investigator analyses and presents them (Adler, 2022). The credibility of the study, or the confidence in its truthfulness and findings, is a crucial criterion (Shufutinsky, 2020). This study's credibility was supported by selecting experienced participants, which helped in creating a thorough interview protocol. Informed consent was obtained, and active listening techniques were utilised during interviews to ensure unbiased data collection. The interpretation of responses was detailed, and member checking was conducted to validate the findings.

1.12.2. Transferability

Transferability refers to the ability of research results to be applied in different contexts or with various populations (Korstjens & Moser, 2018). This concept emphasises that the usefulness of findings in other settings is determined by the readers themselves (Kyngäs, Kääriäinen & Elo, 2020). The study's sampling strategy was designed to ensure a diverse and representative sample that mirrors the broader population or target group, capturing a range of perspectives and experiences. Comprehensive descriptions of the research context, including details about the setting, participant characteristics, and specific selection criteria, enable readers to evaluate the similarities and differences between the study context and their own.

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1.12.3. Dependability

Dependability refers to the consistency of information across different circumstances (Haven & Van Grootel, 2019). It involves the stability of data over time and under varying conditions of the study (Kyngäs, Kääriäinen & Elo, 2020). In this study, a clear interview protocol was developed to establish inter-coder reliability, ensuring a transparent and systematic approach to data analysis. The researcher practised reflexivity and documented any changes or modifications made during the data collection process.

1.12.4. Conformability

Confirmability refers to the level of objectivity maintained by the researcher during data collection and reporting (Stahl & King, 2020). Readers want to ensure that the findings genuinely reflect the data rather than the researcher's characteristics or biases. To test confirmability, the researcher analysed the data twice, obtaining consistent results each time. This process was essential for ensuring the impartiality of the study's conclusions (Korstjens & Moser, 2018). To meet this criterion, the researcher devoted ample time to keeping clear and detailed records of the data collection methods and analysis.

1.13. DELIMITATION OF THE STUDY

Theofanidis and Fountouki (2019) describe delimitation in a research project as the process of narrowing the study's focus through factors such as geographical location, age, gender, demographic characteristics, size, or other similar variables. Delimitation is intended to enhance and streamline research rather than serve the personal interests of the researcher. This study was confined to selected secondary schools in Vhuronga 2 Circuit. Financial constraints also limited the researcher from including a larger number of schools. Nevertheless, the findings of this study can be relevant to other regions, provinces, and circuits.

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1.14. OUTLINE OF THE STUDY

The study's plan proceeds in the order outlined below.

Chapter 1: Introduction and background of the study- This chapter discusses the introduction and background of study, problem statement, aim of the study, objectives of the study, research questions, significance of the study, delimitation of the study, definition of operational concepts, and organisation of the study.

Chapter 2: Literature review- This chapter provides literature on the subject and issues covered, including a theoretical framework.

Chapter 3: Research methodology- This chapter presents the research design and methodology that the researcher follows when conducting research, research methodologies, study area, population of the study, sampling, sampling method, sampling size, data collection, data analysis, and ethical considerations.

Chapter 4: Data presentation, analysis, and interpretation- This chapter presents the data collected through questionnaires and interviews. The chapter also discusses the analysis and interpretation of the collected data by discussing the sampled population's participants as a way of providing an understanding of the nature of the research findings.

Chapter 5: Findings, recommendations, and conclusions - This chapter discusses the findings, recommendations, and conclusions. This chapter presents a synthesised discussion of the findings and recommendations.

1.15. CONCLUSION

The goal of this study was to comprehend how teachers in Vhuronga 2 Circuit feel about using tablets and smartphones, two of the most popular e-learning resources. It was highly anticipated that the participants, who are teachers, would discuss the potential applications of smartphones and tablets. Teachers, it was anticipated, would express concerns about how these gadgets are used in schools, as well as whether

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they are misused. Some teachers may highlight the benefits of using smartphones and tablets as a learning tool in schools. People's attitudes towards tablets and laptops in education may not always be positive. How teachers view the usage of smartphones and tablets in the classroom will contribute to increased knowledge about the use of these devices, which are becoming even more advanced. Stakeholders' attitudes regarding using smartphones and tablets will have a significant impact on their intention to include or exclude them in teaching and learning.

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CHAPTER 2

LITERATURE REVIEW

2.1. INTRODUCTION

This chapter reviews the relevant literature. A literature review examines the writings on a topic produced by respected scholars and researchers (Thomas, et,al., 2020). As secondary sources, literature reviews do not include any original or unpublished experimental studies. This literature evaluation focuses on teachers' perceptions regarding the use of smartphones and tablets in schools. Currently, South Africa lacks a uniform national educational policy specifically addressing the use of smartphones and tablets in educational settings. However, some schools in the country have adopted Bring Your Own Device (BYOD) policies, allowing learners to use their own smartphones or tablets for educational purposes (French, Guo & Shim, 2014a).

The integration of technology, such as smartphones and tablets, in schools aims to improve teaching and learning experiences through the use of educational apps, interactive resources, and digital platforms. It is crucial to address equitable access to devices and internet connectivity, especially in rural and underserved areas. Additionally, there is an emphasis on promoting digital citizenship and responsible device use, including educating learners about online safety, privacy, and appropriate behaviour (Hayes & Kotwica, 2013). Specific policies and guidelines regarding smartphone and tablet use may differ at the provincial, district, or individual school level.

Smartphones and tablets are vital in contemporary education, offering learners immediate access to information, engaging learning experiences, personalised instruction, and opportunities for collaboration and communication. These devices foster digital literacy and skills, promote accessibility and inclusion, connect learning to real-world applications, and enhance learner engagement and motivation. However, it is important to balance their usage with effective pedagogical strategies and considerations for equitable access, ensuring that they are integrated purposefully to support effective teaching and learning.

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2.2. THEORETICAL FRAMEWORK

A theoretical framework provides the foundational structure for research, comprising theories developed by experts in the relevant field that guide analysis and interpretation of findings. It functions as a "theoretical coat hanger," allowing researchers to organise, interpret, and contextualise data (Varpio, Paradis, Uijtdehaage & Young, 2020). In addition, a theoretical framework synthesises existing literature on relevant concepts and previously tested theories, establishing a clear conceptual foundation for the study and ensuring alignment between research questions, objectives, and methodology (Braidotti, 2019).

This study employs the Technology Acceptance Model (TAM) as its primary theoretical framework to explore teachers' perceptions of smartphones and tablets as learning tools for secondary school learners (Hussein, Mohamed & Kais, 2022). TAM, originally proposed by Davis (1989), suggests that an individual's intention to adopt a technology is influenced by two core constructs: Perceived Usefulness (PU) and Perceived Ease of Use (PEU) (Marangunić & Granić, 2015). These constructs are particularly relevant in educational research, as they allow for a systematic understanding of how teachers form attitudes toward integrating mobile devices into their instructional practices.

Perceived Usefulness refers to the extent to which teachers believe that smartphones and tablets can enhance teaching effectiveness, improve learner engagement, and facilitate access to a wide range of educational resources. Teachers with high perceived usefulness are more likely to adopt technology because they perceive tangible benefits for teaching and learning outcomes. In the context of secondary education, perceived usefulness may manifest as improvements in learner participation through interactive applications or collaborative projects, access to diverse multimedia resources that support differentiated instruction, and enhanced opportunities for learner-centred and personalised learning experiences. Observing positive outcomes, such as learners actively engaging with educational content or demonstrating better understanding of concepts through the use of technology, can reinforce teachers' perceptions of usefulness, thereby increasing their willingness to integrate mobile devices into classroom practices.

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Perceived Ease of Use, on the other hand, refers to the degree to which teachers believe that smartphones and tablets are easy to operate and integrate into existing teaching methods. Teachers who perceive devices as user-friendly are more confident in adopting them, whereas perceptions of complexity or technical difficulty may reduce willingness. Factors that influence perceived ease of use include teachers' prior experience with mobile devices, the availability of professional development and training in technology integration, and the provision of technical support by schools to address usability concerns. Research indicates that when teachers find mobile technologies intuitive and straightforward, they are more motivated to explore innovative teaching practices, integrate multimedia tools, and encourage learner interaction, resulting in a more dynamic and interactive learning environment (Davis, Granić & Marangunić, 2023). Conversely, insufficient support or perceptions of technical difficulty can create resistance, limiting the effective adoption of mobile technologies in the classroom.

In this study, perceived usefulness and perceived ease of use will be operationalised through a combination of quantitative surveys and qualitative interviews. Indicators of perceived usefulness include teachers' perceptions of improvements in learner engagement, lesson effectiveness, and access to educational resources, while perceived ease of use will be measured through teachers' assessments of usability, ease of integration into lesson planning, and confidence in operating the devices. By analysing these indicators, the study seeks to address research objectives related to assessing teachers' perceptions of smartphones and tablets as learning tools, identifying factors influencing their adoption, and informing strategies to improve technology acceptance and effective use in secondary education.

The relevance of TAM in this context is particularly strong because in secondary schools, where learner engagement, digital literacy, and access to educational resources are crucial, the constructs of perceived usefulness and perceived ease of use provide practical measures for understanding teachers' attitudes toward technology. Teacher perceptions directly influence the implementation of mobile devices in classrooms, which in turn affects learner outcomes and overall classroom dynamics. Thus, examining these perceptions through the TAM framework allows for

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a structured and evidence-based approach to understanding technology adoption in educational settings.

Despite its strengths, TAM has certain limitations. The model primarily focuses on individual perceptions and does not fully account for institutional, cultural, or contextual factors that may influence technology adoption. Furthermore, TAM assumes rational decision-making, which may not reflect the complexity of teachers' attitudes shaped by experience, learner needs, or school policies. To address these gaps, this study complements TAM with qualitative exploration of teachers' subjective experiences, challenges, and contextual constraints, providing a more comprehensive understanding of the integration of smartphones and tablets in classrooms.

Teachers' perceptions will be captured using surveys designed to quantitatively measure perceived usefulness and perceived ease of use, as well as interviews that explore teachers' attitudes, experiences, and perceived barriers or facilitators. Where possible, analysis of classroom practices will also be used to triangulate perceptions with observed behaviours, ensuring that the interpretation of TAM constructs aligns with real-world integration of mobile devices. This combined approach allows the study to interpret how perceived usefulness and perceived ease of use relate to actual classroom practices, strengthening the connection between theory, research objectives, and methodology.

The Technology Acceptance Model provides a robust theoretical foundation for understanding the adoption of mobile technologies in secondary education. By linking perceived usefulness and perceived ease of use to teachers' attitudes and classroom practices, this study aims to generate insights into the factors that influence technology adoption, inform professional development strategies, and contribute to the effective integration of smartphones and tablets to enhance learner engagement and learning outcomes.

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2.3. LEARNERS AND TEACHERS' CHALLENGES IN USING SMARTPHONES AND TABLETS

2.3.1. Classroom Management and Maintaining Focus

Integrating smartphones and tablets into classroom teaching presents significant challenges for teachers, particularly in terms of managing learner focus. Teachers often struggle when learners become distracted by non-educational activities such as social media, gaming, or instant messaging, which can undermine instructional effectiveness (Onyema, 2019; Metruk, 2020). However, some researchers argue that these devices can enhance learning when thoughtfully integrated. Mulet, Van De Leemput and Amadieu (2019) emphasise that smartphones and tablets can provide access to a wide range of information, support collaborative projects, and foster personalised learning opportunities.

For example, using educational apps and interactive tools can encourage active participation and engagement, maintaining learners' focus. Furthermore, Nikolopoulou (2020) highlights that clear guidelines and classroom expectations regarding device usage are crucial, noting that teachers who combine structured management strategies with adequate training can design interactive lessons that sustain learners' attention. Overall, the impact of mobile devices on classroom dynamics depends largely on their implementation; teachers who recognise both the benefits and challenges are better positioned to create a productive and engaging learning environment.

2.3.2. Balancing Benefits and Potential for Distraction

While smartphones and tablets offer significant educational advantages, such as increasing learner engagement, enabling personalised instruction, and providing instant access to resources, they also carry risks of distraction (Onyema, 2019; Nikolopoulou, 2020). Teachers' perceptions vary, as many acknowledge both the educational benefits and potential for off-task behaviour (Khlaisang et al., 2023). Mobile devices can accommodate diverse learning styles, promote interactivity, and

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support the development of digital literacy skills, yet teachers remain cautious about non-educational use disrupting lessons.

To address this challenge, educators advocate for structured integration of technology, clear classroom rules, and professional development focused on managing mobile devices (Khlaif, 2018). Establishing rules and expectations helps learners understand boundaries and consequences, while equipping teachers to integrate smartphones and tablets strategically, thereby enhancing learning outcomes while maintaining focus.

2.3.3. Cybersecurity and Privacy Concerns

Teachers' perceptions of mobile device adoption are increasingly influenced by concerns about cybersecurity and privacy. Risks such as data breaches, cyberbullying, and unauthorised access to personal information can negatively affect learners and the broader educational environment (Metruk, 2020; Tazi, Shrestha & Das, 2023). Many teachers observe that learners often lack awareness of safe online practices, which can expose them to potential threats. Such concerns may reduce teachers' willingness to adopt smartphones and tablets, limiting learners' opportunities for interactive and technology-enhanced learning.

Schools are therefore encouraged to implement secure networks, privacy-focused applications, and training programmes on digital citizenship to build teacher confidence and foster a safe classroom environment (Tazi et al., 2023). Historical events, such as the 2017 Equifax data breach and cases of cyberbullying like Amanda Todd's, emphasise the critical need for proactive measures to protect learners and ensure responsible technology use.

2.3.4. Ensuring Digital Competence

Ensuring that learners possess sufficient digital competence is another major concern affecting teachers' perceptions of mobile devices. Pettersson (2018) notes that disparities in digital literacy can exacerbate educational inequities, as learners who lack necessary skills may struggle to engage meaningfully with technology. Teachers recognise the potential of smartphones and tablets to enhance learning through collaborative projects, access to information, and personalised activities; however,

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they stress the importance of equipping learners with critical digital skills, including problem-solving, information evaluation, and responsible online behaviour (Nikolopoulou, 2020).

Structured digital literacy programmes, combined with opportunities to experiment and learn continuously, help ensure learners are prepared to use technology effectively. Teachers are more likely to perceive mobile devices positively when learners demonstrate competence and confidence in navigating digital tools, reinforcing the link between teacher perceptions and successful technology integration.

