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BETWEEN USE AND RESISTANCE: PRE-SERVICE TEACHERS' ENGAGEMENT WITH ARTIFICIAL INTELLIGENCE AND ACADEMIC INTEGRITY AT A SOUTH AFRICAN UNIVERSITY

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ABSTRACT

This article reports on a qualitative case study examining pre-service teachers' engagement with generative artificial intelligence (AI) and academic integrity at a South African university during a period of institutional policy transition. Fifteen Postgraduate Certificate in Education (PGCE) students participated in an open-ended questionnaire and a focus group discussion exploring their use of AI in university coursework and their perceptions of learners' AI use during teaching practice. Data were analysed using reflexive thematic analysis. Findings reveal a persistent tension: while participants relied on AI for clarity, efficiency, and academic support, most expressed concern about its impact on critical thinking and originality and discouraged learners from using AI for school assignments. When interpreted through transition pedagogy, these contradictions are understood not as individual ethical failure but as evidence of curriculum-embedded gaps in AI literacy. The study highlights the need for intentional, scaffolded integration of ethical and pedagogical AI literacy within teacher education programmes to align institutional policy, curriculum design, and emerging professional identities.

Keywords: artificial intelligence, higher education, teacher education, pre-service teachers, academic integrity, South Africa

INTRODUCTION

The integration of artificial intelligence (AI) tools into teaching, learning, and assessment processes has accelerated globally, reshaping higher education in the context of the Fourth Industrial Revolution (4IR), post-pandemic digitisation, and deepening debates about academic integrity and epistemic justice. In South Africa, universities have increasingly engaged with generative AI tools such as ChatGPT, Meta AI, Gemini, and other large language model–based systems, which offer new affordances for personalised learning, automated feedback, and administrative efficiency, while simultaneously raising concerns about plagiarism, misinformation, surveillance, and the erosion of critical thinking (Funda & Mbangeleli, 2024; Patel & Ragolane, 2024). Teacher education is particularly affected because student teachers are both users of AI and future professionals responsible for guiding school learners' ethical and educationally sound interactions. At the university where this study was conducted, the rapid uptake of generative AI by students and staff prompted institution-wide deliberations and the

development of a regulatory framework. In December 2024, the university Senate approved the Principles and Guidelines on the Use of Generative Artificial Intelligence Tools in Academic Work (Reference SE/01/0312/24) ([Institution anonymised], 2024), a policy that came into effect on 1 January 2025. The guidelines set out four core principles - using AI to innovate, using AI ethically, upholding academic integrity, and fostering capacity development - and provide detailed expectations for both staff and students regarding AI use in learning, teaching, and research. The policy explicitly encourages the responsible use of AI for academic support, provided that users verify outputs, avoid misrepresentation, disclose substantive AI assistance where required, and ensure that AI does not replace human critical engagement.

This study is situated within this evolving institutional landscape. It explores how pre-service teachers at the university's School of Education are using AI tools in their own academic work and how they perceive learners' use of AI during teaching practice. The study focuses on students enrolled in the Postgraduate Certificate in Education (PGCE) programme and examines their experiences through two research questions: (1) In what ways do student teachers use AI tools in their training, and what are their perceptions regarding its use? and (2) What are pre-service teachers' perceptions of high school learners' use of AI for assessment tasks? By juxtaposing student teachers' positions as beneficiaries and gatekeepers of AI-mediated practices, the study illuminates tensions between pragmatic use, ethical concerns, and institutional policy expectations at the university.

LITERATURE REVIEW

The rapid expansion of AI in higher education has generated an emerging body of scholarship that explores both its transformative potential and its risks. Internationally, large-scale reviews by Luckin (2019) and Holmes et al., (2019) show that AI can enhance personalised learning, provide real-time feedback, and support assessment, but also raise concerns about data privacy, algorithmic bias and the displacement of critical-thinking processes. Selwyn (2022) argues that universities must approach AI cautiously, highlighting that student engagement with AI often mirrors broader social anxieties about automation, authenticity and inequality. Empirical studies also show that university students frequently use AI to support explanation, structuring and paraphrasing, while struggling with verification and ethical navigation (Ngo, 2023). A parallel body of international work examines the impact of generative AI on academic integrity. Cotton et al. (2024) argue that tools such as ChatGPT have fundamentally disrupted conventional assessment design, enabling undetectable forms of plagiarism and reducing opportunities for deep cognitive engagement. Khoalenyane & Ajani (2024) similarly highlight widespread use of generative AI among university students, contending that the integrity of assessment systems is increasingly contingent on institutional preparedness.

