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REVIEWER'S REPORT

Manuscript No.: IJAR-59833

Title*: Generative AI-Enabled Adaptive Learning in Higher Education: Deep Learning and Digital Competence A Critical Narrative Review.*

Recommendation: Minor revision required

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality		✓		
Clarity		✓		
Significance		✓		

Reviewer's ID: JPR-212

Detailed Reviewer's Report

This manuscript presents a critical narrative review of generative AI-enabled adaptive learning in higher education, with a specific focus on the relationship between GenAI-supported adaptivity, deep learning and digital competence. The manuscript is unusually rigorous for a narrative review, methodologically self-aware, and clearly written. It is among the strongest submissions reviewed for this journal. The revisions required are minor.

Strengths

The manuscript is exceptionally well positioned in relation to existing scholarship. It clearly distinguishes between what recent syntheses establish and what they do not, and it avoids the common error of treating positive meta-analytic findings as direct evidence that GenAI produces deep learning.

The central argument is clear and consistently maintained: GenAI becomes educationally consequential through the learning design surrounding it, and an unrestricted chat interface is not automatically an adaptive learning environment. The insistence on the distinction between assisted performance and independent competence is the manuscript's most important contribution.

The review approach is described with unusual transparency. The explicit statements that no exhaustive database search, preregistered protocol, duplicate screening, quality scoring or pooled effect estimation was conducted, and that no claim of comprehensiveness or systematic selection is made, are exemplary. This level of methodological honesty is rare.

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The evidence matrix in section 4.4 is particularly valuable. The systematic presentation of each source's contribution alongside its boundary for the review is a model of clear comparative scholarship.

The discussion of competing interpretations, specifically the learning interpretation and the substitution interpretation of positive performance findings, is analytically sophisticated and identifies precisely the inferential boundary that the existing literature does not resolve.

The six-phase adaptive scaffolding cycle is clearly presented, with explicit decision rules, operational criteria and a stated pathway to falsification. The insistence that the model is a design hypothesis rather than a validated intervention is appropriately maintained throughout.

The three testable propositions, and the discussion of how positive, null and negative results should be interpreted, provide a genuinely useful research agenda.

The engagement with DigComp 2.2 is well integrated, and the discussion of digital competence as extending beyond prompt formulation to encompass claim verification, attribution, data protection and bias evaluation is appropriate.

The discussion of equity and local transferability, particularly the emphasis on contextual variables such as connectivity, devices, Arabic-language performance and institutional data policies, is careful and context-sensitive.

The comparison with Chaoui and Derkaoui 2025 in section 8.1 is an interesting editorial move and demonstrates awareness of the journal's existing conceptual-framework publications.

Minor Weaknesses

The manuscript is very long for a narrative review. At 11 pages of single-spaced text plus references, it is at the upper limit of what many journals will accept, and some sections could be tightened. In particular, the repetition of the distinction between assisted and independent performance, which appears in the introduction, the review approach, the conceptual foundations, the critical synthesis and the proposed framework, could be reduced without loss.

The reference to "the author's university" and "An-Najah National University" in sections 1.1 and 5.4 is slightly unclear, since the manuscript does not state the author's institutional affiliation in the body of the text. The reader can infer it from the context, but a brief statement of institutional positioning would be helpful.

The phrase "Palestinian higher education" appears in the abstract and conclusion but is not developed in the body of the review. If the review is intended to have specific relevance for Palestinian higher education, this should be developed further; if it is intended as a general review with Palestinian higher education as one example, this should be made clearer.

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The discussion of self-efficacy findings in Deng et al. 2025 and metacognition findings in Chen and Cheung 2025 is important but could be expanded. The manuscript notes that Deng et al. reported no improvement in self-efficacy and Chen and Cheung reported no significant effect on metacognition, but it does not explore why this might be the case. A brief discussion of possible explanations, such as measurement issues, short intervention durations or the possibility that GenAI-assisted learning genuinely does not promote self-regulatory development, would strengthen the analysis.

The author confirmation section at the end is unusual in a submitted manuscript and appears to be a set of instructions rather than a completed declaration. This should be removed or completed before publication.

Recommendation

Minor revision required. This is a strong and publishable manuscript that makes a genuine contribution to the literature on generative AI and higher education. The author should first consider tightening the manuscript, particularly by reducing the repetition of the assisted-versus-independent distinction, to bring it within a more conventional length for a narrative review. Second, the author should state the institutional affiliation in the body of the text, since the references to "the author's university" and "An-Najah National University" currently lack context. Third, the author should either develop the specific relevance for Palestinian higher education or clarify that the review is general with Palestinian higher education as one example. Fourth, the author should expand the discussion of why self-efficacy and metacognition findings diverge from performance findings, considering measurement, duration and substantive explanations. Fifth, the author should remove or complete the author confirmation section at the end of the manuscript. With these revisions, the manuscript will be suitable for publication and will make a valuable contribution to the field.