2.4. EFFECTS OF USING SMARTPHONES AND TABLETS IN THE CLASSROOM

2.4.1. Potential Benefits

The integration of smartphones and tablets in classrooms offers numerous educational benefits. A key advantage is the enhancement of learner engagement and motivation. Research indicates that mobile devices facilitate interactive and personalised learning experiences, fostering increased interest and participation in lessons (Remón et al., 2017). Khlaif (2018) observes that learners demonstrate heightened enthusiasm when technology is incorporated through multimedia presentations, gamified activities, and collaborative projects. Additionally, these devices support personalised learning, allowing learners to progress at their own pace, accommodate diverse learning styles, and improve academic outcomes. Access to online resources, videos, and e-books enables learners to take control of their learning journeys, promoting self-directed and autonomous learning (Ali, Khan & Hussain, 2021).

Collaboration is another area where mobile devices have a positive impact. Nikolopoulou (2020) highlights that smartphones and tablets enable learners to share information, communicate in real time, and work collaboratively on projects, enhancing social skills and problem-solving abilities. Moreover, these technologies contribute to developing essential digital literacy skills, allowing learners to evaluate information critically, conduct research effectively, and use digital tools efficiently. Teachers' perceptions of these benefits reflect the TAM construct of perceived usefulness, as

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they recognise the potential for mobile devices to improve engagement, interactivity, and learning outcomes (Marangunić & Granić, 2015).

2.4.2. Potential Drawbacks

Despite the advantages, the use of mobile devices in classrooms is not without drawbacks. A primary concern is distraction, with learners potentially engaging with non-educational content, which can affect focus and academic performance (Arpaci, 2019). Furthermore, unequal access to smartphones, tablets, and digital literacy skills can create significant inequities, limiting some learners' ability to benefit from technology-enhanced education (Marta & Santoso, 2024). Cybersecurity and privacy risks also influence teacher perceptions, as incidents involving data breaches or online harassment can undermine learners' safety and confidence (Tazi et al., 2023). Excessive reliance on mobile devices may reduce face-to-face interactions, potentially hindering the development of social and emotional skills.

To mitigate these challenges, schools must implement strategies to ensure equitable access to devices, provide comprehensive digital literacy training, and develop policies that address cybersecurity and responsible use (Memon & Memon, 2025; Ali et al., 2021). Teachers' perceptions are central to successful technology adoption, as they are more likely to integrate mobile devices effectively when they perceive tangible benefits, feel confident in managing potential risks, and observe learners demonstrating competence and responsible use.

2.4.3. Digital Divides

The issue of digital divides further shapes teachers' perceptions regarding smartphone and tablet use in education. Learners from lower socioeconomic backgrounds or with limited digital literacy may lack access to devices or the necessary skills to engage fully, potentially exacerbating educational inequities (Marta & Santoso, 2024). Teachers often observe variations in device availability and affordability, which can hinder effective lesson implementation and frustrate both educators and learners (Ali et al., 2021). Such disparities can also negatively affect learner confidence and

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motivation, as learners compare themselves to peers with greater technological access.

Teachers advocate for institutional strategies that provide equitable access to devices and resources while offering comprehensive training to build digital competence (Memon & Memon, 2025). Addressing these challenges is essential for fostering inclusive learning environments where all learners can benefit from the educational advantages of mobile technologies. By considering availability, affordability, and digital skills, teachers are better positioned to implement smartphones and tablets effectively, demonstrating the importance of their perceptions in shaping educational practices and technology integration.

2.5. CONCLUSION

In this chapter, a comprehensive literature review was conducted to examine teachers' perceptions regarding the use of smartphones and tablets in educational settings. The discussion began with an introduction to the lack of a uniform national policy in South Africa on mobile technology use in schools, followed by an exploration of the Technology Acceptance Model (TAM) as a theoretical framework for understanding these perceptions. The chapter addressed various challenges faced by learners and teachers, including classroom management, balancing benefits with distractions, cybersecurity concerns, and ensuring digital competence. Additionally, it highlighted the potential benefits and drawbacks of integrating mobile devices into the classroom, emphasising issues related to digital divides and the impact on learning outcomes. In Chapter 3, the research design and the methodology employed to collect data from the participants are presented.

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CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1. INTRODUCTION

The purpose of this chapter is to detail the research methodology employed in the study on teachers' perspectives regarding the use of smartphones and tablets in learning. This chapter also describes the methods used to address the research questions. It outlines the qualitative approach taken in the study and discusses the strategies for sample selection and size, data collection methods, and data analysis techniques. The final section of the chapter also highlights how the researcher maintained ethical standards throughout the research process.

3.2. RESEARCH DESIGN

The data collection method is an integral part of the research design, which determines how the study addresses its research questions. According to Sileyew (2019), a study's objectives influence the design chosen to investigate and analyse the phenomenon at hand. The selected strategy aims to integrate various elements of the study systematically to address the research problem effectively (Asenahabi, 2019).

This study adopted an exploratory research design, a methodology employed to investigate research problems that have not been thoroughly explored. It is particularly suited for emerging topics or contexts where data collection poses practical challenges (Sileyew, 2019). Swedberg (2020) notes that exploratory research focuses on examining issues from multiple angles rather than providing definitive answers, making it ideal for studies that seek to understand complex, context-dependent phenomena. As a preliminary study, exploratory research also informs decisions about sampling methods, data collection techniques, and analytical approaches for subsequent research.

Dannels (2018) further explains that exploratory studies rely heavily on real-world observations to uncover truths and reveal differences in participants' perspectives.

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This approach allows the researcher to examine phenomena in their natural context, answering questions about how and why certain behaviours or practices occur. In this study, exploratory methods facilitated detailed observation and semi-structured interviews with participants to investigate the use of smartphones and tablets in classroom learning.

3.3. RESEARCH PARADIGMS

According to Sileyew (2019), a research paradigm is a fundamentally held system of thought and theoretical framework that encompasses assumptions about ontology, epistemology, methodology, and procedures, and it significantly influences how educational research is conducted. Guided by this understanding, the present study adopted an anti-positivist research paradigm. Anti-positivism, as a philosophical and methodological stance, critiques the positivist view that social reality can be studied through objective measurement and universal laws. Instead, it offers an alternative perspective that views reality as socially constructed and context-dependent, particularly within the social sciences (Gigi & Tzfadia, 2023).

This paradigm is particularly suitable for the current study because it recognises that teachers' perceptions of technology use are not fixed or universally measurable phenomena, but are shaped by personal experiences, cultural contexts, pedagogical beliefs, and institutional structures. The research sought to generate in-depth insights into the complex social and cultural factors influencing teachers' interpretations of smartphone and tablet use in their classrooms. By exploring the diverse meanings and lived experiences teachers associate with technology integration, the study embraced the existence of multiple realities rather than pursuing a single objective truth.

The anti-positivist approach supported the use of qualitative, interpretive methods necessary to capture these subjective perspectives and contextual nuances. Furthermore, it acknowledged the role of individual agency, recognising that teachers actively construct their understanding of technology through social interaction and professional practice. Therefore, the anti-positivist paradigm aligns both philosophically and methodologically with the study's aim of exploring subjective

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meanings and context-bound experiences, making it an appropriate and coherent framework for this research.

3.4. RESEARCH METHODS

This study employed a qualitative research approach, which focused on understanding and interpreting social phenomena from a subjective and contextual perspective (Stahl & King, 2020). The aim was to explore and gain in-depth insights into individuals' experiences, perspectives, meanings, and social interactions (Khalid et al., 2017). Qualitative research enabled a thorough exploration of teachers' perspectives, beliefs, and experiences related to the topic, offering a rich understanding of the complex factors that influence their perceptions.

Interviews were utilised to gather nuanced, context-specific data, allowing for open-ended questions that encourage probing and exploration of participants' responses. This method facilitated a comprehensive investigation of teachers' attitudes, concerns, and motivations regarding the use of smartphones and tablets as educational tools. Additionally, qualitative research was particularly effective in uncovering the underlying reasons and meanings behind teachers' perceptions, helping to identify specific factors that contribute to both positive and negative attitudes, along with the social and cultural influences that shape those views.

The qualitative method was well-suited for this study because it enhanced deep engagement and interaction with participants, including school principals, teachers, and learners.

3.5. POPULATION OF THE STUDY

A population refers to the group of potential participants from whom the researcher aims to draw conclusions based on the research findings (Rahman et al., 2022). In this study, the participants included school principals, teachers, and learners from selected secondary schools in Vhuronga 2 Circuit in Vhembe West District in Limpopo Province.

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This population represented the group from which the researcher selected participants and to which the results were generalised (Otzen & Manterola, 2017). Sampling, as defined by Berndt (2020), involves selecting a number of participants to form a representative group that provides relevant data about the community being studied.

The Vhuronga 2 Circuit has 31 schools, comprising 10 secondary and 21 primary schools. From the 10 secondary schools, 3 were sampled because they were on a pilot of using learner tablets from the Department of Education.

Purposive sampling was employed to select nine participants: three principals, three teachers, and three learners. The participants selected for this study were from the pilot schools that had received tablets from the Department of Education. Principals are expected to have insights into the technology used in their schools, while teachers are directly involved in classroom instruction, where smartphones and tablets are utilised by learners for educational purposes.

3.6. SAMPLING METHODS

While this study employed a small sample size, selecting one teacher and one learner from each of the three pilot schools was a deliberate choice aligned with the study's exploratory and qualitative focus. According to Berndt (2020), purposive sampling allows researchers to select participants who are most relevant to the research objectives, enabling the collection of in-depth and contextually rich data. The aim was not statistical generalisation but to gain meaningful insights into how digital devices, such as smartphones and tablets, are integrated into teaching and learning. A smaller, purposively selected sample facilitates deeper engagement with participants and allows for detailed exploration of their experiences and perspectives (Taherdoost, 2016).

To ensure that diverse perspectives were represented, participants were selected to reflect key stakeholder roles in the educational process: teachers, who design and deliver instruction, and learners, who actively engage with the technology (Berndt, 2020). Including participants from different schools within the Vhuronga 2 Circuit allowed the study to capture variation in teaching approaches, learner engagement,

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and implementation challenges across different institutional contexts. The schools were specifically chosen as pilot sites for tablet-based learning, making them particularly relevant for understanding both successes and barriers in technology adoption.

Although the sample is small, its purposive selection ensures relevance and richness of data, providing meaningful insights that can inform future studies with larger, more representative samples (Taherdoost, 2016). Future research could expand the participant pool to further capture diverse perspectives and enhance generalisability.

3.6.1. Purposive Sampling

Purposive sampling, also referred to as judgemental, selective, or subjective sampling, encompasses a range of techniques that depend on the researcher's judgement in selecting the units to be studied, such as individuals, organisations, events, or data points (Robinson, 2024). These techniques include maximum variation sampling, homogeneous sampling, typical case sampling, extreme (or deviant) case sampling, total population sampling, and expert sampling. Each of these methods serves a specific purpose, targeting particular types of units for various reasons (Denieffe, 2020).

Purposive sampling was appropriate for this study because the participants consisted of learners, teachers, and school principals. Learners play a vital role as they are the primary users of smartphones and tablets. While this investigation primarily focused on teachers, school principals, as the administrators of their institutions, oversee all activities within the school environment.

3.6.2. Sample Size

A sample study refers to the process of selecting items from a larger universe or population (Ames, Glenton & Lewin, 2019), while sampling criteria define the essential characteristics required for membership in the target population, thereby narrowing the population of interest (Berndt, 2020). In this study, schools were selected based on the researcher's geographical location to ensure feasibility and sustained

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engagement during data collection. A purposive sampling strategy was employed to deliberately select participants with direct experience and relevant knowledge of smartphone and tablet use in the classroom.

From each school, three key stakeholders were selected: the principal, one teacher, and one learner. The principal was included due to their leadership role and comprehensive oversight of school governance, policy implementation, and regulations concerning technology use. As instructional leaders, principals are responsible for guiding both teachers and learners regarding the acceptable and pedagogically sound use of digital devices. One teacher per school was selected to provide an in-depth account of classroom-level practices, pedagogical beliefs, and challenges associated with integrating smartphones and tablets into teaching and learning. Similarly, one learner per school was chosen as the primary end-user of these devices, capable of offering firsthand insights into how technology is experienced in daily classroom activities.

Although the sample size was small, it was intentionally limited to support the anti-positivist and qualitative orientation of the study, which prioritises depth over breadth. The aim was not statistical generalisation but rich, contextually grounded understanding. Selecting one teacher and one learner per school enabled the study to capture diverse perspectives across different institutional contexts rather than concentrating multiple voices within a single setting. Each school represents a distinct social and organisational environment shaped by its own culture, leadership style, resource availability, and policy implementation.

By including participants from multiple schools, the study ensured variation in experiences and viewpoints across contexts, thereby enhancing the breadth of perspectives while maintaining depth within each case. Furthermore, the inclusion of three different stakeholder groups within each school allowed for triangulation of perspectives, strengthening the credibility of the findings. The small, purposively selected sample was therefore appropriate for generating nuanced, interpretive insights into the complex social dynamics surrounding technology use in classrooms.

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3.7. RESEARCH INSTRUMENTS

Data collection involves gathering and measuring information on variables of interest in a systematic manner that allows researchers to answer research questions, test hypotheses, and assess outcomes (Hagan, 2014). A study can utilise primary data, secondary data, or a combination of both. Primary data refers to new information collected specifically for the research, while secondary data consists of existing information sourced from books, articles, and journals. This study utilised both primary data to draw conclusions and make recommendations regarding the topic under investigation.

Primary data was collected through individual face-to-face semi-structured interviews. Narrative data for this study were collected through interviews. Interviews are considered the most effective method for exploring and gathering experiential narrative material, providing valuable insights into human phenomena (Adeoye-Olatunde & Olenik, 2021).

As noted by Karatsareas (2022), individual interviews involve face-to-face, two-way communication between the interviewer and the participants. Individual interviews were conducted with school principals, teachers, and learners by asking questions and allowing participants to respond. This method was suitable for the study because it facilitated a deeper understanding of how smartphones and tablets are used in the classroom for learning, as well as the challenges faced by participants, including the misuse of smartphones for non-educational purposes by learners.

3.8. DATA COLLECTION

Data collection provides the means by which researchers address their research questions (Maree, 2016). In this study, data were gathered from school principals, teachers, and learners across three secondary schools in Vhuronga 2 Circuit. Semi-structured interviews with open-ended questions were employed as the primary data collection method (Agustianingsih & Mahmudi, 2019). Interviews allow for the collection of rich, detailed information, and the semi-structured format enabled the

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researcher to clarify questions and probe deeper when participants' responses required elaboration (Monday, 2020).

