

Peer Review

Review of: "Metacognition and Pedagogy in the Era of Artificial Intelligence"

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The manuscript addresses an important and timely topic at the intersection of metacognition, pedagogy, and AI. The author's conceptual reflections and theoretical synthesis demonstrate an awareness of current challenges and opportunities in the field of educational technology and learning design. However, the paper's current form aligns more with a conceptual paper rather than an empirical or systematic scholarly article, which is what most peer-reviewed educational technology journals are looking for.

Strengths:

- The topic is relevant to current debates in educational technology and learning sciences.
- The introduction frames the broad educational context effectively, situating the discourse for AI-driven pedagogy.
- The paper demonstrates the theoretical importance of metacognition and its pedagogical implications.

Areas Requiring Improvement:

- 1) The manuscript lacks an explicit research design. To meet the standards of an academic journal, the author should articulate whether the work is intended as empirical research, a systematic review, or a theoretical framework paper.
- 2) While the paper outlines the general context, it does not present specific research questions. Clear research aims would provide direction and coherence to the argument. For instance, one might hypothesize about the relationship between AI-supported instruction and students' metacognitive regulation.

3) The paper presents conceptual reflections with minimal engagement with recent empirical studies. To strengthen theoretical claims, the author may consider integrating and critically discussing some works such as:

Dignath, C., & Veenman, M. V. (2021). The role of direct strategy instruction and indirect activation of self-regulated learning—Evidence from classroom observation studies. *Educational Psychology Review*, 33(2), 489–533.

Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education—where are the educators?. *International journal of educational technology in higher education*, 16(1), 1-27.

4) No empirical evidence is presented. Even a small-scale case study, survey, or classroom intervention could greatly enhance the paper's scholarly contribution.

5) The discussion is essayistic rather than analytic. A deeper exploration of how metacognitive theory can be operationalized in AI-supported learning environments, supported by evidence, would clarify the paper's unique scholarly contribution.

Recommendation:

At its current stage, the paper is not yet ready for publication in a peer-reviewed educational technology journal. It could be reconsidered if reframed as a conceptual paper with a rigorous literature synthesis and theoretical framework development.

Declarations

Potential competing interests: No potential competing interests to declare.