In the South African context, several recent studies have examined AI as part of a broader digital transformation agenda and have highlighted its role in addressing systemic challenges such as large class sizes, uneven access to resources, and the need for enhanced student support (Funda & Mbangeleli, 2024; Khoalenyane & Ajani, 2024; Patel & Ragolane, 2024). Patel and Ragolane

(2024) argue that AI technologies - including predictive analytics, intelligent tutoring systems, automated assessment, and personalised learning platforms - can significantly improve institutional efficiency and learning outcomes, particularly when aligned with strategic frameworks and ethical governance models. Similarly, Funda and Piderit (2024) and Funda and Mbangeleli (2024) document the potential of AI to enhance personalised learning, boost student engagement, and assist with evidence-based decision-making in resource constrained environments.

However, the literature also underscores significant barriers to effective AI integration in South African higher education. These include infrastructural limitations such as unreliable connectivity, limited bandwidth, and unequal access to devices, as well as gaps in staff capacity and digital literacy (Khoalenyane & Ajani, 2024; Patel & Ragolane, 2024). Ethical concerns loom large, particularly with respect to data privacy, algorithmic bias, and the potential for AI to deepen existing inequalities rather than ameliorate them (Huang, 2023). Huang (2023) emphasises that AI-driven learning environments can expose students to new forms of data vulnerability, highlighting the need for robust frameworks to protect student information and ensure accountable data governance.

A growing strand of scholarship focuses specifically on generative AI and tools such as ChatGPT. Sokhulu et al. (2025) provide a systematic review of the role of ChatGPT in higher education, with a particular focus on South African universities. They find that ChatGPT can support conceptual understanding, provide rapid feedback, and enhance personalised learning experiences. Yet they also identify concerns around academic integrity, plagiarism, overreliance, and the digital divide, arguing that the benefits of generative AI are unevenly distributed and heavily mediated by socio-economic context. These findings complement McKenna and Tshuma's (2025) argument that students are especially vulnerable to AI-generated misinformation because they often lack the disciplinary knowledge required to evaluate AI outputs critically. McKenna and Tshuma identify four dangers: blind trust in AI, using AI to bypass learning, limited understanding of AI mechanisms, and a widening gap between genuine expertise and confidently presented but shallow knowledge.

Within this rapidly evolving technological landscape, universities have begun to articulate formal AI policies and guidelines. The university Principles and Guidelines on the Use of Generative Artificial Intelligence Tools in Academic Work ([Institution anonymised], 2024) represent an institutional attempt to respond coherently to the opportunities and risks associated with AI. The policy encourages staff and students to harness AI to support innovation, learning, and research while insisting on verification of AI-generated content, explicit attention to bias and misinformation, and adherence to academic integrity and disclosure requirements. It also signals an expectation that faculties and schools will integrate AI literacy and ethical awareness into curricula, particularly in programmes such as teacher education where graduates will be responsible for guiding AI use in schools. Despite the proliferation of policy statements and conceptual analyses, there remains relatively little empirical research on how pre-service teachers in South Africa are encountering and using AI as part of their training. This study

contributes to that gap by examining PGCE students' lived experiences and perceptions of AI at the university, with a particular focus on how they navigate AI use in their own learning and how they respond to learners' engagement with AI during teaching practice. To further theorise the gap between institutional AI policy and pre-service teachers' everyday practices, this study draws on transition pedagogy as articulated by Sally Kift. Transition pedagogy conceptualises student transition not as an individual adjustment problem, but as a curriculum and institutional design responsibility (Kift, 2009, 2015, 2025). Central to this framework is the argument that curriculum is the primary site through which students are supported to navigate unfamiliar academic expectations, ethical norms, and professional identities. Rather than relying on ad hoc support or policy compliance, transition pedagogy emphasises that critical academic literacies must be intentionally embedded, explicitly taught, developmentally scaffolded, and supported through a whole-of-institution approach (Kift et al., 2010; Kift, 2025).