During face-to-face interviews, the researcher posed questions while participants provided responses, facilitating the collection of nuanced insights into learners' use of smartphones and tablets, as well as teachers' perceptions of these devices in the learning process. The semi-structured approach was particularly appropriate because it accommodated the unique perspectives of principals, teachers, and learners, ensuring that data captured the diversity of experiences and roles within the schools.

Following data collection, thematic analysis was employed to systematically analyse the interview transcripts (Braun & Clarke, 2006). The process began with familiarisation, where transcripts were read multiple times to identify initial impressions. Open coding was then applied, highlighting meaningful segments of text and assigning codes to capture key concepts and ideas. These codes were iteratively refined and grouped into categories, from which broader themes emerged that addressed the research questions. Examples of emerging themes included "challenges in technology integration," "learner engagement with devices," and "teachers' instructional adaptations."

To enhance organisation and ensure transparency, qualitative data analysis software, NVivo, was used to store, code, and manage the data efficiently (Dannels, 2018). Using this software allowed the researcher to trace themes back to raw data segments, ensuring that findings were directly grounded in participant responses.

Although interviews were the primary data collection method, triangulation was employed to enhance the rigour and trustworthiness of the study. Triangulation involved comparing and contrasting the perspectives of different participant groups principals, teachers, and learners to identify convergent and divergent insights regarding technology use in the classroom (Patton, 2015). Additionally, multiple sources of evidence were considered, including field notes, observational insights, and school documentation related to tablet and smartphone use. This methodological triangulation helped validate the findings, ensuring that interpretations were not reliant on a single perspective or data source.

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3.9. DATA ANALYSIS

Kent (2020) defines data analysis as the process of gathering, organising, and examining information in order to draw meaningful conclusions. This definition emphasises the procedural and organisational aspects of analysis, highlighting the systematic steps involved in making sense of collected data. In contrast, Lester, Cho and Lochmiller (2020) describe data analysis, particularly in qualitative research, as a systematic process of interpreting data to identify patterns, themes, and meanings. This definition focuses more on interpretation and meaning-making rather than simply organising information. These two definitions support each other by presenting data analysis as both a structured and interpretive process.

Data analysis in this study was conducted using qualitative content analysis to systematically interpret participants' responses and generate meaningful findings. The process followed three main stages: preparation, organising, and reporting/interpretation. Through this systematic and interpretive process, the data were analysed in a way that preserved participants' meanings while allowing for the identification of key patterns and contextual influences shaping perceptions of technology use in the classroom.

3.10. ELIMINATION OF BIAS

Bias can arise from systematic errors in sampling or from favouring certain results over others (Fox, MacLehose & Lash, 2021). It can be minimised through careful research design and data analysis methods. This study-maintained objectivity by using gender-neutral language and including school principals, teachers, and learners from all racial and ethnic backgrounds. English was the language used throughout the study to ensure accessibility for all participants. Additionally, school principals, teachers, and learners were treated equally and with consideration.

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3.11. TRUSTWORTHINESS

Cloutier and Ravasi (2021) argue that assessing the trustworthiness of data analysis is crucial for evaluating the findings and conclusions of a study. In qualitative research, trustworthiness is a key measure of the quality of the data collected, serving to assess the validity and reliability of the study (Adler, 2022). Trustworthiness encompasses four main components: credibility, transferability, confirmability, and dependability, which are integral to the data gathering process. To enhance the trustworthiness of the collected data, the researcher implemented the following strategies:

3.11.1. Credibility

Credibility pertains to the researcher's confidence in the accuracy of the collected data; it involves accurately presenting the results derived from that information to inform the study's conclusions (Cloutier & Ravasi, 2021). This concept is focused on the validity of the conclusions drawn from the data and how well these conclusions align with the reality being described. To enhance credibility, I compared my interpretation of the data with the perspectives of the participants, seeking to establish alignment between both sets of insights.

Participants were invited to provide feedback on my interpretation and were encouraged to agree or disagree with my understanding. This study's credibility was supported by selecting experienced participants and the researcher's expertise in organisational psychology, which helped in creating a thorough interview protocol. Informed consent was obtained, and active listening techniques were utilised during interviews to ensure unbiased data collection. The interpretation of responses was detailed, and member checking was conducted to validate the findings.

3.11.2. Transferability

Transferability refers to the extent to which the conclusions of a study can be applied to other similar contexts (Adler, 2022). The ability of others to determine whether the findings can be transferred relies on a detailed description of the study's setting, participant selection, and the findings themselves, often referred to as "thick

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description." This concept demonstrates how qualitative researchers can show that their results are relevant in other contexts, which may include similar situations, populations, or phenomena.

In this study, the researchers employed thick description to indicate that the findings could be applicable to various other contexts and circumstances. To enhance transferability, a comprehensive and rich description of the study was provided, allowing readers to assess whether the findings could be relevant in different settings. However, Adler (2022) notes that transferability is relative and contingent upon the specific conditions of other contexts.

3.11.3. Dependability

Dependability refers to the likelihood that similar findings would emerge if the study were to be repeated (Haven & Grootel, 2019). However, some variability is to be anticipated in qualitative studies, as the emphasis is on capturing the range of experiences rather than just the average experience. The interview transcripts were shared with the participants to allow them to correct any factual inaccuracies. To enhance the dependability of the study, the researcher provided extensive details about the methodology employed. Both major themes and sub-themes were thoroughly described and interpreted.

3.11.4. Confirmability

Confirmability refers to the researchers' ability to show that the data accurately reflect the participants' responses rather than their own biases or opinions (Stahl & King, 2020). It relates to the neutrality and consistency of the findings, akin to objectivity in quantitative research (Stahl & King, 2020). The study included thorough documentation of the entire research process, encompassing the interview protocol, data collection methods, and analysis procedures. This transparency allows others to assess the research process and replicate the study if necessary.

The researchers engaged in reflexive practices, critically evaluating their own biases, assumptions, and preconceptions that could influence data collection and

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interpretation. Additionally, member checking was conducted, where interview findings were shared with participants to validate the accuracy of the interpretations. This process enabled participants to provide feedback and ensure their perspectives were accurately represented.

3.11.5. Researcher reflexivity and positionality

Within the anti-positivist paradigm, I acknowledge that I am not a neutral or detached observer but an active participant in the construction of knowledge. My professional background, experience in educational settings, and prior views on technology integration could have influenced both the data collection process and the interpretation of the findings.

To minimise potential bias, I engaged in continuous self-reflection throughout the study and maintained reflexive notes to critically examine my assumptions, decisions, and interpretations. I remained conscious of how my positionality might shape interactions with participants and worked to ensure that their perspectives were represented accurately. Through transparency in describing my methodological choices and by conducting member checking, I sought to ensure that the findings reflected participants' voices rather than my own preconceptions. By explicitly acknowledging my reflexivity and positionality, I strengthened the credibility and confirmability of the study.

3.12. ETHICAL CONSIDERATIONS

Ethical issues in research encompass a set of guidelines for study designs and methodologies (Arifin, 2018). These widely accepted standards provide a foundation and benchmark for ethical conduct among researchers. As noted by Arifin (2018), it is essential for researchers to recognise potential ethical concerns that may arise during their work and to have clear plans in place to address these issues. Before the study commenced, the research proposal was submitted to the University's Higher Degree Committee for approval. Additionally, permission was sought from the Vhembe District Department of Education to conduct research in schools. The following concerns were also taken into account:

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3.12.1. Permission for Conducting the Study

Obtaining permissions and approvals was essential to formally establish the relationship between the participating institutions and the researcher (Hasan et al., 2021). Prior to data collection, written consent to conduct the study was obtained from the school principals of the selected schools. Ethical clearance was granted by the University of Venda Research Ethics Committee (Ref: FHSSE/24/CSEM/28/0111). In addition, formal permission to conduct the research in public schools was obtained from the Limpopo Department of Education (Ref: 2/2/2). These approvals ensured that the study complied with institutional and ethical requirements.

3.12.2. Informed Consent

According to Hasan,et.al. (2021), obtaining informed consent requires providing individuals with information about key elements, especially the potential benefits and risks involved. In this study, the principle of informed consent was strictly followed for interviews with teachers and principals. For interviews with learners, consent forms were distributed to them to share with their parents, as they were minors and parental consent was necessary. Participants were informed about the research methodology and objectives, ensuring they were fully aware before deciding whether to participate in the study.

3.12.3. Confidentiality

Confidentiality involves the researcher knowing the identity of a research participant while taking measures to keep that information hidden from others (Tolich & Tumilty, 2021). Arifin (2018) emphasises that protecting the privacy of the study's findings and maintaining the anonymity of participants are crucial ethical considerations in research. To uphold this principle, aliases or code names were used to refer to the schools and participants involved in the study (Hoft, 2021).

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3.12.4. Voluntary Participation

Hasan,et.al., (2021) define voluntary participation as the right of participants to decide whether or not to engage in a research activity. Participants were informed about the benefits of their voluntary involvement and their right to withdraw from the study at any time. They were also assured that the data collected would be used solely for this research and that the study adhered to established ethical guidelines.

3.12.5. Emotional and psychological constraints

Psychological limitations refer to the constraints on individuals based on their perceptions of their surroundings (Hoft, 2021). Emotional limitations, which can hinder effective communication, are also considered a significant cultural barrier (Olson, 2023). Emotional and psychological constraints may manifest as participants choosing not to express certain thoughts, potentially harming their emotional well-being.

Ethical review boards and relevant authorities were consulted to ensure adherence to ethical standards. The study prioritised the well-being, privacy, and rights of participants, ensuring that their involvement was voluntary, respectful, and conducted with the highest level of integrity.

3.12.6. Professionalism

The researcher and supervisor must access the collected information while ensuring its security (DuBois, Chibnall, Tait & Vander Wal, 2018). This information is intended solely for academic purposes and should not be used for financial gain unless explicitly stated at the outset of data collection (DuBois, et.al., 2018). To protect this information, I created a secure folder on my laptop that was password-protected, where I stored the records.

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3.12.7. Non-discrimination

It aims to enhance societal ethics by addressing or mitigating social issues. Emphasising non-discrimination ensures that each participant's opinion is equally valued. Consequently, the researcher should not discriminate against participants based on their characteristics; all individuals must be treated equally (Dźwigoł & Dźwigoł-Barosz, 2018). To prevent discrimination, I did not specify any particular gender or race for participation.

3.13. CONCLUSION

This chapter discussed the research design and methodology, as well as the research procedures, areas of study, population, sampling techniques, data collection instruments, and data analysis. Lastly, it discussed research ethics such as informed consent, voluntary participation, right of protection of objects, confidentiality and privacy, as well as validity and reliability. The next chapter presents and analyses the data.

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CHAPTER 4

PRESENTATION AND DISCUSSION OF DATA

4.1. INTRODUCTION

The aim of the study was to gather teachers' perceptions regarding secondary school learners' use of smartphones and tablets for learning in Vhuronga 2 Circuit. The previous chapter detailed the research methodology, data collection strategies, and the methods employed to analyse the gathered data. This chapter presents and analyses the collected data, utilising a qualitative approach that involved interviews.

This chapter reports on the data gathered from individual interviews with participants, including school principals, teachers, and learners. Since the selected schools were provided with tablets by the Department of Education, only three secondary schools in Vhuronga 2 Circuit received these devices. The study sample consisted of nine participants: three school principals, three teachers, and three learners. In reporting the data, participants were referenced alongside their quoted statements from the interviews to illustrate the emerging themes and sub-themes.

4.2. DEMOGRAPHIC DATA

The demographic data was gathered to provide a comprehensive overview of the participants and to examine how these characteristics may relate to the research variables under investigation.

4.2.1. Age of Participants

Figure 4.1 below illustrates the ages of participants. A notable 45% of participants are in the 25-34 age range, indicating a strong presence of individuals in their twenties to early thirties. Following this, 33% fall within the 18-24 age group, reflecting a significant number of younger individuals. Interestingly, there are no participants in the 35-44 age bracket, while 22% are in the 45-54 range. The data highlights the

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concentration of younger adults, with a noticeable absence of middle-aged participants.

With 45% of participants aged 25-34 and 33% aged 18-24, teachers may view learners as more tech-savvy, leading to a positive perception of smartphones and tablets as effective learning tools. Younger teachers are likely to be more inclined to integrate technology into their teaching methods, using these devices to enhance engagement and accessibility. However, there may also be concerns about potential distractions, particularly if teachers observe younger learners using mobile devices for non-educational purposes.

The absence of participants in the 35-44 age range could result in a gap in understanding the challenges that older generations face regarding technology, which might lead to less balanced views on its impact. Teachers prioritise strategies that cater to the interests of younger learners, utilising popular apps and online resources to create a more dynamic learning environment. This concentration of younger adults' further shapes teachers' perceptions, encouraging them to view learners as favouring interactive and multimedia content. The age demographics suggest that teachers in this context may adopt a more progressive stance towards technology in education, influencing their teaching methods and interactions with learners.

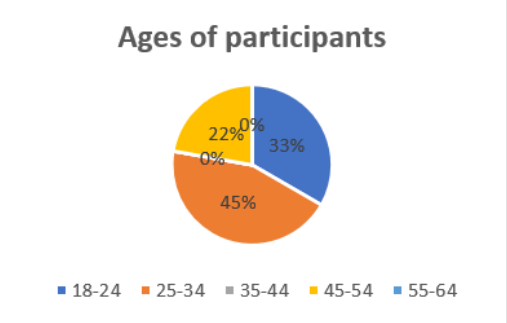


Figure 4.1: Age of participants

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4.2.2. Gender of Participants

Figure 4.2 below shows that a slight majority of male participants, who make up 56% of the sample. In contrast, female participants account for 44%. This distribution highlights a notable representation of males in the study, suggesting a balanced yet slightly skewed gender composition among the participants. The 56% male and 44% female participants can influence teachers' perceptions of secondary school learners' use of smartphones and tablets for learning in several ways.

Firstly, when male participants are many, this may lead teachers to perceive that boys are more engaged with technology, potentially influencing their expectations and instructional strategies. Teachers might unconsciously tailor their approaches to cater more to male learners, assuming they are more adept at using smartphones and tablets for educational purposes.

The representation of female participants, though slightly lower, could prompt teachers to consider the unique needs and learning styles of female learners as well. This awareness might encourage teachers to integrate a variety of digital resources that appeal to both genders, fostering a more inclusive learning environment. Teachers may be influenced by gender stereotypes related to technology use. For instance, they might assume that males are more interested in technical subjects, while females may be viewed as less proficient with digital tools. Such perceptions could affect how teachers implement technology in the classroom, possibly leading to an imbalance in the resources and opportunities provided to different genders.

