

Teacher Leadership and Artificial Intelligence Revolution: Narratives of Teachers Working in Deprived South African School Contexts

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ABSTRACT:

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The rapid development of artificial intelligence (AI) is transforming teaching, learning and teacher professionalism, yet limited attention has been given to how teachers experience and exercise leadership while navigating AI in deprived school contexts. This study aimed to explore how teachers experience, interpret and enact teacher leadership, agency and professional identity amid the AI revolution in resource-constrained schools. The study adopted an interpretivist paradigm and qualitative approach, using a narrative inquiry design. Six teachers from deprived school contexts were purposively selected. Data were collected through semi-structured individual interviews and field notes and analysed using Braun and Clarke's reflexive thematic analysis. Freire's Critical Pedagogy provided the theoretical lens for interpreting teachers' experiences. The findings revealed five interconnected themes: AI is reshaping teacher leadership; AI reinforces educational inequalities; AI influences teacher agency and professional identity; limited digital infrastructure constrains AI integration; and teachers demonstrate agency and resilience through collaboration, improvisation and knowledge sharing. Teachers increasingly assume informal leadership roles as technology mentors, knowledge sharers and facilitators, while structural constraints, including unreliable electricity, limited connectivity, inadequate devices and insufficient professional development, restrict meaningful AI integration. The study recommends AI professional development that integrates technical, pedagogical, ethical and leadership competencies, alongside investment in digital infrastructure, affordable connectivity and collaborative teacher-learning communities. The paper contributes a contextually grounded understanding of teacher leadership in the AI era by foregrounding teachers' narratives from deprived school contexts. It extends existing AI-in-education scholarship beyond adoption and readiness by demonstrating

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how teacher agency, leadership and professional identity are negotiated within conditions of technological inequality.

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1. Introduction

The rapid development of artificial intelligence (AI) is reshaping education and challenging established understandings of teaching, learning and teacher professionalism. AI-enabled technologies, including generative AI, adaptive learning platforms and automated assessment systems, are increasingly used for lesson planning, curriculum development, assessment, personalised learning and professional development. The significance of this transformation extends beyond technology adoption, as AI is influencing how teachers understand their roles, exercise professional judgement, collaborate and contribute to teaching and learning (Zhai, 2025; Lina et al., 2025). The AI revolution should therefore be understood not only as a technological development but also as a transformation of the professional and leadership landscape within schools. This transformation places teacher leadership at the centre of contemporary debates about AI in education. Teacher leadership recognises teachers as active professionals who influence instructional practice, support colleagues, participate in decision-making and contribute to school improvement (Siddiqui et al., 2021; Simpson, 2021; Supovitz & Comstock, 2021). In AI-enabled environments, teachers are increasingly required to interpret, evaluate, adapt and guide the use of AI rather than simply implement technological innovations. Recent research indicates that AI can simultaneously expand and constrain teacher leadership by creating opportunities for innovation, collaboration and professional learning while potentially challenging teacher autonomy and professional authority (Ghamrawi et al., 2024; Ghamrawi et al., 2026). Teacher leadership is consequently becoming increasingly connected to teachers' agency, identity and capacity to exercise professional judgement.

These developments become particularly significant in deprived and under-resourced school contexts. Meaningful AI integration depends on infrastructure, connectivity, devices, digital competencies, professional development and institutional support. Research has identified persistent rural–urban inequalities in teachers' digital competencies (Lin et al., 2023), while African research highlights infrastructure limitations, electricity interruptions, connectivity problems, skills gaps and inadequate institutional support (Vurayai, 2023). Such conditions suggest that the opportunities created by AI may not be experienced equally across schools. Teacher leadership must therefore be understood as contextual and shaped by the material and institutional conditions within which teachers work (Webber & Okoko, 2021; Van Der Vyver et al., 2021). At the same time, emerging scholarship positions teachers as important actors in ensuring that AI remains ethical, human-centred and pedagogically meaningful. UNESCO (2024) emphasises teachers' AI ethics, pedagogy, professional learning and human-centred competencies, while Brandão et al. (2024) highlight the importance of technical, pedagogical and ethical professional development. Teachers may consequently exercise leadership by supporting colleagues, critically evaluating AI-generated content, redesigning pedagogical practices and influencing responsible AI use. This reinforces the view that AI does not simply reduce teachers' professional roles; it can also create new forms of agency and leadership (Zhai, 2025; Ghamrawi et al., 2026).