Kift's recent work is particularly relevant in the context of generative artificial intelligence (AI), which she identifies as one of the contemporary forces intensifying volatility, uncertainty, and complexity in higher education (Kift, 2025). She argues that when new academic practices emerge, such as AI-mediated writing, learning, and assessment, institutions risk producing fragmented and contradictory student experiences if responses remain policy-driven but curriculum-light. From a transition pedagogy perspective, AI literacy constitutes a contemporary transition challenge that must be addressed through curriculum design rather than left to individual experimentation or moral judgement. This framing is especially salient in teacher education. Pre-service teachers are simultaneously transitioning into AI-mediated academic practices and into professional identities that require them to model ethical judgement and pedagogical responsibility. Transition pedagogy therefore provides a conceptual lens for examining how institutional arrangements shape pre-service teachers' engagement with AI, allowing this study to move beyond questions of student compliance or resistance and toward an analysis of curriculum, policy, and professional formation.

CONCEPTUAL FRAMEWORK: CURRICULUM-EMBEDDED APPROACHES TO STUDENT TRANSITION AND AI LITERACY

This study is informed by Sally Kift's (2025) curriculum-based approach to student transition, which conceptualises transition not as an individual deficit or adjustment problem, but as a responsibility of curriculum design and institutional practice. Kift's First Year Curriculum Principles Framework emphasises that successful transitions into higher education are most effectively supported when key academic literacies are intentionally embedded within the curriculum, made explicit to students, developmentally scaffolded, and supported through a whole-of-institution approach. Rather than relying on ad hoc support mechanisms or assumptions about student preparedness, Kift argues that curriculum is the primary site through which students learn how to participate ethically, critically, and successfully in academic practices. Although Kift's work emerged from research on the first-year experience, her framework has been widely applied to broader questions of academic literacy, professional identity formation, and curriculum reform across higher education. In the context of rapidly expanding generative

artificial intelligence (AI) use, Kift's framework provides a valuable lens for understanding AI literacy as a contemporary transition challenge. Pre-service teachers are required to transition into new forms of academic practice that involve AI-mediated writing, knowledge generation, and assessment, while simultaneously developing professional identities grounded in ethical responsibility and pedagogical judgement. From a Kiftian perspective, ethical and critical engagement with AI should not be treated as an optional skill or a matter of individual student discretion. Instead, AI literacy must be conceptualised as a core academic and professional capability that is explicitly taught, scaffolded across programmes, and aligned with institutional policy. Without such curriculum-embedded support, students are left to negotiate AI use through personal intuition, moral anxiety, or informal peer norms, leading to inconsistent and contradictory practices.

Applying Kift's framework to this study allows the analysis to move beyond questions of student compliance or resistance to AI policy, and toward a critical examination of how institutional and curricular arrangements shape student engagement with AI. The framework therefore provides a conceptual bridge between institutional AI policy, curriculum design, and pre-service teachers' emerging academic and professional identities. Guided by this transition pedagogy lens, the study examines how pre-service teachers navigate AI use within a policy-rich but curriculum-light environment, and how these conditions shape their academic practices and emerging professional identities.

METHODOLOGY

This study employed a qualitative case study design to explore pre-service teachers' experiences of AI tools within a specific institutional and policy context. The case comprises a cohort of fifteen PGCE students in the School of Education at the [Institution anonymised]. The focus on a single cohort allowed for an in-depth examination of how student teachers negotiate AI use in their dual roles as university students and as novice teachers during teaching practice.

Research Design and Context

This study adopted a qualitative case study design to explore pre-service teachers' experiences of artificial intelligence (AI) within a specific institutional and policy context. A qualitative approach was appropriate because the study sought to examine participants' perceptions, meanings, and interpretations of AI use rather than to measure prevalence or causal relationships. The case comprised a cohort of Postgraduate Certificate in Education (PGCE) students enrolled in the School of Education at a South African university. The focus on a single institutional case enabled an in-depth examination of how pre-service teachers navigated AI use at a moment of significant policy transition, following the Senate approval of the *Principles and Guidelines on the Use of Generative Artificial Intelligence Tools in Academic Work* (SE/01/0312/24).

Participants and Sampling

The study involved fifteen PGCE students, selected through purposive sampling. Participants were recruited because they were simultaneously engaged in university coursework and school-based teaching practice, positioning them as both users of AI and emerging professionals responsible for regulating learners' academic practices. This dual positioning was central to the research questions. Participation was voluntary, and no incentives were offered. To protect anonymity, all participants were assigned pseudonyms.

Data Generation

Data were generated through two qualitative instruments: a written questionnaire and a focus group discussion.