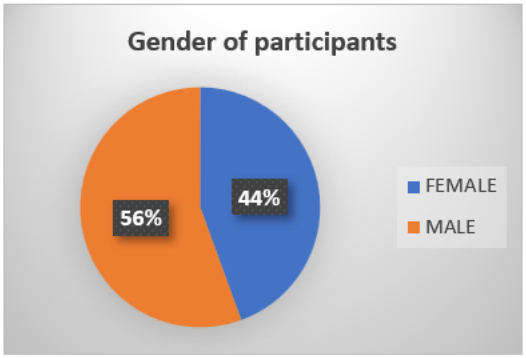


Figure 4.2: Gender of participants

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4.2.3. Highest Qualifications

Data in Figure 4.3 below on the highest qualifications of participants reveals a varied educational background. Fifty percent of the participants hold an honours in teaching, indicating a strong foundation in educational practice. Following this, 33% of participants have obtained a degree, while 17% possess a diploma in teaching. Notably, there are no participants with a master's degree or doctorate, suggesting that higher-level qualifications are underrepresented in this group. Overall, the findings illustrate a predominant emphasis on teaching diplomas among the participants.

With 50% of participants holding honours in teaching qualifications, there is a strong foundation in educational practice, which may lead teachers to feel confident in integrating technology into their teaching methods. This background could foster a belief that they are well-equipped to utilise smartphones and tablets effectively as learning tools.

The presence of 33% of participants with a degree and 17% with a diploma in teaching further underscores a solid educational base, suggesting that teachers may be more open to innovative teaching approaches that incorporate technology. However, the absence of participants with higher qualifications, such as master's degrees or doctorates, may limit exposure to advanced pedagogical theories and cutting-edge research on technology in education. This gap could result in a more traditional approach to teaching, potentially hindering the adoption of innovative practices that leverage digital tools.

The predominant emphasis on teaching diplomas might lead to a focus on foundational teaching methods rather than exploring the latest educational technologies. Teachers may also perceive their own professional development needs in relation to technology use, possibly prompting them to seek further training to enhance their skills in this area. While the strong qualifications in teaching suggest a readiness to engage with smartphones and tablets, the lack of higher-level qualifications may influence the depth of understanding and application of technology in the classroom, highlighting the need for ongoing professional development to fully realise the potential of these tools for learning.

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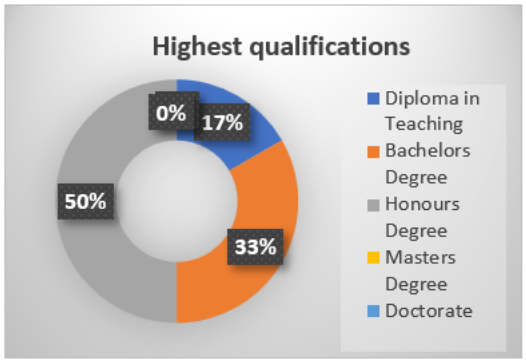


Figure 4.3: Highest qualifications

4.2.4. **Teaching Experience**

Figure 4.4, below, depicts teaching experience among participants, revealing a varied range of professional tenures. A significant majority, 58%, have between 1 to 5 years of experience, indicating a predominance of relatively new teachers in the group. In contrast, 19% of participants fall within the 6 to 10 years range, representing a moderate level of experience. Notably, there are no participants with 11 to 15 years of teaching experience. Additionally, 23% of participants have over 15 years in the field, highlighting the presence of seasoned professionals. Overall, the data illustrate a mix of both emerging and experienced teachers in the educational setting.

The teaching experience of participants, as shown in Figure 4.4, can significantly influence teachers' perceptions of secondary school learners' use of smartphones and tablets. With 58% of participants having between 1 to 5 years of experience, there is a predominance of relatively new teachers. This is more open to adopting innovative teaching practices, including the integration of technology, as they are likely to be familiar with current trends and educational tools.

The presence of only 19% of participants with 6 to 10 years of experience and 23% with more than 15 years indicates a mix of emerging and seasoned professionals. While the experienced teachers bring valuable insights and traditional pedagogical methods, they may also hold more conservative views on technology use, potentially viewing smartphones and tablets as distractions rather than educational tools. The lack of participants with 11 to 15 years of experience could create a gap in mentorship opportunities, as newer teachers might benefit from the guidance of those with mid-

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level experience. This situation may affect how technology is perceived and implemented in the classroom, as seasoned teachers might be less inclined to experiment with new digital tools.

The combination of emerging and experienced teachers suggests a dynamic educational environment where newer teachers are likely to advocate for the use of smartphones and tablets, while more experienced teachers may need encouragement and support to embrace these technologies fully. This mix can lead to a varied approach to technology in teaching, highlighting the importance of professional development and collaboration to create a cohesive strategy for integrating digital tools in the learning process.

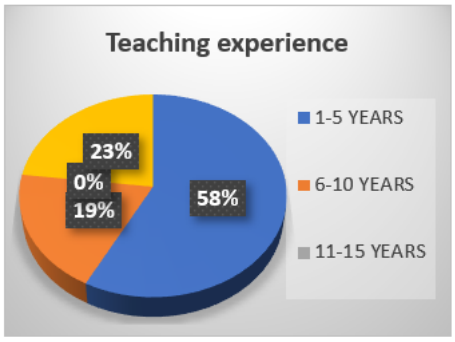


Figure 4.4: Teaching experience

4.2.5. Grades of Learners

Figure 4.5, illustrating the grades of learners, reveals that all participants were in Grade 12. Notably, there were no learners in Grades 8, 9, 10, and 11. This indicates a focused representation of learners at this specific grade level, highlighting a singular concentration within the educational sample.

The decision to collect data exclusively from Grade 12 learners was intentional, as this group is at a critical juncture in their academic journey, facing final examinations and preparing for post-school opportunities such as tertiary education or employment. Focusing on Grade 12 learners allowed the research to capture insights specifically related to the immediate academic pressures and technological needs relevant to this pivotal stage. This targeted approach provides a clear understanding of how

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technology is perceived and utilised by learners who are transitioning out of secondary education.

With 100% of participants in this grade level, teachers may perceive a heightened urgency to prepare learners for their final examinations and future pathways. This focus could lead to a belief that technology, such as smartphones and tablets, is essential for enhancing study skills, accessing educational resources, and facilitating revision.

However, the absence of learners from Grades 8, 9, 10, and 11 may limit teachers' perspectives on the developmental needs of learners at various stages of their educational journey. Teachers might not consider how technology use varies across different grade levels, potentially resulting in a narrow approach to integrating digital tools. They may also miss out on opportunities to cultivate digital literacy and responsible technology use earlier in the learners' academic careers.

The concentrated focus on Grade 12 learners could drive teachers to prioritise immediate academic outcomes over long-term engagement strategies. This emphasis might lead to a more utilitarian view of technology, where devices are seen primarily as tools for exam preparation rather than as resources for fostering a broader range of skills and creativity. While the singular focus on Grade 12 underscores the importance of technology in preparing learners for their futures, it may also restrict teachers' understanding of how to effectively integrate smartphones and tablets throughout the entire secondary education experience.

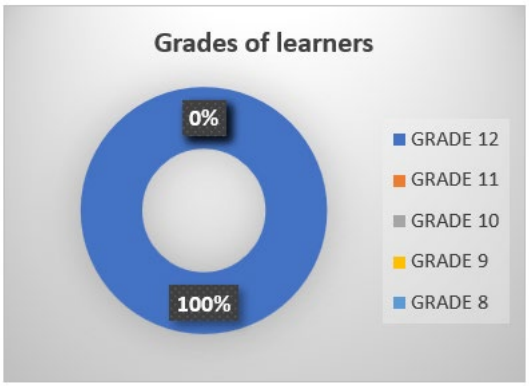


Figure 4.5: Grade of learners

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4.3. STEPS OF DATA ANALYSIS AND PRESENTATION

Data analysis involves gathering and organising information to draw conclusions (Kent, 2020). In this study, content analysis was applied to the collected data. According to Lester, Cho and Lochmiller (2020), content analysis is a systematic method for interpreting qualitative data. It was used to identify, summarise, and extrapolate the perspectives of research participants.

Content analysis is a favoured qualitative research technique, offering a methodical and unbiased approach to describing and measuring phenomena, particularly in textual data (Gheyle & Jacobs, 2017). This method entails a thorough examination of communication in various forms, including spoken language, written text, visuals, and symbolic objects. Unlike thematic analysis or narrative analysis, content analysis focuses on the existence, meanings, and relationships of specific words, ideas, or concepts within the research material (Islam, 2020). Historically, content analysis was primarily a quantitative technique that counted occurrences of specific words or phrases, but it has evolved into qualitative content analysis, which incorporates qualitative elements by interpreting subtleties, context, and underlying meanings within the content.

Qualitative content analysis typically involves three main stages:

- **Step 1: Preparation**

In this initial stage, the researcher selects the material to be studied, such as relevant interview transcripts. The researcher immerses herself in the material to form preliminary impressions and gain a general understanding.

- **Step 2: Organising**

During this phase, the content is divided into manageable sections, usually through coding. Each segment of content is assigned a code that represents a single idea. Depending on the research approach, codes may be pre-defined, emergent, or a combination of both.

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- **Step 3: Reporting and Interpreting**

The final stage involves analysing the coded segments to identify themes or patterns. These themes are then explained within the broader context of the study issue, which may include drawing conclusions, determining implications, or developing new theories.

4.4. EMERGENT THEMES AND SUBTHEMES

Guided by the research objectives, the researcher identified emerging themes from the data collected. The specific objectives of this study included:

- To identify the challenges that teachers perceive in leveraging smartphones and tablets as educational tools in the class.
- To explore teachers' attitudes towards the use of smartphones and tablets by learners in schools.
- To examine the effects of using smartphones and tablets in learning in the classroom.

Table 4.1: Emerging Themes from Gathered Data

Themes	**Sub-themes**
4.4.1. Challenges in Leveraging Technology.	4.4.1.1. Access and Equity. 4.4.1.2. Distraction and Misuse. 4.4.1.3. Technical Issues.
4.4.2. Attitudes Towards Technology Use.	4.4.2.1. Positive Perception. 4.4.2.2. Doubts and Resistance.
4.4.3. Effects of Technology on Learning.	4.4.3.1. Enhanced Learning Opportunities. 4.4.3.2. Preparation for Future Challenges. 4.4.3.3. Impact on Teaching Practices.

4.4.1. Challenges in Leveraging Technology

The challenges in leveraging technology, such as access disparities, concerns about distractions, and technical issues, significantly shape teachers' perceptions of

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secondary school learners' use of smartphones and tablets. Teachers may view these devices as double-edged swords; while they recognise their potential to enhance learning and engagement, they also worry about inequities and potential misuse in the classroom. These concerns can lead teachers to adopt a cautious approach, limiting their willingness to fully integrate technology into their teaching practices. The effectiveness of smartphones and tablets as educational tools may be undermined, affecting both teaching strategies and learner learning outcomes. This theme is presented in 3 sub-themes.

4.4.1.1. **Access and equity**

Access and equity issues can significantly influence how teachers perceive and implement smartphone and tablet use in their classrooms, often leading to a more cautious or conservative approach to technology integration.

Generally, teachers had a common understanding of how access and equity in having these smartphones and tablets affect learners' learning.

As T1 stated that:

> *If we check, some learners have the latest devices, while others may not have access to any. This can create unequal learning opportunities for our learners and also leave some behind, especially during activities that require the use of personal devices.*

As it was also supported by T2, who shared that:

> *These learners they don't bring their gadgets in their daily bases or every day, which means that as a teacher, if maybe I have prepared that today we are going to focus on this kind of activity which will be filled in their gadgets and then they don't bring them, it will be disadvantageous to us, but then importantly is that they don't bring their gadgets every day, which delays our assessment activities.*

The comments from T1 and T2 illustrate a shared concern among teachers regarding access and equity in the use of smartphones and tablets for learning. They highlight how disparities in device ownership can create unequal learning opportunities, with some learners benefiting from advanced technology while others are left behind. The first teacher's observation about the latest devices underscores the potential for educational inequity, as learners without access may struggle during activities that

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require personal devices. Similarly, Teacher 2 emphasises the inconsistency of learners bringing their gadgets to school, which disrupts lesson planning and assessment processes.

This situation reflects a broader trend noted by researchers such as Nikolopoulou (2020), who found that disparities in access to technology can exacerbate achievement gaps in education. Moreover, Onyema (2019) pointed out that without equitable access to digital tools, the promise of technology to enhance learning can remain unfulfilled, leading to an educational environment where some learners are systematically disadvantaged. These insights highlight the urgent need for solutions that ensure all learners have reliable access to technology, enabling equitable learning experiences.

4.4.1.2. **Distraction and misuse**

Distraction and misuse of smartphones and tablets can significantly impact teachers' perceptions of their use in the classroom. Teachers may view these devices as potential sources of distraction, leading to concerns that learners will prioritise non-educational activities over learning. This perception can result in a cautious approach to technology integration, as teachers worry that learners may not stay focused during lessons. Instances of misuse can diminish the perceived effectiveness of technology as a learning tool, prompting teachers to revert to traditional methods to maintain classroom discipline. These concerns can hinder the full potential of smartphones and tablets in enhancing educational engagement and outcomes.

The participants in this study, both teachers and learners, believe that these devices cause distraction, and some misuse happens when learning is taking place.

T1 stated that:

> *We usually encounter several challenges, like most learners, as much as they're using those smartphones during the lesson, they can easily become distracted, they can easily get distracted by social media or games, or also they can get distracted due to the lack of digital literacy sometimes. Even peer pressure can cause them to misuse this device during the lesson, where they can use the device for wrongdoings and all that.*

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L1 supported by mentioning that:

> *When there's an incoming phone call from someone I'm related to or there's an incoming message, or maybe let's just say WhatsApp, then I have to leave my schoolwork and focus on the phone call or WhatsApp.*

A similar explanation was given by Teacher 3, who stated that:

> *In this case, I would say that they do impact them in a positive way, but in most cases, they impact them in a negative way because you'll find that sometimes when you're busy conducting a lesson, learners will be busy playing games, and sometimes, they will be busy playing music or watching videos.*

The principal 2 also mentioned the report from the teachers, which is that:

> *What I heard is that some learners are using the tablet not to benefit themselves; they spend time playing games, so most teachers or one teacher complained about learners playing games instead of using the tablets to enhance his or her studies.*

The perspectives of teachers, learners, and principals in this study reflect the patterns identified in the literature. Participants reported that smartphones and tablets often serve as sources of distraction, with learners engaging in non-educational activities during class. Teacher 1 highlighted issues of digital literacy and peer pressure, which aligns with Nikolopoulou's (2020) findings on how limited competency can lead to misuse. Teacher 3 and Principal 2 also noted that learners frequently use devices for entertainment rather than learning, echoing Selwyn's (2016) concern regarding the absence of clear guidelines for technology use.