Despite these developments, limited attention has been given to how teachers themselves experience, interpret and narrate their leadership roles while navigating AI in deprived school contexts. Existing literature has largely examined AI adoption, competencies, readiness, attitudes and pedagogical applications, providing less

insight into teachers' everyday experiences of changing professional roles and leadership under conditions of resource constraint. This study therefore places teachers' narratives at the centre of inquiry to explore how they experience the AI revolution, negotiate its opportunities and constraints, and construct and enact teacher leadership within deprived school contexts. The study is premised on the understanding that teacher leadership is a socially, professionally and contextually situated practice shaped by AI, teacher agency and the conditions in which teachers work.

2. Literature Review

2.1 Teacher Leadership in a Changing Educational Landscape

Teacher leadership has emerged as an important approach to understanding how teachers contribute to educational improvement beyond their formal classroom responsibilities. It positions teachers as active professionals who influence pedagogy, professional learning, curriculum development, decision-making and school improvement (Siddiqui et al., 2021; Simpson, 2021). Supovitz and Comstock (2021) further demonstrate that teacher-leader activities such as professional learning, instructional planning and feedback can strengthen teachers' influence on instructional practice. This understanding is particularly relevant in the context of artificial intelligence (AI), as teachers increasingly need to interpret, adapt and make professional decisions about emerging technologies rather than simply implement externally prescribed policies.

The AI revolution is creating a new terrain for teacher leadership by transforming teachers' roles, agency, professional identity and authority. AI can provide opportunities for teachers to innovate, personalise learning, develop instructional resources, collaborate with colleagues and support professional development, but it can also challenge teacher autonomy when technological systems undertake tasks traditionally associated with teachers' professional expertise (Ghamrawi et al., 2024). Zhai (2025) argues that generative AI is

transforming teachers' roles and agency, while Ghamrawi et al. (2026) show that AI-integrated classrooms are reshaping teacher leadership, agency and professional identity. Consequently, teachers may increasingly become technology innovators, peer mentors, curriculum designers and ethical guides, requiring new forms of professional judgement concerning when, how and why AI should be used.

However, teacher leadership is inherently contextual and cannot be separated from the conditions in which teachers work. Webber and Okoko (2021) and Van Der Vyver et al. (2021) emphasise the importance of cultural and institutional contexts in understanding teacher leadership. This is particularly significant in deprived and under-resourced schools, where limited infrastructure, connectivity, devices and professional development may constrain teachers' opportunities to engage meaningfully with AI. Brandão et al. (2024) and Cabellos et al. (2024) highlight the importance of AI-related professional development and teachers' beliefs in shaping meaningful AI use. Thus, the AI revolution may simultaneously create opportunities and constraints for teacher leadership, making it important to explore how teachers in deprived school contexts experience, negotiate and exercise leadership as AI transforms their professional work.

2.2 Artificial Intelligence and the Transformation of Teacher Professionalism

The emergence of generative AI has intensified discussions about the changing nature of teachers' professional work. AI can rapidly generate lesson plans, explanations, learning activities, assessment materials and personalised educational content, challenging conventional assumptions about teachers as primary producers and transmitters of knowledge. Zhai (2025) argues that generative AI is transforming teachers' roles and agency, requiring educators to develop new forms of professional knowledge and judgement concerning when, how and why AI should be used. Similarly, Lina et al. (2025) show that engagement with generative AI can reshape teachers' professional identities. The

significance of AI therefore lies not only in what the technology can do, but also in what it requires teachers to do differently. As AI performs selected instructional tasks, teachers' professional contribution increasingly involves critical evaluation, ethical judgement, contextual understanding and the design of meaningful learning experiences (Brandão et al., 2024).

This transformation has direct implications for teacher leadership. Ghamrawi et al. (2024) found that AI can both expand and constrain teacher leadership by supporting instructional innovation, personalised learning, professional development and access to knowledge, while simultaneously raising concerns about teacher autonomy and professional authority. Ghamrawi et al. (2026) further demonstrate that AI-integrated classrooms are reshaping teacher leadership, agency, identity and authority. Teachers may therefore increasingly assume roles as technology innovators, peer mentors, curriculum designers and ethical guides. This suggests that teacher leadership in the AI era is not simply about using technology effectively, but about exercising professional judgement and influencing how AI is integrated into teaching and learning. The critical issue is therefore not whether AI will replace teacher leadership, but how teacher leadership will be reconstructed in educational environments where human and artificial intelligence increasingly interact. This perspective positions teachers not merely as technology users but as active professionals who negotiate changing boundaries of knowledge, authority, identity and responsibility. The present study consequently examines how teachers experience and exercise leadership as AI transforms their professional work, particularly within deprived school contexts where access to technology, professional development and institutional support may shape these experiences (Lin et al., 2023; Van Der Vyver et al., 2021).

