



AI-Enhanced Learning towards Reviving Educational Foundations in the South African Teacher Education Space

¹Mensah Prince Osiesi & ²Nomanesi Madikizela-Madiya

^{1&2}Department of Educational Foundations, University of South Africa

¹<http://orcid.org/0000-00021-7660-6127>

²<https://orcid.org/0000-0002-4629-2913>

*Corresponding Author: osiespm@unisa.ac.za

ABSTRACT

Background: Educational foundations disciplines, such as the Philosophy of Education, Sociology of Education, and History of Education, among others, are crucial for training future teachers. Yet, in some contexts, teacher educators have struggled to attract students' interest in enrolling in these disciplines. Meanwhile, although Artificial Intelligence (AI)-enhanced learning has increasingly been recognised for promoting personalised, interactive, and student-centred learning experiences, few studies have examined its potential as a strategy for improving students' interest in Educational Foundations within the South African university context.

Objective: This study, therefore, explores opportunities for AI-enhanced learning as a strategy for improving declining students' interest in Educational Foundations (EDF) in universities in South Africa.

Method: The study is conceptual in design, which provides an overview of AI-Enhanced Learning in relation to students' interest in EDF, vis-à-vis the Philosophy of Education. It employs a reflective methodology, as well as insights from the literature.

Results: This paper highlights that training future teachers in AI-enhanced philosophy of education can benefit them in future classrooms, and that actionable strategies should be adopted in enhancing students' interest and enrolment in EDF programmes.

Conclusion: EDF is crucial for teacher preparation. Opportunities of AI-enhanced learning needs to be made available to educators and teacher trainees. Actionable strategies that fosters students' interest and enrolment, as well as creating more awareness about the relevance of EDF as a programme is important.

Unique Contribution: This paper provides a baseline on the intricacies of AI-enhanced learning and strategies for improving students' interest and enrolment in EDF programmes.

Key Recommendations: The findings suggest that to enhance students' interest in EDF, especially in contexts marked by inequality, diversity, and historical legacies, including South Africa, educators should be equipped with the intellectual tools to navigate the tensions between traditions and innovation. Students and teachers alike should be trained on how to adopt and apply AI tools and technologies in their future AI-enhanced classroom transactions. Fostering positive attitudes, values, knowledge, and philosophies of EDF, as well as increased students' enrolment in the discipline, should be prioritised and sustained. Furthermore, EDF courses should be expanded to include critical engagement with ethical technology adoption and intense AI literacy, while being complemented by the adoption of interactive and participatory pedagogies by educators.

Keywords: AI-Enhanced Learning, teacher education, educational foundations, future teachers.



INTRODUCTION

In South Africa and similar contexts, universities have experienced declining enrolments in theoretical and foundational disciplines, particularly within teacher education (Davids & Waghid, 2020; Robinson et al., 2024). At the same time, rapid technological developments, including the widespread adoption of artificial intelligence (AI), have shifted student interest toward technical and practical fields. This paper argues that the rise of AI in teaching and learning creates renewed opportunities for educational foundations disciplines (EDF). Two interrelated reasons support this claim.

First, the effective and ethical use of AI-enhanced learning environments depends on teachers' understanding of foundational educational disciplines and their ability to instil critical reasoning in learners (Rahman et al., 2026). Teachers and learners must be able to evaluate AI-generated information critically and make informed judgments about its classroom application. Technical knowledge alone is insufficient without philosophical and ethical reflection. Second, although AI promises personalisation, efficiency, and data-informed instruction, these developments still require grounding in educational philosophy, ethics, sociology, and related disciplines (Owubokiri, 2026). AI-driven tools, including adaptive learning systems and generative models, challenge traditional pedagogies and demand new approaches to teacher preparation, curriculum design, and ethical stewardship (Walter, 2024). Consequently, EDF remains central to ensuring that technological innovation advances rather than undermines humanistic educational values.