These findings suggest that the potential benefits of smartphones and tablets are not automatically realised in classrooms. Instead, teachers must actively implement strategies and provide guidance to promote responsible use. The study underscores the need for interventions that enhance digital literacy, establish clear expectations, and manage peer influence to ensure technology serves as a productive educational tool rather than a distraction.

Research highlights the dual nature of technology in educational settings, where smartphones and tablets can both support learning and cause distractions. Khlaif (2018) examined the impact of social media on learner performance and found that

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frequent engagement with platforms like Facebook can negatively affect academic outcomes. Similarly, Khlaisang et al. (2023) reported that learners who frequently use their smartphones during class tend to have lower GPAs, reinforcing the notion that distractions can interfere with learning.

Digital literacy and peer influences also play a role in the misuse of technology. Nikolopoulou (2020) observed that learners with limited digital competency are more susceptible to misusing devices, particularly in environments where peer pressure encourages social rather than academic engagement. Selwyn (2016) further argued that without clear guidelines and institutional support for technology use, learners often gravitate toward entertainment applications rather than educational content.

4.4.1.3. Technical issues

Technical issues refer to the challenges that arise when using smartphones and tablets in education, which can significantly impact teachers' perceptions and integration of these devices in the classroom. Frequent problems such as software malfunctions, connectivity issues, and device failures can lead to frustration and a lack of confidence among teachers. As a result, teachers may hesitate to incorporate technology into their lessons, opting instead for traditional methods.

As the T3 stated that:

In most cases, they experience network problems because in our area, we don't have towers.

While L2 stated a different problem:

> *Sometimes it might be possible that I may come with the tablet without being charged, which prevents me from learning the specific topic being studied in the classroom.*

The statements from T3 and L2 highlight critical technical issues that hinder the effective use of smartphones and tablets in education, impacting teachers' perceptions and integration of these devices. Teacher 3's mention of network problems due to a lack of infrastructure underscores a common barrier.

The research by Warschauer (2011) emphasises that inadequate internet access can severely limit the potential of technology in the classroom, preventing the utilisation of

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online resources. Meanwhile, Learner 2's comment on arriving with an uncharged tablet reflects another logistical challenge, echoing Ertmer's (2001) findings on how device readiness is crucial for successful technology integration. These technical difficulties can lead to frustration, diminishing teachers' confidence in using technology, and prompting them to revert to traditional teaching methods. As Hwang and Wu (2014) note, such disruptions can also impede learners' learning experiences, further exacerbating educational inequities.

4.4.2. Attitudes Towards Technology Use

Attitudes Towards Technology Use refers to the perceptions and feelings that teachers and learners have about using smartphones and tablets in educational settings. Positive attitudes can lead to greater integration of technology into lessons, enhancing engagement and learning outcomes. Conversely, negative attitudes often stemming from concerns about distractions, technical issues, or lack of training can result in reluctance to adopt these tools. These attitudes significantly influence how effectively technology is implemented in the classroom and its overall impact on the learning experience.

4.4.2.1. Positive perception

Positive Perception refers to the favourable attitudes and beliefs that teachers and learners hold towards the use of smartphones and tablets in educational settings. When teachers and learners view these devices as valuable tools for enhancing teaching and learning, it can lead to greater integration of technology in the classroom. Teachers with a positive perception recognise the potential of technology to engage learners, facilitate personalised learning, and provide access to a wealth of resources. This enthusiasm can inspire innovative teaching methods and encourage collaboration among learners.

Learners who perceive technology positively are more likely to embrace its use, seeing it as a way to enhance their learning experiences, access information, and engage with educational content actively.

As teachers shared their views on attitude towards these devices, T1 stated that:

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> *I believe that these smartphones and tablets have great potential in education, only if they're used responsibly. These technological devices, such as tablets and smartphones, are usually used as a resource or a tool that ensures teaching and learning go through effectively.*

This was also mentioned by P1, who mentioned that:

> *I think that most teachers have adapted to using tablets in the classroom, even though there are some teachers who are from old school, so they are not used to teaching using a tablet or smartphone, but they are really adapting very well.*

P2 supported by mentioning that:

> *According to my experience, we have positive attitudes towards the use of tablets and smartphones in the classroom. If all learners have access to these devices, they can enhance learning and teaching.*

The concept of positive perception highlights the constructive attitudes that both teachers and learners hold toward the use of smartphones and tablets in educational settings. Teacher 1 emphasised the potential of these devices to enhance teaching and learning when used responsibly, reflecting a recognition of their pedagogical value. Similarly, Principal 1 noted that teachers are gradually adapting to technology, indicating a growing acceptance and integration of digital tools within classroom practices. Principal 2 further reinforced this perspective by highlighting that providing learners with access to tablets can enhance engagement and learning outcomes. Together, these insights suggest that when teachers and learners view technology positively and are supported in its responsible use, smartphones and tablets can serve as effective tools that enrich the teaching and learning experience.

Research highlights that positive perceptions of technology play a crucial role in enhancing teaching and learning. Li and Ma (2010) argue that the integration of digital tools, such as smartphones and tablets, can significantly increase learner engagement and expand access to educational resources. Similarly, Ertmer (2001) emphasises that teachers' attitudes toward technology are shaped by professional development and training, which foster confidence and willingness to incorporate digital tools effectively into classroom practices. Studies by Hwang and Wu (2014) further suggest that providing learners with access to technological devices promotes collaborative learning, active participation, and improved academic outcomes. Collectively, this

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literature demonstrates that both teacher and learner perceptions, alongside access and support, are critical factors in maximising the educational benefits of technology in the classroom.

4.4.2.2. Doubts and resistance

Doubts and Resistance refer to the doubts and reluctance that teachers and learners may have towards the use of smartphones and tablets in education. These doubts can stem from various factors, including concerns about distractions, inadequate training, or negative past experiences with technology. For teachers, doubts may manifest as a reluctance to integrate these devices into their lessons, fearing that they could undermine traditional teaching methods or disrupt classroom dynamics. Learners might resist using technology due to unfamiliarity or anxiety about navigating new devices and applications. These doubts can significantly impact the effectiveness of technology implementation in the classroom. If teachers and learners are not fully on board with using these tools, it can lead to limited engagement, ineffective learning experiences, and a failure to realise the potential benefits of technology in enhancing education.

As it was said by T2, who stated that:

> *I don't think these tablets are useful in areas such as village areas, where things are not going as expected, because in villages or in rural areas, learners are not familiar with these kinds of devices, so when you give them these devices, firstly, you need to show them how to use these devices, instead of them studying. Imagine giving a gadget to that learner; whenever you give them one, they would focus more on the device than on studying. They'll be focused on the devices because they're still new to them and not very familiar with them, so they have to learn about them. And when you give them these devices instead of them putting in the assessment activities or learning materials, they install these games, and then they focus more on those kinds of things instead of their schoolwork.*

It was also supported by T3, who said that:

> *Honestly speaking, in my own personal opinion, I would say that they are good but what I have encountered through my observation is that each activity that we want do in class we can print them out, there's no need for them to use tablets because they don't focus on academics, when it comes to tablets they only focus on their personal things they use them for TikTok videos, they use them for they use them for games, they use them for. Movies, so I wouldn't advise their child to collect a tablet for any device.*

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The other thing is about the training, which Principal 1 stated:

> *I'm not sure what to answer, but what I can say is that this tablet that we have is like having the smartphone that each and every teacher is, so it's easy for teachers to use the tablets, and also easy for learners to use the tablet because it is not different from the smartphone itself, so we have not yet introduced anything.*

The concerns raised by Teacher 2 and Teacher 3 highlight a common challenge in technology integration: without proper training and familiarity, learners may become distracted by non-academic uses of smartphones and tablets. Teacher 2 emphasised the particular difficulties in rural contexts, where learners often have limited prior experience with digital devices, leading them to focus more on learning how to use the technology rather than engaging with educational content. Principal 1 noted that the similarities between tablets and smartphones could help ease this transition, yet this observation also underscores a gap in formal training and preparation for both teachers and learners. Together, these perspectives illustrate that successful integration of technology requires not only access to devices but also adequate support, guidance, and context-sensitive strategies to ensure that learners can use them effectively for educational purposes.

Research indicates that inadequate training and support can hinder effective technology use in educational settings. Ertmer (1999) emphasises that without proper guidance, both teachers and learners may struggle to utilise digital tools effectively, resulting in disengagement and suboptimal learning outcomes. Context also plays a critical role, particularly in rural areas where learners often have limited prior experience with technology; Hwang and Wu (2014) note that merely providing access to devices is insufficient, as successful integration requires strategies that actively engage learners and ensure they focus on educational content rather than just learning to operate the devices. While familiarity with related technologies, such as smartphones, may ease transitions to tablets, gaps in training remain a significant barrier. Lim and Chai (2010) argue that effective professional development is essential for building teacher confidence and competence in integrating technology into classroom practice. Collectively, this literature highlights that for smartphones and

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tablets to be used effectively, initiatives must address training, support, and contextual considerations to ensure meaningful engagement and learning.

4.4.3. Effects of Technology on Learning

Effects of Technology on Learning pertain to the various ways smartphones and tablets influence educational outcomes and learner engagement. These devices can enhance learning by providing access to diverse resources, enabling personalised instruction, and fostering collaboration among learners. However, if not integrated effectively, they can also lead to distractions and disengagement, particularly in environments where users lack familiarity or training. Thus, the overall impact of technology on learning hinges on how well it is implemented and supported within the educational framework.

4.4.3.1. Enhanced learning opportunities

Enhanced Learning Opportunities refer to the ways in which smartphones and tablets can improve educational experiences by providing access to a wide range of resources and tools. These devices enable personalised learning experiences, allowing learners to engage with content at their own pace and according to their individual needs. Additionally, technology facilitates collaboration and communication among learners and teachers, fostering a more interactive learning environment.

The participants have different views. T1 stated that:

> *I think their smartphones and our tablet enhance learning by making it more interactive and accessible. They also support multimedia learning, which means they offer quick information and encourage learners to improve their understanding throughout the course.*

Teacher 1 was supported by Teacher 3, who stated that:

It enhances learning because it's much easier to access activities as much easier to access past question papers.

Even though T1 and T3 have the same views, Teacher 3 differs from both of them and stated that:

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> *On my point of view, I don't think this tablet is useful in our areas such as village areas, whereby things are not going accordingly, because in villages or in rural areas, lenders are not familiar with these kinds of devices, so when you give them these devices, firstly you need to show them how to use these devices which instead of them studying. Imagine giving a gadget to that learner; whenever you do, they will focus more on the device than on studying. They'll be focused on the devices because they're still new to them and not very familiar with them, so they have to learn about them. And when you give them these devices instead of them putting in the assessment activities or learning materials, they install these games, and then they focus more on those kinds of things instead of their schoolwork.*

Teacher 1 emphasised the interactivity and accessibility of smartphones and tablets, reflecting a belief that these devices can enhance engagement and facilitate learning through multimedia resources. In contrast, Teacher 3 highlighted challenges in rural areas, where learners' unfamiliarity with technology can hinder its effective use. This suggests that while teachers recognise the potential benefits of technology, its impact is strongly influenced by contextual factors, such as prior experience, access to training, and support in navigating digital devices.

Research has consistently highlighted the educational benefits and challenges of technology integration. Mayer (2009) notes that interactive and accessible digital tools, such as smartphones and tablets, can support multimedia learning, enhancing learners' understanding and engagement. At the same time, studies have shown that without adequate training and support, technology can be ineffective or even counterproductive. Ertmer (1999) emphasises that learners may struggle to focus on academic tasks and instead become distracted by non-educational content if they are unfamiliar with the devices or lack guidance on their use. These findings underscore that successful technology integration requires both access to digital tools and structured support for learners and teachers.

4.4.3.2. Preparation for future challenges

This refers to the role of smartphones and tablets in equipping learners with the skills and knowledge needed to navigate an increasingly digital world. These devices can help foster critical thinking, problem-solving, and adaptability, which are essential for future academic and career success. By integrating technology into education,

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learners can develop digital literacy and other competencies that prepare them for the challenges of a rapidly evolving job market.

The P2 shares a view that:

> *According to teachers feedbacks I think it too important in teaching and learning especially in the next years because if you can check the world is changing everything is about technology so I think if we start now than later it will be much better because in the next coming year will be most required to use only technology so if we start with them now they'll be more used to the technology in the upcoming year.*

This was supported by P3, who stated that:
Everything is changing due to the fourth industrial revolution. It is important to learn and to use these devices as soon as possible.

Preparation for Future Challenges underscores the critical role of smartphones and tablets in developing the skills necessary for success in a technology-driven world. Principal 2 emphasises the urgency of integrating technology into education now, as it will become increasingly essential in future academic and professional environments. This proactive approach can help learners become more comfortable and proficient with digital tools over time. Principal 3's reference to the Fourth Industrial Revolution highlights the transformative impact of technology across industries, reinforcing the notion that early exposure to these tools is vital for learners' readiness in a rapidly changing job market.

Supporting literature, such as the work of Schwab (2016), discusses how the Fourth Industrial Revolution is reshaping economies and job requirements, making digital literacy a fundamental competency. The same author adds that fostering critical thinking and adaptability through technology is essential for preparing learners for future challenges. Together, these perspectives advocate for immediate and effective integration of technology in education to equip learners for success in an evolving landscape.

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4.4.3.3. Impact on teaching practices

These devices can enhance learning by providing access to diverse resources, enabling personalised instruction, and fostering collaboration among learners. However, if not integrated effectively, they can also lead to distractions and disengagement, particularly in environments where users lack familiarity or training.