2.3 Teacher Agency, Professional Identity and AI

The transformation of teacher leadership cannot be understood without considering teacher agency, which concerns teachers' capacity to

make choices, exercise professional judgement and act purposefully within particular social, institutional and material conditions. This is particularly important in the context of AI, as teachers may respond differently to the same technology depending on their knowledge, beliefs, professional experiences, school support and available resources. Zhai (2025) argues that generative AI is transforming teachers' roles and agency, while Ghamrawi et al. (2026) demonstrate that AI-integrated classrooms are reshaping teacher leadership, agency, identity and professional authority. AI may therefore create new spaces for teachers to exercise leadership through pedagogical decision-making, ethical judgement, collaboration and responsible technology integration.

AI engagement may also reshape teachers' professional identities. Lina et al. (2025) show that generative AI can influence professional identity development, while Sumalinog (2026) describes teacher identity in the AI era through processes of disruption, adaptation and evolution. Brandão et al. (2024) further emphasise the need for professional development that develops teachers' technical, pedagogical and ethical AI competencies. These perspectives suggest that teachers are not simply passive recipients of technological change; they may negotiate, adapt, question and influence how AI is used in their schools. Teacher leadership can consequently emerge through everyday acts of professional judgement, interpretation and adaptation. This relationship between AI, agency, identity and leadership is particularly relevant to narrative inquiry. Teachers' narratives can reveal how they experience changing professional roles, negotiate AI-related opportunities and constraints, and construct their identities as professionals in an evolving educational environment. Such narratives can provide insights beyond technological readiness or adoption by showing how teachers exercise leadership and agency in their everyday encounters with AI.

2.4 Professional Development and Teacher Leadership in the AI Era

The capacity of teachers to exercise leadership around AI is also closely connected to professional development. AI competencies cannot be assumed simply because teachers have access to digital technologies. Teachers require opportunities to develop technological, pedagogical and ethical knowledge that enables them to use AI critically and responsibly. Brandão et al. (2024) argue that professional development needs to respond to the emergence of generative AI by addressing not only technical competencies but also ethical and pedagogical considerations. Teachers need to evaluate AI-generated information, recognise potential bias, consider privacy and academic integrity, understand the limitations of AI and determine when human judgement should take precedence.

Cabellos et al. (2024) similarly demonstrate the importance of teachers' beliefs in shaping their engagement with generative AI. Teachers' perceptions of the technology can influence whether they embrace, cautiously experiment with or resist its use. This suggests that AI-related professional development cannot be reduced to training teachers to operate technological tools. It must also create spaces in which teachers critically interrogate the implications of AI for their professional identities and pedagogical values. This is where teacher leadership becomes particularly important. Teachers who develop AI knowledge may become informal leaders within their schools by mentoring colleagues, sharing resources, demonstrating responsible AI practices and contributing to school-level decisions. Consequently, professional development may serve not merely as a mechanism for improving individual teacher competence but as a foundation for distributed AI leadership within schools.

2.5 AI and Educational Inequality in Deprived School Contexts

Although AI has considerable potential to support education, its benefits are not automatically distributed equally. The introduction of AI occurs within educational systems already characterised by inequalities in infrastructure, technology and professional

capacity. Deprived schools may experience limited access to devices, unreliable electricity, weak internet connectivity, inadequate technical support and fewer opportunities for sustained professional development. Lin et al. (2023) provide evidence of a rural–urban divide in teachers' digital teaching competence, demonstrating that teachers' technological capabilities are connected to broader contextual inequalities. Similarly, Golden et al. (2023) argue that the rapid shift towards digitally mediated education during COVID-19 exposed and intensified existing inequalities, particularly for marginalised communities. These inequalities have particular significance for AI because AI systems generally require a technological ecosystem that includes connectivity, appropriate devices, digital literacy and institutional support. Consequently, the AI revolution could potentially produce a new layer of educational inequality: an AI divide between schools that can meaningfully integrate AI and schools that struggle to access even basic digital technologies.

Evidence from Zimbabwe further illustrates the structural challenges facing technology-enabled education. Vurayai (2023) identified infrastructure shortages, electricity interruptions, poor connectivity, skills gaps and inadequate management support as barriers to digital teaching and learning. Although this research predates the current expansion of generative AI, it provides an important contextual basis for understanding why AI integration cannot be examined independently of the material conditions in which teachers work. The significance of these inequalities is that they may shape not only AI adoption but also teacher leadership opportunities. A teacher cannot easily become an AI innovation leader where there is no reliable internet connection, limited access to devices or insufficient professional development. Conversely, teachers in deprived contexts may demonstrate forms of leadership that remain invisible within technology-centred models of innovation. They may improvise, share scarce resources, support colleagues, use low-bandwidth tools or creatively adapt AI technologies to local circumstances. The present study therefore treats

deprivation not simply as a limitation but as a context within which teacher leadership is negotiated and enacted.