This paper, therefore, explores how educational foundations can inform the responsible integration of AI into education while simultaneously revitalising student interest in these disciplines. Existing studies have examined AI and education from various geographical and methodological perspectives, but limited research has explored the relationship between AI and EDF within the South African teacher education context. The study adopts a conceptual research design grounded in reflective methodology. Conceptual research examines ideas and relationships using existing theory and literature rather than new empirical data (Jaakkola, 2020). Reflective methodology involves critical engagement with assumptions, experiences, and practices to generate deeper understanding (Sherwood, 2024; Westin et al., 2026).

The paper proceeds in seven sections. It first conceptualises EDF, then discusses its value in teacher education, and examines reasons for declining student interest. Thereafter, it explores the role of philosophy of education within EDF, ways of reintegrating philosophy into teacher education programmes, the importance of philosophy in AI-enhanced classrooms, and the implications of AI for the future of education. The paper concludes with recommendations for policy, curriculum, and research.

The conceptualisation of Educational Foundations

Educational Foundations (EDF) may refer either to a discipline or to a field comprising several sub-disciplines, including philosophy of education, sociology of education, history of education, psychology of education, and comparative education. Each component of EDF contributes distinct insights. Among others, Philosophy of education examines questions of knowledge, ethics, truth, and educational purpose. Sociology of education investigates the relationship



between schooling and social structures such as inequality, power, and culture. Psychology of education focuses on cognition, learning, and development, while the history of education contextualises contemporary educational systems within broader historical trajectories (Robinson et al., 2024). Together, these perspectives provide teachers with intellectual tools to critically interpret educational policy, curriculum, and classroom practice. Thus, EDF is a multidisciplinary component of teacher education that develops the knowledge, attitudes, and skills required for professional teaching (Banda & Mbewe, 2005). Rather than viewing teaching as a purely technical activity, EDF encourages teachers to understand education as a social, moral, and intellectual enterprise. In the EDF disciplines, one obtains conceptual tools for critically interrogating technological transformation in education (Barnett & Teise, 2024; Dearden, 2024), as well as the ethical and socio-cultural grounding necessary for the responsible integration of AI into educational practice. AI technologies increasingly simulate human cognitive processes such as reasoning, problem-solving, and instructional personalisation (Khoza & Van der Walt, 2025). These developments create important opportunities for research within EDF because foundational disciplines examine the deeper purposes, meanings, and consequences of education.

In South Africa, EDF occupies a particularly significant position because of the country's history of inequality and its constitutional commitment to democracy, social justice, and human rights (Robinson et al., 2024; Barnett & Teise, 2024). Theoretical insights from EDF help teachers engage critically with issues such as inequality, language diversity, social justice, and cultural identity (Knight & Segura, 2025). Indigenous philosophies, especially Ubuntu, further enrich EDF by emphasising interconnectedness, communal responsibility, and ethical relationships. EDF can therefore be understood as the knowledge domain that interrogates the purposes, values, and power relations underpinning education. In societies undergoing rapid social and technological change, EDF remains essential for ensuring that educational practice remains ethically grounded and socially responsive.

The Value of Educational Foundations in Teacher Education

Teacher education programmes are designed to produce professionals who possess pedagogical competence, subject expertise, and ethical awareness. Where EDF is weak, teacher education risks becoming fragmented, technicist, and disconnected from broader social realities (Ndebele et al., 2024). Recent South African and international studies stress that strong theoretical and philosophical frameworks are crucial if teachers are to become agents of transformation rather than merely deliverers of the curriculum (Robinson et al., 2024; Barnett & Teise, 2024). Therefore, first, by engaging with philosophical and sociological perspectives, student teachers learn to question assumptions about knowledge, curriculum, and authority. Second, EDF could foster ethical awareness and professional responsibility. Teachers should not merely be transmitters of knowledge but also moral agents who influence learners' values and attitudes (Beazidou, 2026; Low, 2024). Third, EDF helps teachers understand the social context of education. South Africa's education system reflects broader societal dynamics, including inequality, cultural diversity, and linguistic plurality (Muyambi & Ahiaku, 2025). The sociological and historical perspective from the course of study could enable teachers to



understand how these factors shape learners' experiences and opportunities. EDF provides conceptual tools to analyse policy, inequality, and classroom practices, enabling teachers to link their work to social transformation (Robinson et al., 2024).