The questionnaire consisted primarily of open-ended questions designed to elicit reflective accounts of participants' AI use in their academic work. Items invited participants to indicate whether they used AI tools, which tools they used, how they used them in completing assignments, perceived advantages and disadvantages of AI compared to traditional methods, and their views on whether the university should encourage or discourage AI use.
The focus group discussion was conducted after the questionnaire to deepen understanding of the second research question concerning learners' use of AI during teaching practice. The focus group encouraged interaction among participants and enabled them to articulate and negotiate shared concerns, ethical positions, and emerging professional identities. Guiding questions focused on whether participants encouraged or discouraged learners' use of AI for school assignments and the reasons underpinning these decisions.

Data Analysis

Data were analysed using reflexive thematic analysis, following the six-phase approach outlined by Braun and Clarke. Analysis began with repeated reading of questionnaire responses and the focus group transcript to achieve familiarisation with the data. Initial codes were generated inductively, capturing patterns related to AI use, perceived benefits, ethical concerns, and shifts in perspective between student and teacher roles. Codes were then collated into potential themes, which were reviewed and refined through iterative comparison across data sources. Final themes were defined in relation to the two research questions and interpreted in dialogue with the institutional AI policy and relevant literature on AI, academic integrity, and teacher education. Verbatim quotations were used to illustrate themes and preserve participants' voices.

Trustworthiness and Rigour

Several strategies were employed to enhance the trustworthiness of the study. Credibility was supported through the use of rich, verbatim data extracts and the triangulation of questionnaire and focus group data. Dependability was strengthened through an iterative analytic process in

which codes and themes were revisited and refined as analysis progressed. Confirmability was addressed by grounding interpretations closely in participants' accounts rather than in pre-existing assumptions about AI use. Reflexivity was maintained by treating AI-related practices as objects of inquiry rather than surveillance, particularly given the researchers' proximity to the institutional context. While the study does not claim statistical generalisability, thick description is provided to support analytic transferability to similar teacher education contexts.

Ethical Considerations

Ethical clearance was obtained in line with institutional requirements System ID number 22201200). Participants provided informed consent and were assured that their participation or responses would not affect their academic standing. Given the sensitivity surrounding AI and academic integrity, care was taken to frame questions in ways that encouraged reflection rather than self-incrimination, and all data were anonymised prior to analysis.

FINDINGS

The findings are organised around the two research questions: (1) pre-service teachers' use of AI tools in their training and their perceptions of this use, and (2) their perceptions of learners' use of AI during teaching practice.

Research Question 1: Questionnaire: Pre-service Teachers' Use of AI Tools in Their Training and Their Perceptions of Its Use

Extent and Nature of AI Use

Analysis of the questionnaire data indicates that AI use among the PGCE cohort was both widespread and diverse, though far from uniform. Of the fifteen participants, eleven reported using AI tools for their assignments, indicating a high level of exposure and engagement with these technologies. The most commonly used tools included Meta AI, ChatGPT, Gemini and OpenAI platforms, with some respondents using multiple tools depending on their needs. Others relied heavily on Google Scholar for academic material, blurring the boundary between traditional online research and AI-enabled content generation. Although a minority, Ayanda, Amahle and Bongani, explicitly stated that they did not use AI for their assignments, their comments offered insight into strong beliefs about academic integrity, authenticity and the importance of personal knowledge construction. These participants positioned themselves as resistant to AI, not due to lack of access, but because they viewed its use as incompatible with the core aims of higher education.

Patterns of Engagement: From Support Tool to Dependency

The second questionnaire item provided a more nuanced picture of how pre-service teachers engaged with AI. A number of students used AI tools in what may be considered academically

legitimate ways. For example, Peter described using AI *"as a starting point"* to understand assignment topics, while Dumisani explained that AI *"helps in finding relevant sources or in summarizing,"* and Bheki emphasised its capacity to *"break down questions"* and improve grammar.

Others described more problematic practices that blurred the line between assistance and academic dishonesty. Sarah wrote plainly, "*I take my assignment and ask AI to write it in a professional manner,"* indicating that her use involved stylistic enhancement rather than conceptual support. Ayabonga noted that she used AI *"for references,"* a practice known to be unreliable given that AI tools frequently generate fabricated or inaccurate citations.

