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GRADE 11 EDUCATORS' DIGITAL LITERACY PRACTICES AND THEIR INFLUENCE ON TECHNOLOGY INTEGRATION IN CLASSROOM INSTRUCTION

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Abstract
Digital literacy is increasingly essential for effective teaching in a rapidly evolving digital education landscape, yet many teachers continue to struggle with integrating technology meaningfully into their classroom practice. This paper explored how Grade 11 teachers' digital literacy practices influence their use of technology in the learning environment, with specific attention to the gap between the basic digital skills teachers possess and the more advanced competencies needed for effective technology integration. Although digital tools are becoming more available in South African schools, teachers' capacity to use them in pedagogically purposeful ways remains uneven, making it important to understand the factors shaping their digital literacy practices. Guided by the United Nations Educational, Scientific and Cultural Organization (UNESCO) ICT Competency Framework for Teachers (ICT CFT), the paper employed a qualitative research design within an interpretivist paradigm to examine teachers' lived experiences with digital tools. Semi-structured interviews were conducted with six purposively selected Grade 11 teachers from two high schools in the Gauteng West District. Findings indicate that teachers tend to understand digital literacy in terms of basic operational tasks such as typing, searching the internet, and preparing presentation slides. Their ability to integrate technology meaningfully was strongly shaped by unequal access to devices, infrastructure challenges, and the rapid pace of technological change. Teachers in better-resourced schools demonstrated broader digital literacy practices, while those in under-resourced schools relied more heavily on traditional teaching methods. Overall, the paper illustrates how both individual competencies and contextual conditions shape teachers' digital literacy practices and their capacity for technology-enhanced teaching.

Keywords: classroom practices; digital literacy; ICT-CFT; technology; teaching

Introduction and Background

The rapid expansion of digital learning has heightened the need for teachers to develop strong digital literacy skills, particularly as technology becomes central to improving educational quality and promoting equity. Recent studies in South Africa indicate that many educators still lack the digital competence required for effective technology-enhanced teaching, despite national initiatives aimed at modernising the education system (Nyathi & Joseph, 2024). This deficit limits teachers' ability to use technology in ways that address diverse learning needs, streamline instructional processes, and

expand learners' access to digital knowledge. Simultaneously, both global and national shifts toward digital transformation continue to raise expectations for teacher readiness, making digital literacy an essential component of contemporary teaching. According to Muyambi and Ramorola (2025), unequal access to digital tools and differences in technological support across schools further widen the gap in teachers' capacity to integrate technology meaningfully into their practice. Understanding these disparities is therefore critical for improving technology integration and ensuring that digital transformation efforts do not reinforce existing educational inequalities.

This paper examines how Grade 11 teachers' digital literacy practices shape their use of technology in the classroom within the Gauteng West District. Nyathi and Joseph (2024) note that although existing research acknowledges ongoing challenges in teachers' digital readiness, much of the literature focuses on broad measures of digital competence rather than the specific, everyday literacy practices teachers employ when working with digital tools. As a result, there is limited insight into how teachers interpret, apply, and navigate digital literacy during actual instruction. Additionally, Muyambi and Ramorola (2025) emphasise that inequalities in access to digital tools and infrastructure continue to determine what teachers can realistically achieve in technology-enhanced environments. Focusing on Grade 11 teachers in township secondary schools therefore provides an opportunity to explore these dynamics in a context where curriculum expectations are high but access to resources is uneven, offering a clearer understanding of how digital literacy operates in real classroom settings.

Building on this context, this paper addresses a significant gap in the literature: while digital competence is widely recognised as essential, limited research examines how teachers draw on digital literacy in their daily classroom practice, particularly in under-resourced schools. Existing interventions have not fully addressed the everyday constraints teachers face, reinforcing the need to study how digital literacy is enacted during actual classroom instruction. Guided by the UNESCO ICT Competency Framework for Teachers (ICT CFT), which outlines the digital knowledge required for effective technology-supported teaching, the paper builds on insights highlighted by Muyambi and Ramorola (2025), who emphasise the framework's value in identifying gaps in teachers' digital competence. Theoretically, the paper shifts attention from broad notions of digital competence to the specific digital literacy practices teachers employ during daily instruction. Practically, it provides context-responsive insights that can strengthen teacher development initiatives, especially in under-resourced schools where limited training and unequal access to digital tools continue to hinder meaningful technology use (Nyathi & Joseph, 2024). These insights can, in turn, support policymakers, school leaders, and teacher educators in fostering more equitable access to technology-enhanced learning.