Fourth, EDF supports reflective practice. Teachers who understand theoretical perspectives on learning and knowledge are better able to evaluate their teaching strategies and adapt them to different contexts (Kolojo, 2025). Reflective practitioners continuously assess their methods and refine their practice in response to changing conditions (Dursun & Aykan, 2025). Lastly, EDF contributes to transformative education. The post-apartheid vision of education emphasises democracy, social justice, and human rights. Philosophical approaches to education, which are subsumed within education foundations, particularly those influenced by critical pedagogy, encourage educators to view teaching as a means of empowering learners and promoting social transformation (Kruszelnicki, 2026).

Students' Declining Interest in EDF?

The declining enrolment in EDF within South African teacher education reflects broader epistemic, political, and institutional shifts in higher education. Historically, philosophy of education, among others, played a significant role in shaping pedagogical debates, particularly during apartheid, when ideological struggles animated educational thought (Koopman & Koopman, 2024). In the post-apartheid period, however, philosophical engagement has diminished, leaving philosophy of education less influential within policy, curriculum, and teacher preparation (Griffiths, 2026). One major factor contributing to this decline is the growing dominance of technical rationality in teacher education.

Contemporary reforms increasingly emphasise competencies, standards, and measurable outcomes at the expense of theoretical depth (Kuchumova & Mukhamejanova, 2025). Student teachers are therefore encouraged to view teaching primarily as a set of techniques rather than as an ethical and reflective profession. This trend reflects broader neoliberal tendencies within higher education, where success is measured through efficiency, accountability, throughput rates, and performance indicators (Griffiths, 2026). Within such contexts, EDF is often perceived as lacking immediate practical value compared to instructional methods or classroom management courses.

The rise of instrumentalist orientations to education further intensifies this perception. In societies characterised by unemployment and economic uncertainty, students understandably prioritise qualifications that appear to offer direct employment opportunities (Giotis et al., 2025). Disciplines perceived as abstract or theoretical, such as philosophy of education, with its emphasis on normative inquiry, epistemology, and critical reflection, are often viewed as disconnected from the practical demands of the labour market. This perception is reinforced by societal narratives that equate education with economic productivity, thereby narrowing the perceived value of knowledge to its immediate applicability (Cogavin, 2024; Krücken, 2024).

Curriculum overload also plays a significant role in shaping students' disengagement from EDF. Teacher education programmes in South Africa are densely structured, requiring students to complete a wide range of modules, practicum experiences, and assessments within limited



timeframes (Van Heerden et al., 2020). Under such conditions, students often adopt strategic approaches to learning, focusing on completing tasks efficiently rather than engaging deeply with complex ideas regarding teaching and teaching theories. Perceptions of the abstractness of EDF disciplines have consequences, leading to pedagogical approaches that fail to connect philosophical concepts to lived educational experiences.

These dynamics are situated within a broader cultural context that privileges technological proficiency and economic productivity over ethical reflection and critical thought. In an era characterised by rapid digital transformation, disciplines that foreground values, meaning, and moral reasoning are often overshadowed by those that promise innovation and efficiency. The increasing prominence of AI in education exemplifies this shift. AI technologies now enable personalised learning, automated feedback, and data-driven decision-making, offering significant benefits for teaching and learning. These developments reinforce a technocratic orientation, where efficiency and optimisation become central concerns.

On the other hand, the expansion of AI in education simultaneously reveals the limitations of a purely instrumental approach to teacher preparation. While AI offers opportunities for personalised instruction, enhanced accessibility, and improved assessment practices, it also raises profound ethical and epistemological questions. Concerns about unequal access to digital resources and the potential erosion of critical thinking underscore the need for deeper reflection on the purposes and consequences of educational technologies. In contexts marked by inequality, such as South Africa, there is a real risk that uneven access to digital infrastructure may exacerbate existing disparities. These challenges highlight the enduring relevance of EDF: without philosophical engagement, teachers may lack the conceptual tools needed to critically interrogate the role of technology in education. Thus, the future of teacher education depends not on abandoning philosophy, but on reimagining it as an indispensable resource for navigating the ethical, social, and intellectual complexities of a rapidly changing world.