P2 shared a view that:

> *I think that the use of a smartphone has changed a lot in terms of strategy because most of the teachers were used to using the traditional method of teaching, but I think now they have really adapted to using different strategies because most of the learners can actually see what action is being done.*

The P1 added further that:

> *What I can say is that we use tablets to give learners previous question papers, so it also assists us, as a small school, in saving stationery.*

T1 also added that:

> *One thing that I have observed is that if this device is used properly, it can increase our learners' understanding through engagement, and also, they can improve their research skills because in Grade 12, they usually have research on a certain subject. Also, it encourages independent learning, which means a learner can learn on their own without the help of a teacher. However, if ever we were not providing a proper guidance which it means that these devices they can also reduce all those stuff that we mentioned about one that we mentioned that it can increase learner engagement and improve their skills.*

T3 concurred that:

> *Oh, what have observed is that, they do use them for educational purposes but others they don't use them for that or something which is not even educational, so what I can say is that it's 50/50 when it comes to this one, you can say that what have observed is good they use them for past question papers, some are ahead when it comes to academics but then others are far behind because of the same device.*

P2 notes that the shift from traditional teaching methods to more adaptive strategies reflect the potential of technology to enhance visual learning and engagement. P1 highlights the practical benefits of tablets, such as reducing stationery costs while

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providing access to past exam papers, which can facilitate preparation. T1 stresses the importance of proper guidance in using these devices, indicating that when used effectively, they can enhance learner engagement, research skills, and independent learning. However, without adequate support, these benefits may not be realised. T3 points to a mixed impact, where some learners use devices for educational purposes while others may become distracted, suggesting that the effectiveness of technology in education can vary significantly among learners.

Supporting literature, such as the works of Hattie (2009) on visible learning, emphasises that educational interventions, including technology integration, must be well-implemented to achieve desired outcomes. Additionally, studies by the International Society for Technology in Education (ISTE) highlight the necessity of training and support for teachers to effectively leverage technology in their teaching practices. Overall, while the potential for enhancing learning is significant, thoughtful implementation and ongoing support are essential to maximise the benefits of technology in education.

These are other factors influencing teachers' perception of the use of smartphones and tablets for learning.

4.5. CONCLUSION

This chapter presents an analysis of data gathered through qualitative interviews; several key themes emerged regarding the benefits and challenges of technology integration. The demographic data indicated a predominance of younger teachers, which may foster a progressive attitude towards technology. However, concerns about access and equity highlighted disparities in device ownership that could hinder learning opportunities. Attitudes towards technology varied, with positive perceptions linked to improved learning outcomes, while doubts arose from technical issues and the need for training. The mixed experiences of teachers highlighted the necessity for ongoing professional development. The effects of technology on learning revealed both enhanced opportunities and challenges in learner engagement. The next chapter summarises the main findings from the study and concludes with recommendations from the study.

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CHAPTER FIVE

SUMMARY OF FINDINGS AND RECOMMENDATIONS

5.1. INTRODUCTION

The previous chapter discussed the findings, analysis, and interpretation of the study. This chapter presents the overview, summary, conclusion, and recommendations of the study. The discussion was done under the following subheadings, which were derived from the research objectives.

The objectives of the study were as follows:

- To identify the challenges that teachers perceive in leveraging smartphones and tablets as educational tools in the classroom.
- To explore teachers' attitudes towards the use of smartphones and tablets by learners in schools.
- To examine the effects of using smartphones and tablets in learning in the classroom.

5.2. OVERVIEW OF THE STUDY

Chapter 1 presented background, problem formulation and objectives. This chapter introduced the rapid growth and integration of advanced technologies, particularly smartphones and tablets, in everyday life and education. Chapter 2 presented reviews of existing literature on teachers' perceptions of smartphone and tablet use in schools, noting the absence of a uniform national policy in South Africa but the presence of some BYOD initiatives. It discussed the theoretical framework of the Technology Acceptance Model (TAM), focusing on perceived usefulness and ease of use as determinants of teachers' technology adoption. Chapter 3 outlined the qualitative, exploratory research design used to investigate teachers' perspectives on smartphone and tablet use in learning in Vhuronga 2 Circuit. Lastly, Chapter 4 presents and analyses qualitative data collected from interviews with principals, teachers, and learners.

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5.3. SUMMARY OF FINDINGS OF THE STUDY

The study explored teachers' perceptions of the use of smartphones and tablets for learning in secondary schools in Vhuronga 2 Circuit. Data collected through qualitative interviews with principals, teachers, and learners revealed several key findings aligned with the study's objectives and the Technology Acceptance Model (TAM), which highlights perceived usefulness and perceived ease of use as determinants of technology adoption. Teachers' perspectives provided insights into how these constructs shape their attitudes and practices regarding technology integration.

5.3.1. Challenges in Leveraging Smartphones and Tablets

- **Access and Equity:** Teachers highlighted concerns about unequal access to devices among learners. Some learners have the latest smartphones or tablets, while others lack access or do not bring their devices regularly to school. From a TAM perspective, this inequality affects perceived usefulness, as the benefits of technology cannot be realized consistently across all learners. Unequal availability also impacts perceived ease of use, as teachers struggle to integrate devices into lessons when not all learners can participate.

- **Distraction and Misuse:** A major challenge was learners' diversion of attention to social media, games, or messaging apps during lessons, which negatively affects focus and academic engagement. Peer pressure and limited digital literacy further exacerbate misuse. Teachers' perceptions indicate that, without adequate control or training, the perceived usefulness of devices diminishes, as their educational potential is overshadowed by distractions.

- **Technical Issues:** Poor network connectivity in rural areas and uncharged devices hindered the effective use of mobile technology. These barriers reduce perceived ease of use, making it difficult for both teachers and learners to adopt the devices confidently, limiting their practical impact on learning outcomes.

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5.3.2. Attitudes Towards Technology Use

- **Positive Perceptions:** Many teachers and principals acknowledged that smartphones and tablets enhance learning by making lessons more interactive, accessible, and multimedia-rich. They reported improved learner engagement, easier access to resources such as past examination papers, and support for independent learning. These insights align with TAM's perceived usefulness, as teachers clearly recognize the educational advantages of integrating technology.

- **Doubts and Resistance:** Some teachers expressed doubts, especially in rural or less technologically familiar contexts. Concerns included learners focusing more on entertainment than academics, insufficient training for both teachers and learners, and doubts about the overall usefulness of tablets compared to traditional methods. These perceptions highlight that both perceived usefulness and perceived ease of use are influenced by contextual factors, including prior experience, confidence, and access to support.

5.3.3. Effects of Using Smartphones and Tablets in Learning

- Enhanced Learning Opportunities: Participants noted that mobile devices enable personalised learning, quick access to information, and collaborative activities. This reinforces perceived usefulness, as teachers view devices as tools that support deeper understanding, motivation, and active learning.

- Preparation for Future Challenges: Teachers and principals emphasised that technology integration prepares learners for a digital future shaped by the Fourth Industrial Revolution. Early exposure to smartphones and tablets is considered crucial for developing digital literacy, adaptability, and 21st-century skills, further strengthening perceived usefulness.

- Impact on Teaching Practices: The use of smartphones and tablets prompted some teachers to adopt dynamic and visual teaching strategies, moving away from traditional lecture-based approaches. Devices also reduce costs related

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to stationery by providing digital access to learning materials. However, their effectiveness depends on proper guidance, ongoing training, and technical support, which influence both perceived ease of use and perceived usefulness according to TAM.

Teachers' perspectives reveal a complex balance of optimism and caution regarding technology integration. While many acknowledge the potential educational benefits of smartphones and tablets, concerns about access inequities, distractions, technical difficulties, and insufficient professional development temper enthusiasm. Teachers' perceptions are shaped by their experiences with device availability, learner behavior, and their own familiarity with technology, illustrating the interaction between TAM constructs and contextual realities.

The findings highlight the necessity for:

- Ensuring equitable access to devices for all learners to maximise perceived usefulness.
- Implementing clear policies and guidelines to minimise distractions and misuse, enhancing both ease of use and confidence in device integration.
- Providing ongoing professional development and support to build digital competence, strengthening perceived ease of use.
- Addressing technical infrastructure issues, especially in rural areas, to improve the reliability and usability of devices.

By addressing these factors, schools can increase teachers' perceptions of usefulness and ease of use, thereby foster more effective teaching practices and enhance learning outcomes through smartphones and tablets.

5.4. Limitations of the Study

The study faced several limitations that affect the generalizability and depth of its findings. The small sample size of nine participants from only three secondary schools in Vhuronga 2 Circuit limits the applicability of results to broader contexts. Purposive sampling may have introduced selection bias, potentially overlooking diverse teacher

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perspectives. Focusing solely on Grade 12 learners restricts understanding of technology use across other grade levels. Data collected through self-reported interviews was influenced by social desirability bias, potentially affecting authenticity.

Technical challenges, such as poor network connectivity and uncharged devices, constrained participants' engagement, limiting the perceived ease of use of smartphones and tablets in line with TAM. The study did not extensively explore the availability or effectiveness of teacher training and technical support, which are crucial for both perceived usefulness and perceived ease of use. The researcher's positionality and bias, along with the snapshot nature of the study, may affect the objectivity and relevance of the findings over time. Finally, variations in language proficiency among participants impacted the clarity and depth of responses, influencing how teachers articulated their perceptions of technology integration.

5.5. Recommendations from the Study

Based on the findings and the TAM framework, the following recommendations address teachers' perceptions and experiences regarding the use of smartphones and tablets in secondary education:

5.5.1. Professional Development Programs

The predominance of younger teachers (58% with 1–5 years of experience) suggests openness to innovative teaching practices. To increase both perceived usefulness and perceived ease of use, the Department of Education, in collaboration with school management and teacher training institutions, should implement comprehensive professional development programmes. These programmes should enhance teachers' digital literacy, confidence, and competence in integrating smartphones and tablets into teaching. Workshops, ongoing support, and practical training can help teachers feel confident that devices are both effective tools for learning and easy to use in their classrooms.

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5.5.2. Equitable Access to Technology

Disparities in learners' access to devices limit perceived usefulness, as benefits cannot be realized uniformly. The Department of Education, in partnership with school management, local government, and community stakeholders, should provide underprivileged learners with devices to ensure equitable opportunities for participation. Schools should implement programs under this guidance to guarantee that all learners have access to the necessary technology, thereby supporting teachers' confidence in using these tools effectively.

5.5.3. Clear Guidelines and Policies

Concerns about distraction and misuse reduce teachers perceived ease of use and perceived usefulness of devices. The Department of Education, in collaboration with school management and teachers' representative bodies, should establish clear, collaboratively developed policies to mitigate these challenges. Involving teachers in designing acceptable-use rules enhances ownership, commitment, and adherence, ensuring devices are used primarily for educational purposes.

5.5.4. Facilitate Collaboration and Sharing

Teachers' experiences varied widely, indicating the need for a collaborative approach. The school management, in collaboration with teacher development coordinators and professional teacher associations, should encourage teachers to share best practices and successful strategies. This fosters collective problem-solving and enhances perceived ease of use, as teachers learn practical ways to integrate devices confidently into lessons. Creating a community of practice under this guidance can support continuous professional learning and mutual reinforcement of technology adoption.

5.5.5. Regular Feedback Mechanisms

Diverse experiences among teachers and learners highlight the need for ongoing feedback. The school management, in collaboration with teachers and learner

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councils, should implement regular mechanisms for sharing experiences and challenges related to technology use. This feedback can inform continuous improvements and adaptations to technology integration strategies, enhancing both perceived usefulness and ease of use for teachers.

5.5.6. Infrastructure Improvements

Technical issues, such as poor internet connectivity and uncharged devices, limit effective technology use. The Department of Education, with support from school management and local government authorities, should advocate for and implement improvements in school infrastructure, particularly in rural or underserved areas. Addressing these technical barriers ensures that devices can be reliably used in classrooms, increasing teachers' confidence in integrating smartphones and tablets into learning.

By implementing these recommendations, educational stakeholders can strengthen teachers' perceptions of usefulness and ease of use, which are critical according to TAM, while addressing the practical, social, and technical factors that influence technology adoption. This approach enhances teaching and learning experiences, promotes equitable access, and prepares learners for the demands of a digital, technology-driven world.

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APPENDIX A1: INTERVIEW SCHEDULE FOR SCHOOL PRINCIPALS

Study Topic: Teachers' Perceptions on Learners' Use of Smartphones and Tablets for Learning in Vhuronga 2 Circuit

SECTION 1: BIOGRAPHICAL INFORMATION OF PARTICIPANTS

1.1 Gender

Male	Female	Non-binary	Prefer not to say

1.2 Age

18-24	25-34	35-44	45-54	55 and above

1.3 Teaching experience in years

1-5 years	6-10 years	11-15 years	More than 15 Years

1.4 Highest qualification obtained

Diploma in Teaching	Bachelor's Degree	Honours Degree	Master's Degree	Doctorate

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SECTION 2: CONTEXTUAL QUESTIONS

2.1 What is your opinion of teachers' general attitudes towards the use of tablets and smartphones in the classroom?

2.2 In your opinion, how have smartphones and tablets changed the teaching strategies of your teachers?

2.3 What feedback have you received from teachers about the impact of mobile devices on learners' engagement and motivation?

2.4 How do teachers express their concerns regarding distractions caused by smartphones and tablets during lessons?

2.5 What kind of training or support do you think teachers need to effectively integrate smartphones and tablets into their teaching practices?

2.6 What are your views on the effectiveness of using mobile devices for assessments and providing feedback to learners?

2.7 What initiatives have you introduced to help teachers develop their skills in using smartphones and tablets for educational purposes?

2.8 How do you envision the role of smartphones and tablets evolving in your school's educational framework in the coming years, according to teachers' feedback?

