

Anonymous Referee

The paper is well-structured and clearly formatted, and the topic addresses a timely and relevant area of inquiry. However, I have several concerns regarding the clarity of contribution, methodological transparency, and alignment of the literature review with the research aims.

Reviewer's comments	Authors' responses
Contribution and Framing The abstract and introduction present the broader context effectively, but the specific contribution of this work to hybrid learning models remains unclear. Clarifying this positioning early would significantly strengthen the paper's framing.	We have revised both the Abstract and Introduction to explicitly position the study as an empirical case study evaluating the implementation of a hybrid and digital or rather AI-supported geoscience curriculum in a resource-constrained university setting. The revised manuscript now clearly states its contributions to geoscience education by demonstrating how digital learning resources, AI-assisted feedback, and field-based activities, can be integrated to address challenges associated with limited laboratory infrastructure, language barriers, and diverse student preparedness. The revised introduction also emphasises the gap in geoscience education literature regarding hybrid learning implementation in emerging higher education institutions in South Africa.
Literature Review Several points in the literature review read as broad claims applicable to contemporary teaching and learning generally rather than to geoscience education specifically.	The literature review has been revised substantially to provide stronger geoscience-specific grounding. General educational statements have been replaced or supported with literature drawn directly from geoscience education research. Additional references have been incorporated to demonstrate how critical reasoning, spatial thinking, field-based learning, and systematic thinking, are distinctive pedagogical requirements within geoscience training.
The characterisation of experiential learning as a competing theory to constructivism requires revision.	The relevant section has been revised to clarify that experiential learning is grounded in constructivist principles rather than being positioned as an alternative framework. We now explain how experiential learning, field investigations, practical exercises, and reflective activities collectively support knowledge construction in geoscience education. The discussion has also been broadened to acknowledge a continuum of instructional approaches ranging from teacher-centred to active learning strategies.
The literature review structure appears loosely connected to the research outcomes.	We have reorganised the literature review around two major themes: • Pedagogical requirements and challenges specific to geoscience education. • The role of hybrid learning environments and AI-supported learning in addressing these pedagogical needs. This restructuring provides a more coherent narrative and establishes a clearer connection between the literature, research objectives, methodology, and findings (Budd et al., 2013; Dolphin et al., 2026)

Methodology The methodology section requires considerably more detail regarding the curriculum design, implementation, and AI-supported components.	We have revised the manuscript in the following ways: 1. The revised manuscript now suggests that the study utilised: – A detailed description of the curriculum structure and learning activities (Table 1). – An explanation of how face-to-face, online, field-based, and independent learning components were integrated (Fig. 2). – Institutional evaluation data (Fig. 7). – Students’ feedback surveys (including open-ended comments). – External examiners’ reports. – Peer review evaluations (Fig. 5). – Students’ performance (Fig. 6). 2. The manuscript is now explicitly explaining that: – Open-ended students’ comments were not subjected to formal qualitative coding or thematic analysis. – Nonetheless, the comments were used illustratively to contextualise qualitative indicators of course implementation and students’ engagement. 3. The revised manuscript now provides: – A description of the AI-supported feedback process, including the stage at which AI tools were introduced, being after the first theory test 1, but during test 2 and test 3, and also during the second field trip (VAFT). – An explanation of how students were guided in the ethical and effective use of AI tools. – Clarification regarding the complementary roles of lecturer feedback and AI-generated feedback during the learning process.
Findings and Discussion The unit topic is only introduced in the results section and should be described earlier in the manuscript.	The description of the instructional unit, including its learning outcomes and assessment objectives, has now been moved to the introduction section, and introduces the implementation of a modern hybrid geology curriculum as a case study from a South African university
Some findings and claims introduced in the discussion do not appear to be grounded in the results.	We have carefully reviewed the discussion section and ensured that all interpretations are directly supported by evidence presented in the results. Statements that extended beyond the available data have either been removed, qualified more cautiously, or repositioned as recommendations for future research.

Overall Contribution

The paper currently reads more as a call for research than as a self-contained empirical contribution.

The manuscript has been revised to strengthen its empirical contribution. Greater emphasis is now placed on the study design, implementation process, and evidence-based findings. The revised manuscript more clearly demonstrates how the reported case contributes practical insights into the design and implementation of hybrid and AI-supported geology curricula in resource-constrained higher education setting. We believe these revisions enhance the manuscript's value to researchers and educators seeking adaptable approaches for geology teaching and learning.