These responses illustrate a continuum of engagement ranging from support for ethical use, caution regarding heavy reliance on AI and rejection due to ethical and pedagogical concerns. The continuum mirrors the concerns expressed in global literature, where students often struggle to distinguish between acceptable assistance and inappropriate outsourcing of intellectual work.

Pedagogical Value and Perceived Advantages

When asked about the advantages of using AI compared to traditional methods, students overwhelmingly emphasised speed, clarity, and cognitive support. Gugu succinctly noted, *"AI is fast and that is why people use it more than traditional methods,"* highlighting the time pressures experienced by students navigating multiple modules and assessments.

Students also appreciated AI's personalised approach. Sarah found that *"AI explains the topic better,"* while Bheki valued the diversity of explanations available, stating that AI *"can give one different approaches to a question."* Peter emphasised the way AI could simplify complex academic texts, explaining that AI responses were *"good and concise,"* which *"helps me understand more"* and generate relatable examples.

These reflections resonate with broader findings in the literature highlighting AI as a tool capable of enhancing conceptual access, improving clarity and supporting independent learning, albeit in ways that risk reducing cognitive struggle and deep engagement.

Concerns about AI: Critical Thinking, Laziness and Academic Integrity

Despite widespread use, most participants believed that universities should discourage AI use, citing fears that students would become "lazy," overly dependent and less capable of critical thinking. Sarah argued that AI *"hinders critical thinking,"* while John felt that learners should *"refer to it when unsure"* but not rely on it as a primary tool. Bheki warned that AI could "*create lazy students that cannot think critically,"* a concern echoed by several peers.

Some respondents also linked AI use to a diminished sense of academic authenticity. Bongani argued that once AI is used extensively, *"it is no longer a student's original work,"* a sentiment

also expressed by Ayanda, who insisted that her work *"should be a reflection of my own knowledge."*

A few respondents offered more moderate positions. Dumisani believed AI should be encouraged because it *"helps students get more information in a short space of time,"* while Gugu supported a balanced approach where students use AI *"not too often,"* suggesting more nuanced perspectives on responsible adoption.

The findings highlight a complex ambivalence: pre-service teachers rely heavily on AI for clarity, support and efficiency, yet simultaneously fear its potential to undermine genuine learning. Their concerns mirror broader scholarly debates about AI ethics, cognitive development and academic integrity. The data reveals a cohort attempting to balance technological affordances with the foundational goals of university education, often without institutional guidance or clarity.

Research Question 2: Focus Group Discussions
Pre-service Teachers' Perceptions of Learners' Use of AI During Teaching Practice

The focus group discussion revealed a striking shift in students' perspectives when they moved from their role as university learners to their role as novice teachers during teaching practice. Although many participants used AI extensively in their own academic work, almost all adopted a far more restrictive stance when considering whether school learners should use AI for their assignments.

A dramatic shift in attitudes: From users to enforcers

When asked whether they encouraged learners to use AI, the overwhelming response was "no." Participants articulated strong concerns about dependency, loss of critical thinking, plagiarism, and compromised learning. Peter, who personally used AI as a "starting point" in his university work, strongly opposed its use in schools, stating:

"No, because they will lose the capacity to think for themselves. They will depend on AI for everything."

John echoed this sentiment, remarking:

"No, because it prevents them from using their general knowledge and creative thinking."
Similarly, Gugu highlighted concerns about effort and academic motivation:

"No, I did not encourage them because AI will somehow make them not want to do their work. It will make them lazy."

These comments reflect the beginnings of a professional identity grounded in responsibility for learners' cognitive development and ethical learning behaviours.

Concerns About Dependency, Cognitive Skills and Academic Honesty

Several students expressed fears that AI would undermine foundational learning and promote shortcuts rather than authentic engagement. Amahle argued that:

"No, because it does not allow students to further their knowledge on their own. Answers are generated for them. No actual learning takes place."

Ayanda offered a strongly ethical stance:

"No… AI prevents learners from reaching their full competency. AI is a 'cheat' way to pass. I want my students to pass honestly. Their own opinions should be evident, not opinions from online sources."

For Bongani, originality was central to academic development:

"No, I did not encourage learners to use AI. I encouraged them to be original and produce their own work."

These responses reveal deep anxieties about how AI might disrupt traditional conceptions of learning, authorship, and intellectual development—concerns also echoed in global literature on AI in schooling. Plagiarism and homogenised assignments were also significant concerns. Dumisani, for example, warned that:

"Sometimes the assignment may be similar to another student."