Although differences in digital readiness are well documented, there is still limited understanding of how these inequalities affect teachers' digital behaviour and their capacity to integrate technology meaningfully (Muyambi & Ramorola, 2025). Some studies also assume that increased access to devices automatically leads to effective technology use, a presumption that points to the need for deeper, context-based investigation. These gaps highlight the importance of examining teachers' lived experiences, as everyday teaching demands and school environments often determine

how digital skills are applied in practice. To address these concerns, the paper asks: How do Grade 11 teachers in the Gauteng West District demonstrate and apply digital literacy in technology-enhanced teaching, and what contextual factors support or hinder these practices? This inquiry is guided by two sub-questions:

- How do Grade 11 teachers demonstrate digital literacy in planning, delivering, and managing technology-enhanced lessons?
- How do contextual factors such as infrastructure, resources, and support influence teachers' use of digital literacy in the classroom?

Literature Review

The increasing use of digital technologies in South African classrooms has drawn attention to how teachers understand and apply digital literacy in their daily teaching. However, meaningful technology use remains uneven, especially in township and under-resourced schools where limited devices, unreliable infrastructure, and inadequate practical training continue to constrain teachers' digital literacy. These challenges affect how teachers develop and apply digital skills during lesson planning, instruction, and assessment, often limiting the role that technology can play in supporting learning. In this context, the literature review examines how teachers' digital literacy is defined and developed in education, drawing on key concepts, established competency frameworks, and recent research that explores teachers' experiences with digital tools in classroom settings. By synthesising these bodies of literature, the review establishes a clear foundation for understanding how digital literacy practices develop in schools and how they shape Grade 11 teachers' capacity to use technology meaningfully in Gauteng West township classrooms. The review also justifies the use of the UNESCO ICT Competency Framework for Teachers (ICT CFT) as the conceptual lens for analysing teachers' digital literacy practices and the contextual factors that influence them.

Teachers' Digital Literacy Practices in Planning, Delivering, and Managing Lessons

A growing body of literature shows that teachers' demonstration of digital literacy during technology-enhanced teaching remains uneven, particularly in contexts where digital access and support are limited. Teane (2024) notes that many teachers continue to rely on basic digital tasks such as preparing presentation slides or searching for online materials, illustrating how limited resources and insufficient pedagogical support lead teachers toward familiar, low-complexity digital practices rather than more learner-centred approaches. Boeskens and Meyer (2025) further indicate that teachers frequently struggle to translate digital skills into instructional practices that genuinely support learning, since effective digital teaching requires not only technical ability but also the capacity to select, adapt, and manage digital resources in alignment with curriculum goals. Demonstrating digital literacy effectively involves designing lessons that promote higher-order thinking and interactive learning; meaningful integration thus depends on teachers' ability to use technology to deepen learning rather than simply digitise existing practices (Pilgrim, Vasinda & Lisenbee, 2025). Taken together, these studies suggest that while many teachers can perform basic digital tasks, their ability to use digital literacy in

transformative and pedagogically meaningful ways remains limited by structural, instructional, and training-related challenges.

These insights are especially relevant in South African township schools, where teachers' digital practices are shaped by contextual constraints that limit opportunities to integrate technology in substantive ways (Teane, 2024). According to the UNESCO ICT CFT, the patterns described above often reflect the Technology Literacy level, which involves basic operational use of digital tools. Overall, the literature emphasises the need to understand how teachers demonstrate digital literacy during planning, teaching, and classroom management, an issue central to examining Grade 11 teachers' technology-enhanced teaching in Gauteng West.