Existing literature on AI in education largely focuses on adoption, acceptance, competencies and pedagogical applications, with limited attention to teachers' lived experiences of leadership during technological transformation, particularly in deprived and under-resourced school contexts. There is also limited narrative inquiry examining how teachers construct professional identities, exercise agency and enact leadership while navigating AI under conditions of resource constraint. This study therefore moves beyond questions of teachers' readiness to use AI by exploring how teachers experience, interpret, negotiate and exercise leadership as AI transforms their professional work. By foregrounding teachers' narratives, the study seeks to illuminate the opportunities, constraints, adaptations, identities, agency and leadership practices emerging at the intersection of AI and educational deprivation, contributing to a more contextually grounded understanding of teacher leadership and challenging the assumption that AI integration is a uniform process across schools.

3. Theoretical Framework

The study adopted Paulo Freire's Critical Pedagogy Theory (Freire, 1970), which conceptualises education as a practice of freedom through which individuals develop critical consciousness (*conscientização*), dialogue, agency and praxis to interrogate and transform unequal social and power relations. From a Freirean perspective, teachers are not passive recipients of knowledge or technological innovations; rather, they are active knowledge producers who can critically question the social conditions, institutional structures and power relations that shape their professional practice. This perspective is particularly relevant to AI because technological change can reproduce existing inequalities when access to digital resources, connectivity, digital skills and opportunities for meaningful participation is

uneven (Carius & Scartoni, 2023; Abegglen et al., 2025).

The theory therefore provides an appropriate lens for examining teacher leadership in deprived contexts, where teachers may experience significant disparities in access to electricity, internet connectivity, digital devices, professional development and AI technologies. A Freirean lens moves the analysis beyond asking whether teachers use AI to examining who has access to AI, whose knowledge is privileged, how technological decisions are made, and whether AI contributes to empowerment or reinforces existing inequalities. Recent scholarship argues that digital inequality should be understood as an extension of broader social inequalities rather than simply as a lack of technological access (Abegglen et al., 2025), while Carius and Scartoni (2023) demonstrate the continuing relevance of Freirean critical pedagogy for pursuing digital equity.

Furthermore, the Freirean concepts of dialogue, critical consciousness and praxis are particularly valuable for understanding how teachers respond to the AI revolution. Teachers can engage in dialogue with colleagues, critically evaluate AI-generated knowledge, reflect on its implications for teaching and learning, and translate that reflection into responsible pedagogical action. Recent research applying Freirean thinking to AI argues that critical pedagogy can support more ethical, dialogic and humanising approaches to AI-mediated education, rather than positioning technology as an unquestioned solution to educational problems (Kildē, 2025; Aquino, 2026).

Importantly, the framework also recognises that AI literacy must extend beyond technical competence. Teachers need to understand the social, ethical and political dimensions of AI, including algorithmic bias, data privacy, unequal access, reliability of AI-generated knowledge and the potential marginalisation of disadvantaged learners. Daher (2025) argues for AI literacy in teacher education that goes beyond technical skills to include understanding AI's mechanisms, applications and ethical implications. Similarly,

recent scholarship on *Freire 2.0* argues that digital technologies can expand educational access while simultaneously reproducing or intensifying the power inequalities associated with Freire's critique of traditional education (see the discussion of digital learning and the "digitally oppressed").

Accordingly, Freire's Critical Pedagogy provides a strong theoretical lens for this study because it enables the researcher to understand teachers not merely as users of AI but as critical agents and potential leaders who negotiate technology, power, inequality and professional practice within resource-constrained environments. The framework positions teacher leadership as a form of praxis in which teachers critically interpret the AI revolution, collaborate with others, challenge inequitable conditions and seek contextually appropriate ways of using AI to improve teaching and learning.

Table 3.1 Four Freirean concepts you can use as analytical themes

Freirean concept	Application to your study
Critical consciousness	Teachers critically recognise the opportunities, limitations and inequalities associated with AI.
Dialogue	Teachers collaborate, share AI knowledge and learn collectively from one another.
Praxis	Teachers combine critical reflection with action to develop contextually appropriate AI practices.

Agency/empowerment	Teachers exercise leadership by challenging technological inequalities and influencing how AI is used in their schools.
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Source: Authors Computation

4. Methodology

4.1 Research Paradigm

The study was located within an interpretivist paradigm. Interpretivism assumes that reality is socially constructed and that individuals attach different meanings to their experiences depending on their social, cultural and institutional contexts (Creswell & Poth, 2018; Merriam & Tisdell, 2016). The interpretivist paradigm was appropriate because the study sought to understand how teachers working in deprived school contexts experienced, interpreted and gave meaning to the growing influence of artificial intelligence (AI) on their professional roles and leadership practices. The study therefore did not seek to establish an objective or universally applicable account of AI integration but focused on participants' subjective experiences and interpretations.