This anxiety reflects broader debates about AI-generated uniformity and the erosion of individual voice within assessment systems.

Accuracy, Misconceptions and Misinformation

Participants also worried about the reliability of AI outputs. Ayabonga explicitly highlighted accuracy as a limitation:

"No because AI is not accurate and it creates lazy students."

This shows that pre-service teachers are beginning to recognise the problem of AI hallucinations, even if they are not yet equipped with formal AI literacy training to act on this insight pedagogically.

Developmental Appropriateness and Cognitive Readiness

Some participants grounded their reasoning in developmental psychology, arguing that high school learners are still acquiring foundational skills and therefore should not rely on AI tools. Bandile explained:

"No, I did not encourage learners… because everything they learn is at an easy level and the content is less complicated."

This suggests a belief that only more advanced students, perhaps at university level, have the cognitive maturity to use AI responsibly.

Minimal Nuance: Occasional Conditional Acceptance

Only one participant (Sarah) suggested a more conditional approach to AI use, noting:

"I would advise learners not to rely on it, but they can use it to polish their assignment."

Her position acknowledges AI's potential as an editorial tool rather than a content generator—a distinction not yet systematically taught in teacher education but emerging in practice.

Synthesis of Student Voices

Across the focus group, student teachers consistently expressed that AI poses risks to critical thinking, originality, and self-driven learning, noting that learners may become overdependent on AI in ways that reduce cognitive effort. They also worried that AI can generate inaccurate, overly similar, or even plagiarised responses, and emphasised that high school learners are not yet developmentally prepared to use such tools ethically. Underpinning these concerns was a strong sense of professional responsibility, with participants asserting their obligation to preserve honest learning, authentic assessment, and genuine student effort. Taken together, these verbatim responses highlight the deep ambivalence pre-service teachers feel: although they personally benefit from AI in their own studies, they actively restrict its use for learners. Their perspectives illuminate the pedagogical, ethical, and developmental complexities that shape the integration of AI into schooling.

DISCUSSION

Interpreted through transition pedagogy, the tensions identified in this study point less to individual ethical failure and more to the absence of curriculum-embedded support for AI literacy. Although the university's *Principles and Guidelines on the Use of Generative Artificial Intelligence Tools in Academic Work* articulate clear expectations regarding ethical use, verification, and academic integrity, these expectations remain largely disconnected from students' everyday learning experiences. As Kift (2025) argues, policy statements alone are

insufficient to support students through complex academic transitions; new practices must be explicitly taught, scaffolded, and normalised within the curriculum. In this study, pre-service teachers relied heavily on AI for clarity, efficiency, and academic support, yet simultaneously expressed concern about its impact on critical thinking and originality. From a transition pedagogy perspective, such ambivalence is a predictable outcome of fragmented, non-curricular responses to emerging academic practices.

AI as a Support Tool: The Student Identity

As university students, participants reported widespread, pragmatic, and often enthusiastic use of AI tools. They described AI as a way to enhance clarity, simplify complex ideas, refine writing, and overcome academic challenges. Peter explained that he uses AI *"to understand the topic or the assignment better… as a starting point,"* reflecting a metacognitive use of AI to scaffold conceptual access. Similarly, Bheki noted that AI helps him *"break down the questions"* and *"make my assignment more academic,"* suggesting its use as a mediating tool for academic discourse.

Other participants emphasised AI's efficiency and accessibility. Gugu stated simply, *"AI is fast and that is why people use it more than traditional methods,"* while Dumisani described it as *"fast and efficient… answering questions in a step-by-step manner."* Several students also admitted to ethically questionable practices. Sarah shared, *"I take my assignment [and] ask AI to write it in a professional manner,"* and Ayabonga noted that she used AI *"for references,"* a practice that often produces fabricated citations.

These findings reinforce literature showing that learners adopt AI tools to bridge gaps in content understanding, writing proficiency, and time constraints, but often without adequate awareness of ethical boundaries or verification practices (Ngo, 2023).

Notably, while the university's AI Guidelines require verification and disclosure of AI-generated content, none of the participants described verifying outputs, checking for hallucinations, or disclosing AI use, suggesting a significant implementation gap between policy and practice.