Beyond lesson planning and delivery, research also shows that teachers' demonstration of digital literacy is shaped by the broader pedagogical orientations and contextual conditions in which they work. Studies indicate that when teachers operate in environments with limited training, inconsistent technological support, or restricted access to classroom-ready digital tools, their capacity to demonstrate more complex digital literacy practices is significantly reduced, regardless of their motivation or willingness to learn (Boeskens & Meyer, 2025). This challenge is especially visible in schools serving low-income communities, where teachers often rely on outdated devices or personal mobile tools, reinforcing basic rather than transformative uses of technology (Teane, 2024). Although frameworks such as the UNESCO ICT CFT highlight the importance of integrating digital tools into pedagogical decision-making, collaboration, and classroom management, many teachers report feeling unprepared to adapt their instruction to digital environments, particularly as technologies change rapidly. International scholarship further stresses that continuous professional development, mentorship, and reflective practice are essential for supporting teachers to extend their digital literacy beyond procedural skills toward more purposeful and student-centred uses of technology (Pilgrim et al., 2025). These insights underscore the importance of investigating how Grade 11 teachers in township schools, working under uneven resource conditions, interpret and enact digital literacy during technology-enhanced lessons.

Contextual Factors That Influence Teachers' Use of Digital Literacy in the Classroom

Teachers' capacity to develop and demonstrate digital literacy is shaped not only by their individual skills but also by the conditions in which they work. Research consistently shows that contextual constraints determine whether teachers can move beyond basic digital tasks toward meaningful, pedagogical use of technology. In township schools, these constraints often intersect, limiting teachers' opportunities to practise and deepen digital literacy in real classroom settings. The following three contextual factors directly affect digital literacy development and help explain the digital practices observed among Grade 11 teachers in Gauteng West township secondary schools.

Limited Access to Devices

Limited access to reliable digital devices remains one of the most significant barriers affecting teachers' digital literacy across South African schools. Dlamini (2022) shows that when teachers have few or outdated devices, they tend to rely on simple digital

routines such as displaying slides or accessing online content rather than engaging in richer digital teaching practices that support collaboration, feedback, or interactive learning. National readiness reports similarly indicate that although device access for teachers has improved in some provinces, learner access remains inconsistent, making it difficult for teachers to plan lessons that include whole-class digital engagement (South Africa DSI, 2021). In township settings such as Gauteng West, these constraints often mean that teachers cannot experiment with or refine digital skills during everyday instruction, restricting digital literacy development to the most basic operational level.

Unreliable and Uneven Infrastructure

Even where devices are available, teachers' digital literacy is strongly affected by the reliability of school infrastructure particularly electricity supply, connectivity, and technical support. Gauteng-based research indicates that weak or inconsistent infrastructure often disrupts teachers' plans for digital activities, leading them to revert to traditional approaches that feel more predictable (Dlamini, 2022). National assessments of ICT readiness further show that many South African schools lack stable connectivity and adequate technical support systems, reducing opportunities for consistent classroom-based digital use (South Africa DSI, 2021). Broader ICT sector reports also highlight how load shedding and energy instability affect access to networks and devices, adding another layer of uncertainty to digital lesson planning and delivery (ICASA, 2024). In under-resourced township schools, these infrastructural challenges erode teachers' confidence and limit the kinds of digital literacy skills they can practise routinely, particularly those requiring real-time connectivity such as cloud-based tasks, digital assessments, or collaborative online activities.

Insufficient Hands-On Training and Ongoing Support

Teachers' digital literacy is also shaped by the quality and frequency of professional development they receive. Various studies highlight a significant gap between the digital competencies teachers are expected to demonstrate and the hands-on training available to them. Aluko and Ooko (2022) show that teachers often express willingness to use digital tools but lack the practical, classroom-embedded learning opportunities needed to build deeper confidence and skill. Training programmes reported in SchoolNet SA national workshops indicate that although digital training efforts exist, they vary in reach and consistency, particularly in schools serving low-income communities (SchoolNet SA, 2021). Teachers require ongoing technical and pedagogical support to integrate digital tools in ways that move beyond entry-level use. International policy analyses emphasise that professional development must be continuous, school-based, and closely tied to curriculum goals if teachers are to improve their digital literacy meaningfully (Boeskens & Meyer, 2025). For teachers in Gauteng West township schools, limited access to sustained, hands-on professional learning restricts their capacity to develop the advanced digital literacy skills required for planning, delivering, and managing technology-enhanced lessons.