4.2 Research Approach

A qualitative research approach was adopted. Qualitative research enables researchers to explore complex human experiences, meanings, perceptions and social processes within their natural contexts (Creswell & Poth, 2018; Denzin & Lincoln, 2018; Merriam & Tisdell, 2016). This approach was appropriate because the study focused on teachers' experiences and narratives concerning AI, teacher leadership and teacher agency in deprived school contexts. The qualitative approach allowed the researcher to obtain detailed accounts of how participants understood AI, how they used or negotiated AI technologies, and how contextual factors such as inadequate infrastructure, limited connectivity, access to devices and institutional support influenced their experiences. The approach

therefore enabled the study to capture the complexity and contextual nature of teachers' experiences rather than reducing them to numerical measures.

4.3 Research Design

The study employed a narrative inquiry design. Narrative inquiry focuses on human experience as it is lived and expressed through stories and is particularly appropriate for educational research concerned with teachers' professional experiences (Clandinin & Connelly, 2000; Clandinin, 2006). Narrative inquiry enabled the researcher to examine how teachers constructed and reconstructed meanings around their experiences of AI within their professional and school contexts. The design was particularly suitable because the study explored teachers' stories of change, adaptation, opportunities, challenges and professional agency. Participants were therefore encouraged to describe their experiences in their own words and to explain how their engagement with AI had influenced their teaching practices and leadership roles. Attention was given to the relationship between temporality, sociality and place, which are central dimensions of narrative inquiry (Clandinin & Connelly, 2000). The narrative approach also recognised that participants' accounts were not simply factual descriptions of events but interpretations of their experiences. The researcher therefore treated participants' stories as situated accounts that were shaped by their professional identities, school environments and interactions with others.

4.4 Participants and Sampling

The study involved six teachers who were selected through purposive sampling. Purposive sampling was appropriate because qualitative researchers select participants who possess direct experience or knowledge relevant to the phenomenon under investigation (Creswell & Poth, 2018; Merriam & Tisdell, 2016). The six teachers were selected because they worked in deprived school contexts and had experiences that enabled them to comment meaningfully on the emergence of AI in education. The sample was intentionally small because narrative inquiry

prioritised depth, richness and contextual understanding rather than statistical representativeness. The participants' accounts provided detailed insights into how teachers experienced and negotiated AI within resource-constrained educational environments.

4.5 Data Collection

Data were collected through semi-structured individual interviews. Semi-structured interviews were appropriate because they provided a balance between consistency across participants and flexibility to explore issues emerging from individual teachers' narratives (Brinkmann & Kvale, 2015; Kvale & Brinkmann, 2015). Qualitative interviews were understood as social and dialogical encounters through which knowledge was constructed between the researcher and participant rather than simply extracted from participants (Brinkmann & Kvale, 2015). An interview guide was developed around the central areas of the study, including teachers' experiences of AI, perceptions of its usefulness and accessibility, changes in teaching practices, teacher agency, teacher leadership, professional development, and challenges associated with working in deprived school contexts. Each participant was interviewed individually for approximately **45–60 minutes**. With participants' permission, the interviews were audio-recorded and subsequently transcribed verbatim. The researcher also maintained field notes to document contextual observations, initial interpretations and methodological reflections. The use of field notes complemented the interview data and assisted the researcher in remaining attentive to the contextual dimensions of participants' experiences.

4.6 Data Analysis

The interview data were analysed using reflexive thematic analysis as developed by Braun and Clarke (2021). Reflexive thematic analysis provided a systematic yet flexible approach for identifying, interpreting and reporting patterns of meaning across the dataset. Braun and Clarke (2021) emphasised that thematic analysis involved an active and interpretive engagement between the researcher and the data rather than a

purely mechanical process of coding. The analysis followed six interconnected phases: familiarisation with the data; generation of initial codes; construction of candidate themes; review of themes; definition and naming of themes; and production of the final report (Braun & Clarke, 2021). The researcher first repeatedly read the interview transcripts to become familiar with participants' accounts. Initial codes were then generated from significant segments of the data. The analysis was primarily inductive, allowing meanings and patterns to emerge from participants' accounts. However, the theoretical framework was subsequently used as a sensitising lens when interpreting the findings. Importantly, the narrative character of the data was retained during analysis. Participants' stories were not treated merely as fragmented statements but were interpreted in relation to their professional contexts and experiences. This approach was consistent with narrative inquiry, which emphasised the importance of understanding experience through the stories through which participants constructed meaning (Clandinin & Connelly, 2000; Riessman, 2008).