In South Africa, philosophical debates about education have historically been intertwined with political and ideological struggles (Griffiths, 2026; Robinson et al., 2024). The philosophy of education is crucial for interrogating the purposes of education in relation to decolonisation, economic precarity, and humanitarian goals beyond narrow employability indicators (Maistry, 2023). It contributes to teacher education by addressing key questions, such as what is the moral purpose of education? What constitutes meaningful knowledge? How should teachers relate to learners? And what values should guide educational practice? By engaging with these questions, teacher education programmes can cultivate teachers who are reflective, ethically grounded, and socially responsible.

Philosophy of education in teacher education preparation programmes

The place of philosophy of education within teacher education has long been contested, particularly in contexts where professional preparation is increasingly driven by technical competence and measurable outcomes (Maistry, 2023). Yet, in an era defined by rapid technological change, deepening social inequalities, and complex ethical dilemmas, the need for philosophically grounded teachers has become critically urgent. If teacher education is to remain



intellectually robust and socially responsive, philosophy of education must be reimagined not as an abstract or peripheral discipline, but as a central, generative force that shapes how teachers think, act, and make meaning of their practice (Bozkurt et al., 2026). This repositioning is especially essential in preparing teachers for AI-mediated and inequality-marked futures, where questions of justice, knowledge, and human agency are constantly negotiated (Maistry, 2023; Ng et al., 2023; Ng et al., 2025).

Among the key strategies for achieving this change lies in embedding philosophical inquiry across the teacher education curriculum. Philosophical questioning, critical pedagogy, and the implications of technology should be treated as a cross-cutting competence integration to ensure that student teachers encounter philosophy not as distant theory (Maistry, 2023). In this way, philosophy becomes constitutive of professional thinking rather than supplementary to it. Equally important is the adoption of problem and case-based pedagogies that situate philosophical reflection within concrete educational realities. By engaging with contextual policy debates, school funding inequalities, and AI-driven grounded cases, abstract philosophical principles are connected to lived educational challenges (Barnett & Teise, 2024; Ndebele et al., 2024; Robinson et al., 2024; Waks, 2019). Through such engagements, philosophy is experienced as a practical tool for critical analysis, decision-making, and problem-solving. This fosters reflective practitioners who are not only aware of their pedagogical choices but are also capable of justifying them within broader philosophical frameworks.

As educational technologies reshape teaching and learning, teachers require the capacity to critically interrogate issues such as data and privacy ethics, algorithmic bias, and the implications of artificial intelligence for pedagogy and equity. Integrating philosophical reflection with digital literacy enables teachers to navigate these complexities with informed judgment and ethical sensitivity (Limbu, 2026). Moreover, aligning philosophical engagement with policy frameworks such as the Minimum Requirements for Teacher Education Qualifications (MRTEQ) reinforces its role in cultivating critically aware, contextually responsive, and socially committed educators (Barnett & Teise, 2024). Evidence consistently suggests that when philosophy is taught dialogically and meaningfully connected to practice, it enhances critical thinking, moral courage, and reflective judgment, capacities that are indispensable for teaching in uncertain and rapidly evolving technology-driven futures (Felix et al., 2025).

Philosophy of Education in AI-Enhanced Classrooms

The accelerating integration of AI into educational systems has intensified longstanding philosophical questions about knowledge, ethics, and the purposes of schooling (Gouseti et al., 2025). Contemporary scholarship emphasises that AI is not merely a technical tool but also a socio-technical object of epistemic and ethical scrutiny (Wiese et al., 2025). Within this context, philosophy of education becomes indispensable, as it equips educators with the conceptual tools to interrogate truth claims, navigate moral dilemmas, and sustain human-centred educational values in increasingly automated environments (Tanchuk, 2021). Philosophical inquiry, particularly epistemology, enables educators to question what counts as valid knowledge and how authority is constructed in digital environments. In this regard, education must move beyond passive consumption of AI outputs to active evaluation and critique, ensuring that teachers and



learners develop intellectual autonomy. Without such philosophical grounding, classrooms risk becoming spaces where algorithmic authority substitutes for the critical pedagogy, reasoned judgment, and reflective inquiry.