THANK YOU FOR SHARING YOUR EXPERIENCES

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APPENDIX A (2): INTERVIEW SCHEDULE FOR SCHOOL TEACHERS

Study Topic: Teachers' Perceptions on Learners' Use of Smartphones And Tablets for Learning In Vhuronga 2 Circuit

SECTION 1: BIOGRAPHICAL INFORMATION OF PARTICIPANTS

1.1 Gender

Male	Female	Non-binary	Prefer not to say

1.2 Age

18-24	25-34	35-44	45-54	55 and above

1.3 Teaching experience in years

1-5 years	6-10 years	11-15 years	More than 15 Years

1.4 Highest qualification obtained

Diploma in Teaching	Bachelor's Degree	Honours Degree	Master's Degree	Doctorate

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SECTION 2: CONTEXTUAL QUESTIONS

2.1 What challenges do learners encounter when using smartphones and tablets during lessons?

2.2 How do you believe distractions from mobile devices impact learners' focus and engagement?

2.3 Have you noticed any inconsistency in access to devices among learners? How does this impact their learning?

2.4 What technical difficulties do learners often face with these devices in the classroom?

2.5 What is your overall attitude toward the integration of smartphones and tablets in educational activities?

2.6 Why do you think that the use of smartphones and tablets enhances learners' learning?

2.7 What are the essential resources for teachers to effectively utilise these devices?

2.8 What effects have you observed from learners using smartphones and tablets for educational purposes?

2.9 How does the use of smartphones and tablets influence learners' collaboration and communication?

THANK YOU FOR SHARING YOUR EXPERIENCES

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APPENDIX A (3): INTERVIEW SCHEDULE FOR SCHOOL LEARNERS

Study Topic: Teachers' Perceptions on Learners' Use of Smartphones and Tablets for Learning in Vhuronga 2 Circuit

1. **BIOGRAPHICAL INFORMATION OF PARTICIPANTS**

1.1 Gender

Male	Female	Non-binary	Prefer not to say

1.2 Age

13-14 years	15-17 years	18-20 years	21-23 years	24 years and above

1.3 Current Grade

Grade 8	Grade 9	Grade 10	Grade 11	Grade 12

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SECTION 2: CONTEXTUAL QUESTIONS

2.1 How often do you use your smartphone or tablet for educational purposes in class?

2.2 What specific apps do you find most helpful for your studies, and why?

2.3 Can you describe a situation where using your device enhanced your understanding of a topic?

2.4 What challenges do you face when using smartphones or tablets to learn in the classroom?

2.5 What distracts you from staying focused while using your device?

2.6 How do your teachers support or guide you in using these devices for learning?

2.7 How do you use your smartphone and tablet to collaborate with classmates on assignments or projects?

2.8 In what ways have access to smartphones and tablets improved your learning experience?

2.9 How do you prefer to receive feedback on your work when using digital tools?

2.10 Looking ahead, how do you envision the role of smartphones and tablets in your education?

THANK YOU FOR SHARING YOUR EXPERIENCES

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APPENDIX B: UNIVERSITY RESEARCH ETHICS

RESEARCH ETHICS COMMITTEE

UNIVEN Informed Consent

LETTER OF INFORMATION

Title of the Research Study : Teachers' perceptions of secondary schools' learners' use of smartphones and tablets for learning in Vhuronga 2 Circuit.

Principal Investigator/s/ researcher : RAMATSITSI PHULUSO

Co-Investigator/s/supervisor/s : DR D.A SINTHUMULE

Brief Introduction and Purpose of the Study: This study's primary aim is to explore teacher's perceptions regarding the use of smartphones and tablets for learning in the classrooms.

Outline of the Procedures : The data will be collected using face to face individual interview, the interview will be done in your school and the interview will take about 30 minutes time.

Risks or Discomforts to the Participant: No foreseeable risks or discomforts to participants.

Benefits : They will be no benefits for participating in the study.

Reason/s why the Participant May Be Withdrawn from the Study: There will be no adverse consequences for the participant should they choose to withdraw)

Remuneration : NO

Costs of the Study : NO

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Confidentiality : No information will be shared with anyone else.

Research-related Injury : The research has harmless impact on participants.

Persons to Contact in the Event of Any Problems or Queries:

(Supervisor: D.A SINTHUMULE) Please contact the researcher (tel no. 0798922708), my supervisor (tel no. 0726508350). University Research Ethics Committee Secretariat on 015 962 9058 / Vanecia.Khoza@univen.ac.za

Complaints can be reported to the University Research Ethics Committee Secretariat on 015 962 9058 / Vanecia.Khoza@univen.ac.za or Whistle blowing Ethics Hotline Tollfree Telephone number: 0800212755 Email.univenhotline@tipoffs.com

General:

Potential participants must be assured that participation is voluntary and the approximate number of participants to be included should be disclosed. A copy of the information letter should be issued to participants. The information letter and consent form must be translated and provided in the primary spoken language of the research population

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CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, RAMATSITSI PHULUSO, about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: FHSSE/24/CSEM/28/0111.
- I have also received, read and understood the above written information (*Participant Letter of Information*) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant Date Time Signature

I, …… …… …… ……..

RAMATSITSI PHULUSO herewith confirm that the above participant has been fully

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Informed about the nature, conduct and risks of the above study.

Full Name of Researcher

…… Date……..

Signature……

Full Name of Witness (If applicable)

…… Date ……..

Signature……..

Full Name of Legal Guardian (If applicable)

…… Date……..

Signature……..

Please note the following:

Research details must be provided in a clear, simple and culturally appropriate manner and prospective participants should be helped to arrive at an informed decision by use of appropriate language (grade 10 level- use Flesch Reading Ease Scores on Microsoft Word), selecting of a non-threatening environment for interaction and the availability of peer counseling (Department of Health, 2004)

If the potential participant is unable to read/illiterate, then a right thumb print is required and an impartial witness, who is literate and knows the participant e.g. parent, sibling, friend, pastor, etc. should verify in writing, duly signed that informed verbal consent was obtained (Department of Health, 2004).

If anyone makes a mistake completing this document e.g. a wrong date or spelling mistake, a new document has to be completed. The incomplete original document has to be kept in the participant's file and not thrown away, and copies thereof must be issued to the participant.

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APPENDIX C: ETHICAL CLEARANCE

ETHICS APPROVAL CERTIFICATE

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
Ms P Ramatsitsi

STUDENT NO:
15007997

PROJECT TITLE: **Teachers' perceptions on secondary school learners' use of smartphones and tablets for learning in Vhuronga 2 Circuit.**

ETHICAL CLEARANCE NO: FHSSE/24/CSEM/28/0111

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Dr DA Sinthumule	UNIVEN, Educational Studies	Supervisor
Ms P Ramatsitsi	UNIVEN, Educational Studies	Investigator-Students

Type: Masters Research
Risk: *Minimal risk to humans, animals or environment (Category 2)*
Approval Period: October 2024 – October 2025

The Research Ethics Social Sciences Committee (RESSC) hereby approves your project as indicated above.

General Conditions
While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following.

- The project leader (principal investigator) must report in the prescribed format to the REC:
  - Annually (or as otherwise requested) on the progress of the project, and upon completion of the project.
  - Within 48hrs in case of any adverse event (or any matter that interrupts sound ethical principles) during the course of the project.
  - Annually a number of projects may be randomly selected for an external audit.
- The approval applies strictly to the protocol as stipulated in the application form. Would any changes to the protocol be deemed necessary during the course of the project, the project leader must apply for approval of these changes at the REC. Would there be deviated from the project protocol without the necessary approval of such changes, the ethics approval is immediately and automatically forfeited.
- The date of approval indicates the first date that the project may be started. Would the project have to continue after the expiry date; a new application must be made to the REC and new approval received before or on the expiry date.
- In the interest of ethical responsibility, the REC retains the right to:
  - Request access to any information or data at any time during the course or after completion of the project,
  - To ask further questions; Seek additional information; Require further modification or monitor the conduct of your research or the informed consent process.
  - withdraw or postpone approval if:
  - Any unethical principles or practices of the project are revealed or suspected.
  - It becomes apparent that any relevant information was withheld from the REC or that information has been false or misrepresented.
  - The required annual report and reporting of adverse events was not done timely and accurately,
  - New institutional rules, national legislation or international conventions A it necessary

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE
Date Considered: October 2024

Name of the RESSC Chairperson of the Committee: Prof M. Mwale-Manjoro

Signature.....

University of Venda
PRIVATE BAG X5050, THOHOYANDOU, 0950, LIMPOPO PROVINCE, SOUTH AFRICA
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APPENDIX D: PERMISSION TO CONDUCT RESEARCH

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

CONFIDENTIAL

Ref: 2/2/2 Enq: Makola MC Tel No: 015 290 9448 E-mail:MakolaMC@edu.limpopo.gov.za

Ramatsitsi P
P.O.BOX 193,
MASHAU
0993
ramatsitsip2@gmail.com

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

1. The above bears reference.
2. The Department wishes to inform you that your request to conduct research has been approved. Topic of the research proposal: **"TEACHERS' PERCEPTIONS ON SECONDARY SCHOOLS' LEARNERS' USE OF SMARTPHONES AND TABLETS FOR LEARNING IN VHURONGA 2 CIRCUIT."**

3.The following conditions should be considered:

3.1 The research should not have any financial implications for Limpopo Department of Education.

3.2 Arrangements should be made with the District or Circuit Office and the School concerned.

3.3 The conduct of research should not in anyhow disrupt the academic programs at the schools.

3.4 The research should not be conducted during the time of Examinations especially the fourth term.

3.5 During the study, applicable research ethics should be adhered to; in particular the principle of voluntary participation (the people involved should be respected).

3.6 Upon completion of research study, the researcher shall share the final product of the research with the Department.

Cnr 113 Biccard & 24 Excelsior Street, POLOKWANE, 0700, Private Bag X 9489, Polokwane, 0700
Tel:015 290 7600/ 7702 Fax 086 218 0560

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4 Furthermore, you are expected to produce this letter at Schools/ Offices where you intend conducting your research as an evidence that you are permitted to conduct the research.

5 The department appreciates the contribution that you wish to make and wishes you success in your investigation.

Best wishes.

26/03/2025

Makola MC (Ph.D) **Date**

Director: Integrated Planning, Research & Reporting

27/03/2025

Mr. Molope NM **Date**

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APPENDIX E: VERRBATIM INFORMATION OF INTERVIEWS WITH PARTICIPANTS

APPENDIX E1: VERBATIM INFORMATION FROM PRINCIPALS

P-Principals, T-Teacher And L-Learners

Q.2.1.	**What is your opinion of teachers' general attitudes towards the use of tablets and smartphones in the classroom?**
P1	They are interested in the use of a tablet so I can see that most teachers teach learners to use tablets in order to access information.
P2	I think that most teachers have adapted to using tablets in the classroom, even though there are some teachers who are old school, so they are not used to teaching using a tablet or smartphone, but they are really adapting very well.
P3	According to my experience, we have positive attitudes towards the use of tablets and smartphones in the classroom. If all learners have tablets or have access to this device, they can enhance learning or teaching.
Q.2.2.	**In your opinion, how have smartphones and tablets changed the teaching strategies of your teachers?**
P1	What I can say is that we use tablets to give learners previous question papers, so it also assists us as a small school to save stationery.
P2	I think that the use of a smartphone has changed a lot in terms of strategy because most of the teachers were used to using the traditional method of teaching but I think now they have really adapted to using different strategies because most of the learners can actually visually see what action is being done.
P3	Sometimes it can make a change, but due to the challenge of connectivity, we find that we can't use those devices because of the poor network coverage.
Q.2.3	**What feedback have you received from teachers about the impact of mobile devices on learners' engagement and motivation?**
P1	Most of the teachers they are really giving a good feedback they're only saying that teaching is a smart phone and the tablet is really helping because

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	we are moving to the world where most of the things we use technology so we should keep our learners up to date with technology now, however they are some of the teachers that are actually complaining about the use of technology because it actually distract the lesson, some of the learners are not actually using the smartphones the way that is supposed to be used in the classroom.
P2	Most of the teachers they are really giving a good feedback they're only saying that teaching with smart phone and the tablet is really helping because we are moving to the world where most of the things we use technology so we should keep our learners up to date with technology now, however they are some of the teachers that are actually complaining about the use of technology because it actually distract the lesson, some of the learners are not actually using the smartphones the way that is supposed to be used in the classroom.
P3	Like I said, it is distracting, and it causes them to move away from learning. Many learners decrease their attention span because they focus only on the device and they play games using this, which has a negative impact.
Q.2.4	**How do teachers express their concerns regarding distractions caused by smartphones and tablets during lessons?**
P1	What I heard is that some learners are using the tablet not to benefit themselves, they spend time playing games, so most teachers or one teacher was complaining about learners playing games instead of using the tablets to enhance his or her studies.
P2	Most of the teachers are saying that while they're teaching using tablets most of the learners, they are not actually using the tablets the way they're supposed to be used some of them will be playing games some of them will be on WhatsApp so I think majority of the learners are not actually using the tablet the way that they're supposed to use them.
P3	Learners can see but fail to interpret or apply the knowledge they got from the mobile devices. Learners fail to apply it because they don't know how to use it. Instead of sharing information, they use devices for competitions that they.

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Q.2.5.	**What kind of training or support do you think teachers need to effectively integrate smartphones and tablets into their teaching practices?**
P1	I think maybe if their workshop on how to use both the tablets and the traditional method, we can use tablets to give learners maybe activities or maybe spend a few minutes on tablets, rather than taking the whole period so they should have a workshop on how to use a tablet effectively.
P2	I think that the Department of Education should organize a workshop or a training so that they can be able to educate these teachers about the use of smartphones and technologies in the teaching practices and then they should also make it a concern that this is done like maybe each and every time so that if there are new strategies that the teachers have to implement or if they are somewhere that the teacher actually is struggling with the use of this technology they can be able to help them when they still a time.
P3	Training is needed, like I said, because we are living in rural areas where we lack the devices and network we are not used to these devices, and sometimes we decide not to use them at all because we were born before technology, so these devices are threats to some of us.
Q.2.6.	**What are your views on the effectiveness of using mobile devices for assessments and providing feedback to learners?**
P1	It's easy to send work and to send answers to learners.
P2	According to me I think it is very effective and fast for us as teachers to teach because with tablet and smartphones we can be able to do things much faster and quicker than using the traditional way it will take a lot time to give feedback to learn and also provide the assessment but sometimes they can also use their smartphone or tablet to download the some of the assessment or send it to them so that they can be able to use them and also save the stationary because we just send it to them than to print a lot of papers that some of them will actually throw away.
P3	It increases student engagement and motivation, especially when they use it for educational purposes. Teachers can share information and share ideas and they can be communicate at any time.

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Q.2.7.	**What initiatives have you introduced to help teachers develop their skills in using smartphones and tablets for educational purposes?**
P1	I'm not sure what to answer but what I can say is that this tablet that we have is like having the smartphone that each and every teacher is, so it's easy for teachers to use the tablets and also easy for learners to use the tablet because it is not different from the smartphone itself so we have not yet introduced anything.
P2	The initiative that you have introduced, together as teachers we have meetings whereby we share the struggles that we have with the use of smartphones and tablets and then we can all come up with strategies that can help each and every one so that we can understand how to use a smartphone and tablet better.
P3	We prefer not to use these devices in school due to the fact that we don't have a network in our school.
Q.2.8.	**How do you envision the role of smartphones and tablets evolving in your school's educational framework in the coming years, according to teachers' feedback?**
P1	True teachers feedback and what I can say is that we can introduce maybe some rules why maybe we explained to learn that these tablets are only used When a teacher is requesting the learn to use the tablet if not learners should not use the tablet so and number two learners will be encouraged to use tablet effectively maybe we can also advise that no games should be installed on the tablet.
P2	According to teachers feedbacks I think it too important in teaching and learning especially in the next years because if you can check the world is changing everything is about technology so I think if we start now than later it will be much better because in the next coming year will be most required to use only technology so if we start with them now they'll be more used to the technology in the upcoming year.
P3	Everything is changing due to fourth industrial revolution it is important to learn and to use these devices as soon as now.