4.7 Researcher Reflexivity

Reflexivity was incorporated throughout the research process. Reflexivity required the researcher to critically examine how personal experiences, assumptions, values, relationships with participants and interpretations could influence the production and interpretation of knowledge (Denzin & Lincoln, 2018; Finlay, 2002). The researcher therefore maintained reflexive notes during data collection and analysis and continuously considered how their own position could influence interactions with participants and the interpretation of their narratives. Reflexivity was particularly important because narrative inquiry involved an active relationship between the researcher, participants and the stories being constructed and represented.

4.8 Trustworthiness

The trustworthiness of the study was ensured through credibility, transferability, dependability and confirmability, following Lincoln and Guba's

(1985) naturalistic approach to qualitative research. Credibility was strengthened through repeated engagement with the interview transcripts and careful interpretation of participants' accounts; transferability through detailed descriptions of participants, school contexts, research procedures and findings; dependability through maintaining a transparent record of participant selection, data collection, coding and theme development; and confirmability through reflexivity, an audit trail and grounding interpretations in participants' narratives. Collectively, these strategies enhanced the methodological rigour and demonstrated that the findings were firmly grounded in the data and research process.

4.9 Ethical Considerations

Ethical principles were observed throughout the study, with ethical approval protocol number: FEDREC15-06-23- 3 and relevant permissions obtained before data collection. Participants received information about the study, its procedures, risks, benefits, confidentiality and their rights, and provided written informed consent, including consent for audio recording. Participation was voluntary, with participants able to decline questions or withdraw without consequences, while anonymity and confidentiality were protected through pseudonyms or codes such as Teacher 1 (T1) to Teacher 6 (T6). Research data were securely stored with restricted access, and identifying information was removed during transcription and reporting. Given the narrative inquiry design, particular attention was paid to representing participants' lived experiences accurately, respectfully and ethically while protecting their privacy (Clandinin & Connelly, 2000; Brinkmann & Kvale, 2015).

5. Findings and Discussion

The findings are presented and discussed as an integrated account of the participants' experiences with five themes; Teacher Leadership in a Changing Educational Landscape, AI and Educational Inequality in Deprived School Contexts, Teacher Agency, Professional Identity and AI, Limited Digital

Infrastructure Constrains AI Integration, Teachers Demonstrate Agency and Resilience. Across these themes, the findings were interpreted through the lens of Paulo Freire's Critical Pedagogy Theory (Freire, 1970).

5.1 Teacher Leadership in a Changing Educational Landscape

Teacher 1: *"I see myself as a leader because colleagues come to me when they want to know how to use AI to prepare lessons. I do not have a management position, but I am able to influence what happens in my department."*

Teacher 2: *"AI has changed the way we work together. Sometimes I learn something from ChatGPT and then share it with other teachers, especially when they are struggling to prepare activities."*

Teacher 3: *"The role of the teacher is changing. We cannot only stand in front of the classroom and give information anymore. We have to guide learners on how to use technology responsibly."*

Teacher 4: *"I have become more confident in leading discussions about technology because other teachers ask me for assistance. It has created another form of teacher leadership."*

Teacher 5: *"AI has given teachers an opportunity to take initiative. Even without being appointed as a leader, you can introduce new ideas and help other teachers understand how these tools can be used."*

The findings that AI is reshaping teacher leadership demonstrates that teachers are increasingly moving beyond traditional classroom responsibilities to become innovators, mentors, knowledge sharers and facilitators of technology-supported teaching. This finding is strongly supported by Ghamrawi et al. (2024), who found that AI can both expand and constrain teacher leadership, depending on how teachers engage with the technology. Their later study further shows that AI-integrated classrooms are reshaping teacher leadership through changes in agency, professional identity and authority (Ghamrawi et al., 2026). From a Freirean perspective, this finding reflects empowerment and agency because teachers are not positioned as passive recipients of AI technologies. Instead, they actively interpret AI, share knowledge with

colleagues and influence how technology is incorporated into teaching. This represents an important shift from a model in which technological innovation is imposed from above towards one in which teachers become active participants in shaping educational change. The finding also relates to dialogue, one of Freire's central principles. When teachers share AI knowledge, mentor colleagues and collectively discuss the opportunities and risks of AI, professional learning becomes a dialogical process rather than a one-directional transfer of technological knowledge. Recent research similarly identifies teacher leadership in AI-enabled environments as involving collaboration, mentoring, instructional innovation and the redistribution of agency.