Tensions and Fears: Student's concerns about Learning with AI

Despite their frequent use of AI, many participants expressed strong reservations about its impact on deep learning. For example, Sarah argued that AI *"makes you lazy to think for yourself"* and *"hinders critical thinking."* Bheki agreed, asserting that encouraging AI would *"create lazy students that cannot think critically."* Ayabonga similarly warned that *"students become lazy to read and do research."*

This ambivalence—enthusiastic use paired with fear of cognitive decline, is consistent with international concerns that AI may reduce learners' opportunities for productive struggle, diminish epistemic agency, and create reliance on automated solutions (Cotton et al., 2024;

Luckin, 2019). The participants' contradictory positions highlight a dual consciousness: they rely on AI to complete their own assignments yet fear its potential to erode essential academic skills.

A Transformational Shift: From Student to Teachers

The most striking insight from the study lies in how participants' perspectives changed once they assumed the role of teachers during school practicum. Almost unanimously, participants *discouraged* learners from using AI for assignments. Their rationale centred on academic integrity, cognitive development, originality, and developmental appropriateness.

Transition pedagogy provides a useful explanation for the sharp shift in participants' positions as they moved from student to teacher roles. As students, participants engaged pragmatically with AI to manage workload and enhance understanding; as novice teachers, they adopted restrictive and prohibitive stances toward learners' AI use. Kift (2025) suggests that such contradictions signal an incomplete transition rather than hypocrisy. Without curriculum-embedded scaffolding that supports progression from AI use, to critical evaluation, and ultimately to pedagogical application, pre-service teachers are left to rely on moral intuition and fear of academic misconduct. The findings therefore reflect a developmental gap in teacher education programmes, where institutional AI policy exists without a corresponding curriculum pathway to support ethical and pedagogical integration.

Peter, who used AI himself at university, firmly stated:

"No, because they will lose the capacity to think for themselves. They will depend on AI for everything."

John expressed concern about the erosion of foundational thinking skills:

"No, because it prevents them from using their general knowledge and creative thinking."

Others emphasized learner effort and motivation. Gugu stated:

"No… AI will somehow make them not want to do their work. It will make them lazy."

Several responses reflected the belief that AI inhibits authentic learning. Amahle argued:

"No, because it does not allow students to further their knowledge on their own. Answers are generated for them. No actual learning takes place."

These comments reveal a strong professional instinct to protect learners' intellectual development, even when participants themselves benefit from AI in their own studies.

Concerns about Plagiarism, Accuracy, and Misinformation

Participants also voiced concerns about AI-generated plagiarism and uniformity. Dumisani highlighted the risk that learner work *"may be similar to another student,"* signalling anxieties about indistinguishable outputs. Accuracy was also a recurring theme. As Ayabonga stated, *"AI is not accurate and it creates lazy students."*

This indicates an intuitive awareness of hallucination and misinformation, even though participants have not been formally trained to evaluate AI reliability.

Developmental Appropriateness and Pedagogical Judgement

Several student teachers grounded their discouragement in developmental reasoning. Bandile commented,

"Everything they learn is at an easy level and the content is less complicated," suggesting that high school learners lack the cognitive readiness for responsible AI engagement.

Ayanda framed AI use as ethically problematic and misaligned with genuine learning:

"AI is a 'cheat' way to pass… I want my students' opinions to be evident within their work, not opinions from many online sources."

This demonstrates the early formation of teacher identity around academic integrity and epistemic responsibility.

Bridging the Gap Between Policy, Practice and Pedagogy

Together, these findings expose two converging gaps: a policy–practice gap, where students' everyday use of AI does not align with the university's expectations for verification, transparency, accuracy checking, and ethical conduct, and a pedagogical gap, where pre-service teachers rely heavily on AI yet have not been trained to integrate it ethically, developmentally, or pedagogically into their teaching. Although the university's Principles and Guidelines on the Use of Generative AI offer a solid regulatory foundation, the participants' responses indicate that these guidelines have not been fully internalised or operationalised. As a result, pre-service teachers are navigating AI without structured AI literacy, leading to inconsistent, ad hoc, and often contradictory practices.

Implications for Teacher Education

Consistent with transition pedagogy, the findings indicate that AI literacy should be embedded within teacher education curricula as a core academic and professional capability rather than treated as an optional or peripheral concern. Kift (2025) argues that curriculum is the central

mechanism through which institutions can support ethical participation, agency, and professional identity formation during periods of disruption. For teacher education, this requires the intentional design of curriculum pathways that scaffold pre-service teachers' engagement with AI, from supported academic use, to critical evaluation, and ultimately to ethical pedagogical application. Without such curriculum-embedded approaches, pre-service teachers are likely to continue navigating AI through contradiction, embracing it privately while policing it publicly, thereby reproducing policy–practice misalignment across higher education and schooling contexts. The strong student voices in this study confirm that without this training, pre-service teachers will continue to rely on personal intuition, embracing AI for themselves while policing it for learners, in ways that reflect broader societal anxieties rather than informed pedagogical decision-making.