Closely related to this is the role of philosophy in strengthening analytical reasoning and critical inquiry within AI-mediated learning environments. While AI can rapidly generate information, it lacks the capacity for human judgment, contextual sensitivity, and reflective reasoning. Philosophy of education foregrounds these capacities by emphasising argumentation, logic, and the interrogation of assumptions. In practice, this means that learners are not only exposed to AI-generated content but are also trained to evaluate its reliability, detect bias, and assess its implications. This becomes particularly important in contexts where educational systems are under pressure to prioritise efficiency and measurable outcomes over deep learning. Philosophical engagement thus serves as a counterbalance, ensuring that education remains a space for thoughtful deliberation rather than mere information processing.

Beyond ethics, the philosophy of education engages with deeper ontological and humanistic questions about the nature of the learner and the meaning of education in a technologically mediated world (Dearden, 2024). AI systems often reduce learners to data points, predictive patterns, and performance metrics, potentially obscuring the richness of human experience. Philosophical perspectives challenge this reductionism by asking what it means to be a person, a learner, and a member of a community. In contexts such as the global south, relational philosophies, such as Ubuntu, underscore the importance of interconnectedness, compassion, and shared humanity (Tayali, 2025). These perspectives are crucial in ensuring that AI-enhanced classrooms remain humanising spaces that prioritise relationships and collective wellbeing over purely technical efficiency.

The relevance of philosophy is further evident in its capacity to integrate diverse cultural and contextual perspectives into AI-enhanced education. Much of the discourse on AI ethics is shaped by Global North epistemologies, which may not adequately address the realities of different socio-cultural contexts (Wiese et al., 2025). Philosophy of education provides a space for incorporating local knowledge systems, indigenous perspectives, and contextually grounded ethical frameworks. This is particularly important in African contexts, where values such as communalism, respect, and social harmony play a central role in educational practice. By engaging these perspectives, philosophy ensures that AI integration is not only technically effective but also culturally relevant and socially just.

CONCLUSION AND RECOMMENDATIONS

Educational Foundation Disciplines (EDF) continue to occupy a central role in teacher education in South Africa, particularly in an era shaped by rapid technological advancement and socio-cultural complexity. Disciplines in EDF provide the epistemological and ethical grounding necessary for teachers to understand education beyond technical competence. In contexts marked by inequality, diversity, and historical legacies, EDF equips educators with the intellectual tools



needed to balance tradition and innovation. Without this grounding, teaching risks becoming overly technocratic and detached from its moral and transformative responsibilities.

The effective and ethical use of AI depends on teachers' understanding of educational philosophy, ethics, and sociology. While AI offers opportunities for personalised learning, efficiency, and data-informed instruction, it also raises concerns regarding autonomy, surveillance, bias, and the dehumanisation of learning. Philosophically informed teachers are therefore better positioned to critically evaluate AI systems and ensure that educational practices remain aligned with democratic values, human dignity, and social justice. EDF provides a critical lens for integrating AI responsibly into education, particularly in South Africa, where unequal access to technology may deepen existing inequalities if AI is adopted uncritically. Sustainable educational reform requires balancing technological innovation with philosophical reflection and human-centred values. Educational systems that focus only on efficiency and performance risk undermining learners' holistic development and teachers' ethical responsibilities. By contrast, systems grounded in strong philosophical engagement are more likely to produce teachers who are critically aware, socially responsive, and adaptable. Further empirical research is needed to explore the relationship among EDF, AI, and teacher preparedness in South African contexts. Such research would support evidence-based policy and ensure that AI integration remains ethically grounded and pedagogically sound.

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Ethical clearance

Not Applicable.

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Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Authors' Contributions.

NM-M and MPO conceived the study, including the design, and the review of the literature. MPO wrote the initial draft of the manuscript. Both authors have critically reviewed and approved the final draft, and are responsible for the content and similarity index of the manuscript.



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The authors declare that no generative Artificial Intelligence (AI) or AI-assisted technologies were used in the writing, analysis, or preparation of this manuscript.

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