Taken together, these contextual factors create an environment in which teachers may recognise the value of digital tools but lack the conditions necessary to practise and refine their digital literacy. For Grade 11 teachers in Gauteng West township secondary schools,

the combination of limited devices, unreliable infrastructure, and insufficient hands-on training produces clear constraints on their capacity to integrate technology meaningfully. Framed through the UNESCO ICT CFT, these constraints interact with the framework's six components; *Understanding ICT in Education; Curriculum & Assessment; Pedagogy; ICT (technical skills); Organisation & Administration;* and *Teacher Professional Learning* and help explain why many teachers remain at the Technology Literacy level rather than progressing toward Knowledge Deepening or Knowledge Creation.

Theoretical Framework

The UNESCO ICT Competency Framework for Teachers (ICT CFT) forms the theoretical foundation of this paper and provides an interpretive lens for understanding how teachers demonstrate digital literacy within their everyday classroom practices. In qualitative research, such a framework situates teachers' actions within broader pedagogical and contextual influences, rather than viewing digital literacy as a set of isolated technical skills. The ICT CFT conceptualises teacher competence across three progressive levels; *Technology Literacy, Knowledge Deepening,* and *Knowledge Creation* which represent increasingly complex ways in which teachers can use technology to support learning. These levels are supported by six interconnected components: *Understanding ICT in Education, Curriculum and Assessment, Pedagogy, ICT (technical skills), Organisation and Administration,* and *Teacher Professional Learning.* Together, these components highlight not only the skills teachers need, but also the pedagogical orientations, organisational conditions, and professional learning opportunities that shape how digital practices develop in real school settings. This theoretical structure supports the paper by offering a nuanced way to interpret why teachers in resource-constrained township environments tend to demonstrate mainly basic digital routines, and by pointing to the systemic and contextual supports required for progression toward more meaningful and transformative digital practices.

The ICT CFT helps interpret the patterns described in the literature review. As noted, teachers in under-resourced schools frequently rely on operational digital tasks such as preparing slides or downloading teaching materials, with limited evidence of deeper, student-centred technology use. When analysed through the ICT CFT, these practices align with the Technology Literacy level, where technology is used to support traditional teaching rather than transform it. More advanced competencies associated with Knowledge Deepening such as using digital tools to support inquiry, problem-solving, and collaboration are far less common in township contexts. Even rarer are practices associated with Knowledge Creation, where teachers design innovative digital environments, create new learning pathways, and encourage learners to produce digital artefacts. The framework thus provides a conceptual explanation for why limited resources, inconsistent infrastructure, and insufficient hands-on training contribute to stalled progression across digital literacy levels.

The ICT CFT also supports the study by providing a systematic and coherent structure through which teachers' digital literacy practices can be analysed across the different activities that constitute the teaching and learning process. For example, the framework helps differentiate between lesson planning that merely incorporates digital resources and planning that embeds digital tasks aligned with curriculum outcomes and assessment

strategies. It also clarifies how teachers' pedagogical choices are shaped by their understanding of ICT's role in learning, and how management practices such as device allocation, connectivity planning, or contingency strategies reflect their digital literacy. This structured approach ensures that the paper treats digital literacy not as a single skill, but as a multidimensional construct shaped by knowledge, pedagogy, context, and professional learning.

In addition, the ICT CFT helps identify gaps that persist both in the literature and in teachers' practices. The paper reveals that teachers often remain at entry-level technology use despite significant investments in ICT infrastructure and training. The framework clarifies that this stagnation results not only from insufficient technical skills, but from weaknesses across other components such as Curriculum and Assessment, Organisation and Administration, and Teacher Professional Learning. For instance, when teachers receive training focused primarily on operational skills without pedagogical application, they may gain confidence but fail to progress into Knowledge Deepening. Similarly, when schools lack stable electricity, connectivity, or leadership that prioritises ICT integration, teachers are deprived of the supportive environment needed to experiment with more advanced digital strategies. By highlighting these multidimensional gaps, the framework directs attention to the systemic and pedagogical changes needed to strengthen digital literacy in township schools.

Applied to the Gauteng West township context, the ICT CFT offers clear propositions for understanding teachers' digital literacy practices. It suggests that in environments where devices and connectivity are scarce or unreliable, teachers' digital practices are likely to remain concentrated within the Technology Literacy level. In contrast, schools that provide consistent coaching, curriculum-linked professional development, and supportive administrative structures are more likely to see teachers demonstrating competencies associated with Knowledge Deepening. For meaningful progression to Knowledge Creation where teachers innovatively design digital learning environments more intensive professional learning, reliable infrastructure, and leadership-driven digital support systems are required. In this way, the framework bridges theory and practice, connecting contextual challenges with theoretically grounded expectations about digital literacy development.