5.2 AI and Educational Inequality in Deprived School Contexts

Teacher 1: *"AI is exciting, but it is not the same for everyone. Some learners have smartphones and internet at home, while others struggle even to access a computer at school."*

Teacher 2: *"When we talk about AI in education, we must first talk about inequality. You cannot expect learners to use AI when they do not have reliable electricity or internet."*

Teacher 3: *"The technology can help us, but it can also make the gap bigger. Learners who have access will move faster, while those without access will be left behind."*

Teacher 6: *"Our school is in a disadvantaged community, so we have to think differently. AI should help to reduce the inequalities that already exist, not create another divide."*

These findings demonstrates that the AI revolution does not occur on an equal technological landscape. Teachers in deprived contexts may encounter unequal access to devices, connectivity, electricity, digital skills and professional development. This finding is consistent with Lin et al. (2023), whose large-scale study of teachers found a significant rural–urban divide in teachers' ICT attitudes, ICT skills, data literacy and digital teaching competence. Importantly, the study identified ICT skills and data literacy as major contributors to this divide.

This finding is particularly important for your study because it demonstrates that AI inequality can reproduce existing educational inequalities. A teacher cannot be expected to exercise AI-related leadership in the same way as a teacher working in a technologically well-resourced school when the basic infrastructure required to access AI is absent. Thus, deprivation is not simply an individual teacher problem; it is a structural condition that shapes teachers' opportunities for leadership and innovation. Through Freire's Critical Pedagogy, this finding can be interpreted through critical consciousness. Critical consciousness requires teachers to recognize that unequal access to technology is connected to broader social and structural inequalities. Rather than interpreting limited AI use as evidence that teachers lack interest or competence, a Freirean analysis asks what structural conditions enable or constrain their participation. Teachers' experiences reveal that AI integration is embedded within existing structures of educational inequality, requiring teachers to critically recognise and respond to unequal technological opportunities.

5.3 Teacher Agency, Professional Identity and AI

Teacher 1: *"I do not want AI to replace me. I see it as a tool that helps me become a better teacher, but the final decision about what is appropriate for my learners must remain with me."*

Teacher 2: *"I have had to teach myself many things about AI because there was no formal training. That has made me realise that I can take responsibility for my own professional development."*

Teacher 3: *"Using AI does not mean that I am no longer a teacher. My role is changing from simply giving information to guiding learners to question and evaluate information."*

These findings indicate that teachers demonstrate agency and increasingly negotiate their professional identities as AI becomes part of their work. Teachers do not simply accept AI as a replacement for professional expertise; rather, they determine how AI should be used, evaluate its outputs and make decisions about its

appropriateness for particular learners and contexts. This finding is strongly aligned with Ghamrawi et al. (2026), who found that AI-integrated classrooms are reshaping teacher agency, professional identity and authority. Their study identified recalibrated leadership practices, reconfigured professional identity, distributed agency and ethical ambivalence as important dimensions of teacher leadership in AI-integrated classrooms. It is also consistent with Brandão et al. (2024), who argue that teacher professional development for generative AI must extend beyond technical skills to include ethical and pedagogical considerations. Teachers need to evaluate AI-generated information and make informed professional judgements about its appropriate use. Freire's concept of praxis is particularly useful here. Praxis involves the relationship between critical reflection and action. Teachers reflect on what AI means for their professional roles, consider its opportunities and limitations, and then act by adapting their teaching practices. Therefore, teachers' agency is demonstrated not simply through using AI but through their capacity to question, evaluate, adapt and act. This also illustrates Freirean empowerment. Teachers maintain professional agency when they use AI as a tool to enhance their practice rather than allowing technological systems to determine pedagogical decisions.

5.4 Limited Digital Infrastructure Constrains AI Integration

Teacher 1: "Sometimes I want to use AI in my lesson, but there is no internet. By the time the connection comes back, the lesson is already finished."

Teacher 2: "We have teachers who are interested in AI, but we do not have enough computers or reliable connectivity for everyone to use it."

Teacher 3: "Electricity is also a problem. You cannot plan your teaching around technology when you are not sure whether you will have electricity."

Teacher 4: “The problem is not that teachers do not want to use AI. The problem is that the resources are not always available.”

Teacher 6: “Sometimes we depend on our own mobile data. It becomes expensive, and you eventually stop using these tools because you cannot afford the data.”