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APPENDIX E2: VERBATIM INFORMATION FROM TEACHERS

P-Principals, T-Teacher And L-Learners

Q.2.1.	**What challenges do learners encounter when using smartphones and tablets during lessons?**
T1	OK, we usually encounter several challenges like most learners, as much as they're using those smartphones during the lesson, they can easily become distracted, they can easily get distracted by social media or games, or also they can also get distracted through the lack of digital literacy and sometimes. Even the peer pressure it can cause them to misuse this device during the lesson where they can use the device for wrongdoings and all that.
T2	Thank you. The challenge is that our learners encounter when using some art form during our lesson at where you may find that some of the learners are not that familiar with these smartphones. So, when we are giving them those smartphones somewhere, somehow, it's difficult for them to use them. During lessons, it means that interest instead of presenting the lesson you have to teach that learner to use that gadget, which he which takes time for us to present our inner soul, that most of the challenges that what we encounter during our lesson.
T3	In most cases, they experience network problems because in our area we don't have towers. Thank you.
Q.2.2.	**How do you believe distractions from mobile devices impact learners' focus and engagement?**
T1	OK. The distraction of these mobile devices it can usually reduce learners to focus on the engagement because of notifications that come in that can divert their attention throughout the whole lesson, which means that learners will not be able to understand or participate attentively throughout the whole lesson.
T2	Thank you. Some way somehow you may find that we gave an object or this smartphone or tablet to a learner who never owned a cellphone in their

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	previous years, when you give them that phone, they no longer focus on the lesson, they mostly focus on the those tablets, even when you are presenting the lesson, instead of viewing the document or wherever you want them to view, they won't be on such documents they will be view wherever they are view in way which is not related to the school activity in that particular time. Thank you.
T3	On this case, I would say that they do impact them in a positive way, but in most cases, they impact them in a negative way because you'll find that sometimes when you're busy conducting a lesson, learners will be busy playing games and sometimes, I will be busy playing music or watching videos.
Q.2.3.	**Have you noticed any inconsistency in access to devices among learners? How does this impact their learning?**
T1	OK, if we check some of the learners, they have the latest devices and while other learners may not have access to any, so these may create unequal learning opportunity to our learners and also leave some of our learners behind, especially during the activities that require a learner to use a personal device.
T2	Thank you. These learners they don't bring their gadgets in their daily bases or every day, which means that as a teacher, if maybe I have prepared that today we are going to focus on this kind of activity which will be filled in their gadgets and then they don't bring them, it will be disadvantageous to us, but then importantly is that they don't bring their gadgets every day, which delays our assessment activities.
T3	I have noticed inconsistency because by the end of the year we do collect the devices but you find that the following year most of the device will be damaged so some of the learners come from underprivileged families, so they are challenges and, in most cases, you find that sometimes they don't have any access to data which means that they do encounter challenges.
Q.2.4.	**What technical difficulties do learners often face with these devices in the classroom?**

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T1	In this area, we're currently. It's Ha-Mashau in this area we have network issues so learners have technical issues like poor network or Internet connectivity. These tablets have shorter battery life which means that it can switch off at any time and if ever the teacher wants to use it, which means that the lesson cannot go through it will disadvantage the learner.
T2	It's connectivity and besides connectivity is that those gadgets need chargers or batteries to operate so some of the learners, you may find that they didn't charge them fully which means it will be a disadvantage to us teachers. Thank you.
T3	The classroom has network problems, I've said that before and another thing, you find that whatever the teacher will be saying or whatever the teacher will be telling them to do it will be affected. Another problem is that others are slow and then others will be able to pick up whatever the teachers say.
Q.2.5.	**What is your overall attitude toward the integration of smartphones and tablets in educational activities?**
T1	I believe that these smartphones and tablets have great potential in education only if they're used responsibly, because these technological devices or these tablets and our smartphones they are usually used as a resource or a tool that ensures that teaching and learning go through effectively.
T2	On my point of view, I don't think this tablet is useful in our areas such as village areas, whereby things are not going accordingly, because in villages or in rural areas, lenders are not familiar with these kinds of devices, so when you give them these devices, firstly you need to show them how to use these devices which instead of them studying. Imagine you gave a gadget to that learner whenever you give them, they are going to focus more on the device instead of studying. They'll be focused on the devices because they're still new to them and they're not that familiar with them, so they have to learn them. And when you give them these devices instead of them putting the assessment activities or learning materials, they install these games and then they focus more on those kinds of things instead of their schoolwork.

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T3	Honestly speaking, in my own personal opinion, I would say that they are good but what I have encountered through my observation is that each and every activities that we want do in class we can print them out, there's no need for them to use tablets because they don't focus on academics, when it comes to tablets they only focus on their personal things they use them for TikTok videos, they use them for they use them for games, they use them for. Movies, so I wouldn't advise advising their child to collect a tablet for any devices. Thank you.
Q.2.6.	**Why do you think that the use of smartphones and tablets enhances learning?**
T1	OK. I think their smartphones and our tablet enhance learning by making it more interactive and also accessible. Actually, they also support multimedia learning, which means that they offer quick information and also encourage learner to improve their understanding throughout the whole course.
T2	On my point of view, I don't think this tablet is useful in our areas such as village areas, whereby things are not going accordingly, because in villages or in rural areas, lenders are not familiar with these kinds of devices, so when you give them these devices, firstly you need to show them how to use these devices which instead of them studying. Imagine you gave a gadget to that learner; whenever you give them one, they are going to focus more on the device instead of studying. They'll be focused on the devices because they're still new to them and they're not that familiar with them, so they have to learn them. And when you give them these devices instead of them putting in the assessment activities or learning materials, they install these games and then they focus more on those kinds of things instead of their schoolwork.
T3	It enhances learning because it's much easier to access activities as much easier to access past question papers.
Q.2.7.	**What are the essential resources for teachers to effectively utilize these devices?**
T1	OK, the resources which are reliable will need Wi-Fi because these learners they are always out of data, so if you have Wi-Fi it will be decent and also we must have a charging station because in most cases you will find that

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	learners are fighting for a plot to charge and also they must have like the access to all the quality educational apps which will guide them throughout the whole teaching and learning program processes, and also there might also be clear usage on the policies and also the technical processes which are crucial.
T2	Essentially, roses are for teachers to effectively utilize. This question is a little bit difficult but let me try to understand it on my way. What are the essential resources for teachers to effectively utilize? Can you please go to 2. 8. Then we will come to this.
T3	Teachers can implement rules and regulations regarding the use of tablets. When they hand them over to learners, they should provide them with rules and regulations.
Q.2.8.	**What are effects have you observed from learners using smartphones and tablets for educational purposes?**
T1	OK, one thing that I have observed is if this device is used properly. They are used properly. Let's emphasize this, which means that this device can increase our learners, through engagement and also, they can also improve their research skills because at Grade 12 they usually have research on a certain subject and it also encourages independent learning, which means a learner can learn on their own without the help of a teacher. However, if ever we were not providing proper guidance which it means that these devices they can also reduce all those stuff that we mentioned about one that we mentioned that it can increase student engagement and improve their skills.
T2	They don't focus on educational purposes or assessment. Usually or most of the time, you will find them playing games instead of using that particular gadget for their educational activities. Thank you.
T3	OH, what have observed is that, they do use them for educational purposes but others they don’t use them for that or something which is not even educational, so what I can say is that it's 50/50 when it comes to this one, you can say that what have observed is good they use them for past question papers, some are ahead when it comes to academics but then others are far behind because of the same device.

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Q.2.9.	**How does the use of smartphones and tablets influence learners' collaboration and communication?**
T1	OK, the use of these smartphones and this tablet it enhance or increase this collaboration and communication among our learners through the group chat because through this smartphones that they have or the tablet, they can have a group chat which they interact with, this help them to also share the documents because you might find that a certain learner has downloaded a document which is relevant to what the teachers currently doing in class, which means a learner can share those documents to others.
T2	In my point of view, I don't think this tablet is useful in our areas such as village areas, whereby things are not going accordingly, because in villages or in rural areas, lenders are not familiar with these kinds of devices, so when you give them these devices, firstly you need to show them how to use these devices which instead of them studying. Imagine you gave a gadget to that learner; whenever you give them one, they are going to focus more on the device instead of studying. They'll be focused on the devices because they're still new to them and they're not that familiar, so they have to learn them. And when you give them these devices instead of them putting the assessment activities or learning materials, they install these games, and then they focus more on those kinds of things instead of their schoolwork.
T3	The communication is much easier because, let's say that maybe I am not around, I can just inform them or direct them to go through a past paper and answer an activity, I can also communicate with them through the same device. You know what to do so yeah, It's. It's OK, it's OK.

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APPENDIX E3: VERBATIM INFORMATION FROM LEARNERS

P-Principals, T-Teacher and L-Learners

Q.2.1.	**How often do you use your smartphone or tablet for educational purposes in class?**
L1	We only use it when it's necessary during those periods, like life sciences and Mathematics, only for subjects that require a lot of notes.
L2	At least three or four times per period.
L3	OK, as learners, we use our cell phones or smartphones to solve many problems or to be taught online, that's how we use our smartphones.
Q.2.2.	**What specific apps do you find most helpful for your studies, and why?**
L1	Apps such as mobile apps, question Paper apps because they offer a wide range of question papers that help one learner to know how certain questions are answered in the exam.
L2	Despite a specific app that I find most helpful for my studies, it is YouTube, and it is because it gives me advanced information on what I want.
L3	Learners, we have Apps that we use, which help us, apps that are called mathematics, physical sciences, something and there's this app called siyavula.
Q.2.3	**Can you describe a situation where using your device enhanced your understanding of a topic?**
L1	Oh yeah, there was this time where I was going to write Life Sciences and I didn't understand the sexual reproductive question and I used the smartphone to help me with how diagrams can come in questions.
L2	Yes, as I said in the last question, whenever I don't understand any topic, I go to YouTube and search for a specific topic that I don't understand.
L3	Using our smartphones helps us because we find teachers online, for example, we use YouTube, which helps us find many teachers who teach online.
Q.2.4.	**What challenges do you face when using smartphones or tablets to learn in the classroom?**

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L1	OK, the moments where I don't have a certain document which is being learned and then there's someone who has it but they don't want to share it with others, and there are times when as an individual, I don't have the data to access a certain question paper and then because of that I face difficulties.
L2	Sometimes it might be possible that I may come with the tablet without being charged and it prevents me from learning the specific topic that is being studied in the classroom.
L3	So, the challenges we face are that many of our teachers don't like us to use cell phones or smartphones and we understand because many of us do not use our smartphones for educational purposes, most of us use them for something else but not for education.
Q.2.5.	**What distracts you from staying focused while using your device?**
L1	When there's an incoming phone call from someone I'm related to or there's an incoming message or maybe let's just say WhatsApp, then I have to leave my school work and focus on the phone call or WhatsApp.
L2	The principal said that we must use the tablets if it is necessary to use them in the classroom.
L3	OK, so most of our teachers really like us to use smartphones as they allow us to communicate. For example, let's say I was not around, maybe today I was not at school, so it all it helps us to communicate, which means they may send their homework through WhatsApp.
Q.2.6.	**How do your teachers support or guide you in using these devices for learning?**
L1	We may use WhatsApp video calls in order to communicate when we don't understand.
L2	We may use WhatsApp video calls in order to communicate when we don't understand.
L3	We use WhatsApp for communication, which means we may use voice notes or video calls in order to communicate or to solve a research or an assignment.
Q.2.7.	**How do you use your smartphone and tablet to collaborate with classmates on assignments or projects?**

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L1	We have a variety of WhatsApp groups where we share question papers and documents that will be assessed. We also have an app where we collaborate and make video calls.
L2	We use WhatsApp to do video calls and discuss things that we don't understand.
L3	We use WhatsApp for communication; we can use video or voice notes to discuss those projects.
Q.2.8.	**In what ways have access to smartphones and tablets improved your learning experience?**
L1	It does not have any effect.
L2	I use my smartphone to learn, actually, I learn on YouTube. This really helps me a lot because I find many teachers who may teach things that I don't know.
L3	Let's just say I prefer voice notes and using a video or a picture so they may send a video explaining and showing how those things are done.
Q.2.9.	**How do you prefer to receive feedback on your work when using digital tools?**
L1	Through a video call, while in a video call the teacher can show me the things that must be done.
L2	Through WhatsApp or through a message.
L3	I prefer voice notes, video and explain how certain things can be done or even sending the picture.
Q.2.10.	**Looking ahead, how do you envision the role of smartphones and tablets in your education?**
L1	Oh tablets have a lot of disadvantages since it doesn't cover all the physical learning young learn from words or videos, but not on a physical world, for example let's just say we are learning a subject such as life sciences it requires a lot of physical learning, such as going to view a certain animal with physical eye than with videos, such videos can distract learners learning and makes them not to think out-of-the-box they only depend on the technological learning than thinking of the physical.
L2	Hey, it is many effects and it also degrades the innovatively.

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L3	Oh tablets have a lot of disadvantages since it doesn't cover all the physical learning young learn from words or videos, but not on a physical world, for example let's just say we are learning a subject such as life sciences it requires a lot of physical learning, such as going to view a certain animal with physical eye than with videos, such videos can distract learners learning and makes them not to think out-of-the-box they only depend on the technological learning than thinking of the physical.

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APPENDIX F: PROOF OF LANGUAGE EDITING

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19 September 2025

To whom it may concern,

RE: CONFIRMATION OF LANGUAGE EDITING

This serves to confirm that I have edited a Master's dissertation written by Phuluso Ramatsitsi (Student Number 15007997) titled Teachers' perceptions of learners' use of smartphones and tablets for learning in Vhuronga 2 Circuit.

The scope of my editing comprised:

- Spelling
- Tense
- Vocabulary
- Punctuation
- Word usage
- Language and sentence structure

If you need any further details, kindly contact me on the details provided above.

Yours faithfully



Kufakunesu Zano.

Dr Kufakunesu Zano, PhD (English). A member of the South African Translators' Institute, Ref 1000686

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APPENDIX G: SIMILARITY INDEX

RAMATSISI CHAPTER 1 - 5 SEPTEMBER 2025.pdf

ORIGINALITY REPORT

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