Furthermore, the ICT CFT provides a common language and comparative baseline essential for analysing digital literacy practices across different Grade 11 subjects and school environments in Gauteng West. Since the framework is globally recognised, it enables comparisons not only within the study's sample but also between these findings and broader international studies, strengthening the paper's contribution to knowledge by situating local insights within a wider conceptual field.

Overall, the UNESCO ICT CFT provides a robust conceptual scaffold for this paper, enabling a systematic analysis of how Grade 11 teachers in Gauteng West township schools develop, interpret, and enact digital literacy during technology-enhanced lessons. It ensures that the study is grounded in established theory, guided by a structured approach to analysis, and positioned to identify meaningful gaps and opportunities for strengthening digital literacy within under-resourced educational contexts.

Methodology

Research Approach

This study employed a qualitative research method, which is well suited for exploring complex human experiences and the meanings individuals attach to their actions (Creswell & Poth, 2018). Merriam and Tisdell (2016) further assert that qualitative research enables the collection of rich, descriptive data that provides insight into how participants interpret phenomena in their natural settings. A qualitative approach was deemed most appropriate for this study, given that its purpose was to explore how Grade 11 teachers in Gauteng West interpret and integrate digital literacy within their day-to-day instructional contexts. It enabled the researcher to investigate teachers' perspectives, experiences, and contextual challenges that cannot be adequately captured through quantitative measures (Patton, 2015).

Research Design

A qualitative case study design was adopted to explore teachers' digital literacy practices within the bounded context of township secondary schools in Gauteng West. Case studies are particularly useful for investigating contemporary phenomena within real-life settings, especially when contextual conditions are central to the research problem (Yin, 2018). This design allowed for an in-depth examination of how digital literacy is shaped by school context, resource availability, and professional experience. A case study approach also supports the integration of multiple perspectives, providing a holistic understanding of the phenomenon under investigation (Stake, 2010). Given the study's focus on how teachers navigate digital literacy within under-resourced environments, the case study approach offered the depth, flexibility, and contextual sensitivity required.

Data Collection Tools

Data were collected using semi-structured interviews, a tool widely used in qualitative research to access participants' perspectives while maintaining conversational flexibility (Cohen, Manion & Morrison, 2018). Semi-structured interviews allow researchers to probe responses, clarify meaning, and explore emerging themes. This tool was selected because it provided sufficient structure to ensure coverage of key topics related to digital literacy, while also enabling participants to describe their unique experiences with technology integration, lesson planning, classroom management, and contextual constraints. An interview guide was developed using themes drawn from the literature and aligned with the study's research questions.

Sampling Group

The study employed purposive sampling, a technique commonly used in qualitative research to deliberately select participants who possess specific knowledge or experience relevant to the research topic (Patton, 2015). Purposive sampling ensures that participants are information-rich and capable of providing deep insight into the phenomenon under study (Etikan, Musa & Alkassim, 2016). In this study, Grade 11 teachers from township secondary schools in Gauteng West were selected because they actively engage with ICT tools in curriculum delivery and are therefore well positioned to

articulate their digital literacy practices. This sampling strategy supported the study's aim of understanding the realities of technology-enhanced teaching within contexts characterised by limited resources and uneven ICT support.

Research Procedures

The research process began with obtaining permission from the Gauteng Department of Education and school principals. Once access was granted, eligible participants were identified according to the purposive sampling criteria and invited to participate. Each participant received an information sheet and signed a consent form in line with ethical guidelines for qualitative research. Semi-structured interviews were conducted face-to-face at the selected schools in quiet, private spaces to ensure confidentiality and participant comfort. Interviews lasted between 30 and 45 minutes and were audio-recorded with participants' consent. Field notes were taken to capture contextual details and non-verbal cues, which enriched the data during analysis. After data collection, audio recordings were transcribed verbatim and prepared for coding. The researcher followed an iterative, inductive thematic analysis process as outlined by Braun and Clarke (2019), identifying patterns, categories, and themes that reflected teachers' digital literacy practices and the contextual factors influencing them.