The finding that limited infrastructure constrains AI integration demonstrates that teachers' willingness to engage with AI does not necessarily translate into actual use. Infrastructure including electricity, connectivity, devices, technical support and access to professional development provides the material conditions within which AI-enabled teaching becomes possible. These findings are strongly supported by Lin et al. (2023), who demonstrate significant differences between rural and urban teachers in digital teaching competence and identify ICT skills and data literacy as important determinants of this divide. Brandão et al. (2024) similarly emphasise that teachers require appropriate professional development to develop the competencies necessary for meaningful engagement with generative AI. From a Freirean perspective, this finding highlights the importance of structural conditions and power. Teachers may possess the motivation and critical awareness to use AI, but their agency is constrained when the material resources required for action are unavailable. This distinction is important: lack of AI use should not automatically be interpreted as lack of teacher agency or resistance to innovation. The finding can therefore be interpreted through critical consciousness and praxis. Teachers become conscious of the technological inequalities surrounding them and, where possible, develop alternative strategies—such as sharing devices, using mobile phones, relying on colleagues or finding low-bandwidth solutions. Teachers recognise structural technological constraints and attempt to translate their awareness into practical responses within the resources available to them.

5.5 Teachers Demonstrate Agency and Resilience

Teacher 1: *“We cannot wait for everything to be perfect. If there is one computer available, we find a way of sharing it and using whatever resources we have.”*

Teacher 2: *“I use my phone when the school resources are not available. It is not ideal, but as teachers we have learned to work with what we have.”*

Teacher 3: *“We support one another. If one teacher knows how to use an AI tool, that teacher shows the others. That is how we learn in our school.”*

Teacher 6: *“Being in a disadvantaged school has taught me to be creative. I look for different ways of using technology because I cannot always depend on the resources provided by the school.”*

The findings that teachers demonstrate agency and resilience is particularly important because it challenges deficit-oriented interpretations of teachers working in deprived schools. Rather than simply being victims of inadequate infrastructure, teachers may creatively appropriate available technologies, collaborate with colleagues, share scarce resources and develop locally appropriate responses to technological constraints. This finding connects strongly with the literature on teacher agency and teacher leadership. Shal et al. (2024), for example, demonstrate how teacher leadership can develop through virtual communities and collective professional activity, highlighting the relationship between teacher agency and distributed leadership. Ghamrawi et al. (2026) similarly conceptualise teacher leadership in AI-integrated classrooms through distributed agency, professional identity and changing forms of authority. From Freire's perspective, this finding is best understood through praxis and empowerment. Teachers are not merely reflecting on their disadvantaged circumstances; they are acting within those circumstances. Their improvisation, collaboration and problem-solving represent forms of praxis because teachers transform reflection into action. The finding also connects to dialogue because teachers may rely on collective knowledge-sharing rather than individual expertise. One

teacher's knowledge of an AI tool can become a resource for others, creating informal professional learning communities.

6. Conclusion and Recommendations

The study concludes that the AI revolution is reshaping teacher leadership, professional identity and agency in deprived school contexts. The findings demonstrate that teachers are not passive users of AI but actively share knowledge, support colleagues, exercise professional judgement and develop creative responses to technological challenges. However, these possibilities are significantly shaped by structural inequalities, including limited access to electricity, connectivity, devices, technical support and professional development. Through Freire's Critical Pedagogy, the findings demonstrate that teachers develop critical consciousness of these inequalities and exercise praxis, dialogue and empowerment by adapting, collaborating and finding locally appropriate ways of using available technologies. Thus, AI integration should be understood not simply as a matter of technological competence, but as a social and contextual process shaped by teachers' agency, professional identities, leadership practices and the material conditions of their schools.

The study recommends that educational authorities and schools strengthen AI-focused professional development that goes beyond technical skills to include pedagogy, ethics, critical evaluation and teacher leadership. Greater investment is also required in electricity, internet connectivity, digital devices, technical support and affordable data to address the structural

barriers experienced by teachers in deprived schools. Schools should further establish collaborative teacher-learning communities in which teachers can share AI knowledge, mentor colleagues and develop contextually appropriate solutions. Finally, AI implementation policies should recognise teachers as active agents and professional decision-makers, rather than treating AI integration as a uniform technological process. Such an approach would promote equitable AI adoption while strengthening teacher agency, collective leadership and meaningful participation in technological transformation.

7. Directions for Future Studies

Future studies could expand this research by examining teacher leadership and AI integration across a wider range of schools, including both deprived and well-resourced contexts, to provide a broader understanding of how contextual conditions shape teachers' experiences. Longitudinal studies could also explore how teachers' professional identities, agency and leadership practices evolve as AI technologies become increasingly embedded in educational practice. Further research could investigate learners' experiences of AI, school leaders' perspectives on supporting AI integration, and the effectiveness of different forms of AI-related professional development for teachers. Comparative studies across rural and urban schools or different educational districts could additionally provide deeper insights into digital inequalities, infrastructure, teacher agency and contextually appropriate approaches to AI integration.

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