Interpreted through Kift's curriculum-based transition framework, the tensions identified in this study point less to individual student failure and more to a lack of intentional curriculum design around AI literacy. While the university's Principles and Guidelines on the Use of Generative Artificial Intelligence Tools in Academic Work articulate clear expectations regarding ethical use, verification, and academic integrity, these expectations have not yet been translated into curriculum-embedded learning experiences. In Kift's terms, AI literacy has not been made sufficiently explicit, scaffolded, or systematically integrated into teacher education coursework. As a result, pre-service teachers rely on personal judgement and moral intuition, using AI pragmatically as students while simultaneously policing or prohibiting its use as teachers. This contradiction reflects an unresolved transition in which institutional policy exists in isolation from curriculum practice. From a Kiftian perspective, the challenge is therefore not resistance to AI, but the absence of a designed curricular pathway that supports students to move from AI use, to critical evaluation, and ultimately to ethical pedagogical application.

CONCLUSION

This study examined pre-service teachers' experiences and perceptions of artificial intelligence (AI) within a South African teacher education context during a period of significant institutional policy change. The findings reveal a cohort of students who are already deeply immersed in AI-mediated academic practices yet remain uncertain, conflicted, and unevenly prepared to navigate AI responsibly, both as university learners and as emerging teachers. As students, participants found AI to be an indispensable tool for explanation, clarity, structure, and efficiency. Several openly described relying on AI to *"break down questions," "explain the topic better,"* or even *"write [assignments] in a professional manner."* However, this personal use was not accompanied by the verification, transparency, or ethical engagement required by the university's Principles and Guidelines on the Use of Generative AI Tools in Academic Work. This gap highlights a disjunction between policy expectations and student practice. Yet when these same individuals assumed the role of teachers during school practicum, their perspectives shifted dramatically. Nearly all participants discouraged learners from using AI, arguing that AI prevents the development of foundational skills, encourages laziness, compromises originality, and limits authentic learning. Comments such as *"It prevents them from using their general*

knowledge," "No actual learning takes place," and *"AI is a 'cheat' way to pass"* demonstrate the intensity with which participants policed AI use in school settings. Their reasoning reflects emerging professional identities grounded in ethical responsibility, academic honesty, and learner development—yet it also reveals a tension between how they regulate AI for learners and how they rely on it themselves.

This contradiction underscores two key challenges. First, there is an implementation gap: students are engaging with AI extensively but without a clear understanding of the ethical, academic, or policy requirements surrounding its use. Second, there is a pedagogical gap: although student teachers recognise the risks and complexities of AI in schooling, they have not been explicitly equipped with the knowledge, frameworks, or pedagogical strategies needed to model or teach responsible AI use. Without structured AI literacy integrated into their programme, participants navigate AI through intuition, personal values, or fear of misconduct rather than informed pedagogical judgement.

The findings therefore point to an urgent need to embed AI literacy within teacher education as a core component of professional formation. This includes training in evaluating AI outputs, identifying inaccuracies, understanding algorithmic bias, designing AI-aware assessments, teaching academic integrity in an AI-rich environment, and guiding learners' developmental readiness for AI-supported tasks. Such training would help bridge the disconnect between students' own AI practices and the expectations they hold for their learners, and would ensure that institutional policy is translated into pedagogically meaningful action.

Future research could extend this work by exploring how pre-service teachers' AI practices evolve longitudinally as they transition into full-time teaching, how institutional AI policies become internalised over time, and how variation in school contexts shapes teacher attitudes toward AI. Comparative studies across universities with differing AI policies may further illuminate the relationship between governance frameworks and classroom practice.

Ultimately, the study demonstrates that while AI has already become an integral part of student learning, its role in schooling remains contested, morally charged, and pedagogically complex. For universities preparing the next generation of teachers, the challenge is not merely to regulate AI use but to cultivate reflective, critically informed, and ethically grounded practitioners who can navigate and teach others to navigate the rapidly evolving landscape of AI in education.

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