Validity and Reliability Measures

To ensure trustworthiness, the paper adopted the criteria of credibility, dependability, transferability, and confirmability as proposed by Lincoln and Guba (1985). Credibility was enhanced through member checking, whereby participants were given the opportunity to review and confirm the accuracy of the researcher's interpretations. Prolonged engagement with the research site and detailed probing during interviews also strengthened credibility (Shenton, 2004). Dependability was supported by maintaining a detailed audit trail documenting research decisions, procedures, and reflective notes, ensuring that the study could be replicated or evaluated by external reviewers.

Transferability was addressed by providing thick descriptions of the school contexts, participant characteristics, and research procedures, enabling readers to assess the extent to which findings may apply to similar settings (Creswell & Poth, 2018). Confirmability was ensured through reflexive journaling, which helped minimise researcher bias and maintain neutral, evidence-based interpretations (Merriam & Tisdell, 2016). These strategies collectively helped ensure that the findings were trustworthy and reflective of participants' genuine experiences of digital literacy in technology-enhanced teaching.

Findings

Teachers' Conceptualisation of Digital Literacy as Basic Technical Skills

Across both schools, teachers consistently described digital literacy in terms of basic operational tasks such as typing, searching for information online, downloading resources, and preparing presentation slides. Several participants articulated their understanding of digital literacy in ways that reinforced this narrow, functional orientation. Participant 1 noted:

> *"For me, being digitally literate just means I can type, search on Google, and make my PowerPoints."*

Participant 4 similarly indicated:

> *"As long as I can download what I need for my lesson, I feel confident."*

These descriptions reveal a limited understanding of digital literacy, one that is focused on functional ICT skills rather than the pedagogical or creative uses of technology. Teachers tended to equate digital proficiency with comfort in performing routine tasks, rather than demonstrating the capacity to design technology-supported learning experiences or engage learners in higher-order digital activities.

This finding aligns with the Technology Literacy level of the UNESCO ICT CFT, where teachers demonstrate basic digital competence but have not yet begun using digital tools in ways that transform pedagogy or promote student-centred learning. Many participants acknowledged this limitation, with Participant 3 explaining:

> *"I can do the basics, but when it comes to using online platforms with learners, I'm not confident at all."*

As a result, teachers' digital literacy practices remained surface-level and often disconnected from deeper curricular objectives, reflecting a persistent gap between operational competence and meaningful technology-enhanced teaching.

Uneven Movement Toward Advanced Digital Competencies

While teachers generally possessed foundational ICT skills, most had not progressed to the higher levels of Knowledge Deepening or Knowledge Creation outlined in the ICT CFT. Teachers rarely used digital tools to facilitate inquiry-based learning, support problem-solving, or design innovative digital learning environments. Instead, technology tended to serve a supplementary function, supporting traditional teaching approaches rather than transforming them. As Participant 3 noted:

> *"I can use the computer for basic things, but I don't know how to use it to make learners explore or investigate on their own."*

Teachers who attempted to utilise digital platforms for higher-order learning often found themselves constrained by limited proficiency or a lack of pedagogical models to guide technology integration. Participant 1 stated:

> *"When I try to introduce online tools, I get stuck because I don't really know the right way to use them for teaching."*

This uneven movement across the ICT CFT continuum suggests a significant gap between the digital literacy teachers currently possess and the competencies required for meaningful technology-enhanced teaching.

Infrastructural Barriers Limiting Digital Literacy Practices

A strong and recurring theme across the interviews was the influence of contextual barriers on teachers' digital literacy practices. Participants from both schools highlighted challenges related to unequal device access, unreliable connectivity, load shedding, and

insufficient technical support, all of which affected their capacity to use digital tools consistently during teaching. Participant 4 explained:

> *"Some days the Wi-Fi works, other days it doesn't, so I can't rely on it when planning my lessons."*

Participant 3 further noted:

> *"When there's load shedding, everything stops. You can't teach digitally when there's no power."*

The rapid pace of technological change also left many teachers feeling overwhelmed and unable to keep pace with new platforms or software.

Limited device availability, in particular, restricted teachers' opportunities to practise and refine digital skills. In classes where only a small number of learners had access to digital devices, teachers were compelled to rely on teacher-centred demonstration rather than facilitating hands-on digital engagement. As Participant 1 shared:

> *"I would love for learners to try the digital activities themselves, but most of them don't have devices, so I end up just showing everything from the front."*

These conditions made it difficult for teachers to apply more advanced, interactive, or collaborative digital strategies, even when they expressed a genuine willingness to do so. These findings illustrate how environmental factors and not individual competence alone shape teachers' digital literacy. They also align with the ICT CFT's recognition that organisational and infrastructural conditions are critical components for progression toward deeper, more meaningful technology integration.

Limited Professional Development Reinforces Basic-Level Practices

The paper also found that teachers lacked regular, hands-on professional development, with available training often minimal, tool-focused, or poorly aligned with classroom needs. This finding is consistent with existing literature showing that once-off workshops rarely lead to sustained changes in digital pedagogy (Aluko & Ooko, 2022; SchoolNet SA, 2021). Teachers lacked access to ongoing coaching, mentoring, or modelling elements shown to be essential for developing more advanced digital teaching practices. Without such support, teachers remained at basic skill levels and struggled to use technology in ways that support deeper learning.

A further key finding was the uneven and limited nature of ongoing professional support available to teachers. Participants reported that training was irregular, inconsistent across schools, and rarely accompanied by continued follow-up after initial workshops. This inconsistency left teachers without the guidance needed to strengthen or sustain digital teaching practices. Participant 5 expressed this frustration clearly:

> *"We only get training when there is a new tool they want us to use, and after that you are on your own. If you struggle, there is no one to show you what to do next."*

Participant 4 also highlighted the lack of practical support by noting:

> *"Most of the workshops are rushed, and no one comes back to check if we can actually apply what we learnt. It feels like they just tick a box."*

These accounts demonstrate that teachers' professional development experiences are insufficiently structured and supported, limiting their capacity to grow beyond basic ICT skills and reducing confidence in implementing technology-enhanced lessons.

Summary of Findings

The findings illustrate a complex interplay between teachers' individual digital literacy skills and the contextual conditions shaping how those skills are enacted. While teachers were generally comfortable with basic ICT tasks, their capacity to integrate technology meaningfully was constrained by limited resources, infrastructural instability, and uneven professional support. These constraints resulted in minimal progression across the UNESCO ICT CFT competency levels and significant disparities between better-resourced and under-resourced schools. Overall, the findings underscore the need for ongoing, context-responsive professional development and improved resourcing to support meaningful digital literacy development in township schools.

Discussion

This section discusses the study's findings in relation to existing literature. It highlights how teachers understand digital literacy, how they use digital tools in their teaching, and how school conditions in township contexts affect their capacity to integrate technology meaningfully. The findings suggest that teachers' digital literacy is shaped by both individual abilities and the school environment, leading to uneven technology use across schools.

Teachers' Narrow Understanding of Digital Literacy

The study found that Grade 11 teachers predominantly defined digital literacy as performing simple technical tasks such as typing, internet searching, creating slides, and downloading materials. This limited conception is consistent with what Teane (2024) and Boeskens and Meyer (2025) describe, where teachers tend to associate digital literacy only with basic operational skills.

Scholars such as Pilgrim, Vasinda, and Lisenbee (2025) argue that digital literacy should also encompass the capacity to use technology in support of critical thinking, collaboration, and creativity. However, teachers in this study rarely articulated these broader dimensions. They tended not to connect digital literacy to teaching strategies or learning goals, and this narrow understanding functions as a conceptual barrier, preventing teachers from recognising how technology can support inquiry-based learning or transform classroom practices.

Limited Use of Technology for Deep Learning

Although teachers demonstrated basic ICT competence, their classroom practices rarely extended to supporting deeper learning. Technology was used primarily to display slides, show videos, or search for information, with teachers seldom employing digital tools to facilitate collaboration, problem-solving, or learner-driven activities.

This pattern reflects international findings that teachers often struggle to use ICT in ways that strengthen pedagogy (Boeskens & Meyer, 2025). Literature also indicates that South African teachers often remain at early stages of digital skill development due to limited

opportunities to practise more advanced teaching approaches (Dlamini, 2022; Pilgrim et al., 2025). The gap between teachers' current capabilities and more advanced forms of technology use suggests that structured, ongoing support is essential. Without such support, teachers' practices remain focused on basic use rather than innovative or interactive learning activities.

Contextual Challenges Restrict Digital Literacy Growth

The study shows that daily school realities including device shortages, unstable internet connectivity, load shedding, and limited technical support significantly restrict teachers' capacity to use technology effectively. These barriers are consistent with those reported in other studies of township schools.

Teachers in this study frequently reverted to traditional teaching methods because digital tools were unreliable. Even highly motivated teachers could not consistently plan or deliver technology-based lessons due to infrastructure disruptions and the absence of adequate support. These findings emphasise that digital literacy is not shaped by individual skill alone, but also by external conditions that determine what teachers can realistically achieve.

Resource Gaps Create Unequal Digital Literacy Between Schools

A key finding was the contrast between the two schools' resource levels. Teachers in the better-resourced school used technology more confidently, experimented with a wider range of tools, and demonstrated greater willingness to innovate. Teachers in the under-resourced school had limited opportunities to practise and therefore exhibited more restricted digital use. This supports research showing that resource inequalities are a major determinant of digital literacy in South Africa (Dlamini, 2022; South Africa DSI, 2021). Where teachers have regular access to devices and internet connectivity, they are more likely to attempt more advanced digital teaching. Where such access is lacking, teachers tend to remain at basic usage levels. These school-level differences demonstrate that digital literacy development is strongly context-dependent.

Limited Professional Development Keeps Teachers at Basic Skill Levels

The study found that teachers had limited access to meaningful professional development. Training was often too brief, tool-focused, or disconnected from classroom needs. This finding aligns with research showing that once-off workshops rarely lead to long-term improvement in digital pedagogy (Aluko & Ooko, 2022; SchoolNet SA, 2021). Teachers lacked access to ongoing coaching, mentoring, or modelling elements identified as essential for developing more advanced digital teaching practices. Without such support, teachers remained at basic skill levels and struggled to use technology in ways that foster deeper learning.

Overall, the findings show that sustained, practical, and context-sensitive professional development is critical for meaningful digital literacy growth.

Synthesis: Digital Literacy Depends on Both Skills and School Context

The findings indicate that Grade 11 teachers' digital literacy is shaped by two interrelated sets of factors:

- Individual skills and understanding, including confidence, basic ICT abilities, and interpretations of digital literacy
- School conditions, including resources, infrastructure, support structures, workload, and institutional culture

The discussion reveals that while teachers are willing and able to use basic digital tools, their capacity to integrate technology meaningfully is limited by conceptual, contextual, and organisational barriers. Without addressing these multilevel constraints, teachers are unlikely to progress beyond Technology Literacy toward the more advanced competencies required for transformative digital teaching. The findings underscore the need for systematic professional development, improved infrastructural support, and targeted interventions to strengthen digital literacy practices in township schools.

Conclusion

The study shows that Grade 11 teachers in Gauteng West township schools primarily understand digital literacy as simple technical skills such as typing, searching for information online, and creating presentation slides. This basic orientation aligns with the Technology Literacy level of the UNESCO ICT Competency Framework for Teachers and prevents teachers from progressing toward deeper, more pedagogically purposeful uses of technology. Their capacity to use digital tools effectively was further limited by unreliable infrastructure, a shortage of devices, and the absence of continuous professional development. As a result, technology integration varied considerably across schools: those with better resources were able to use digital tools more consistently and meaningfully, while under-resourced schools continued to rely predominantly on traditional teaching methods. These findings suggest that improving digital literacy in township schools requires stronger systemic support, more equitable access to resources, and ongoing, contextually appropriate training that enables teachers to use technology in purposeful and pedagogically sound ways.

Recommendations

To foster meaningful digital literacy development, the study recommends providing ongoing, hands-on professional development that is embedded in teachers' classroom contexts, strengthening school-level ICT leadership, and ensuring reliable access to devices and internet connectivity. Schools should establish supportive institutional structures such as ICT committees, troubleshooting protocols, and professional learning communities to encourage digital experimentation and reduce classroom disruptions. At a broader policy level, interventions should prioritise resource allocation for township schools, align teacher development programmes with the ICT CFT competencies, and formalise partnerships between schools, universities, and non-governmental organisations. By addressing both individual teacher skills and systemic barriers simultaneously, these recommendations aim to support equitable and sustainable technology integration across Gauteng West township schools.

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