Stage 3 REVIEW (Round 2) ─Editorial Synthesis

Paper

"From Snapshots to Trajectories: How Agentic AI Will Redefine Student Learning Outcomes and Transform Student Success Measurement ─Implications for Taiwan's Next Cycle of Institutional Accreditation"

Revision Focus: Integration of co-evolution of AI and human learning perspective (new §4.7 + modifications to §1.1, §2.3, §4.6, §7.1, §8 + 7 new references)

Date: 2026-03-08 **Review Round**: 2 (post co-evolution revision)

Editorial Decision: MINOR REVISION

All five reviewers converge on **Minor Revision**. The co-evolution integration (§4.7) is unanimously recognized as the paper's most distinctive intellectual contribution ─the "double moving target"insight that both the measurement instruments AND the object being measured (learning itself) are co-evolving. However, four issues require attention before acceptance:

1. **Structural**: Paper length and co-evolution threading
2. **Philosophical**: Unresolved theoretical tensions in §4.7
3. **Practical**: §4.7 needs operationalization for QA practitioners
4. **Factual**: Taiwan-specific corrections

None of these require new sections or major restructuring. All are addressable through targeted edits within the existing framework.

I. Consensus Strengths (All 5 Reviewers Agree)

#	Strength	Cited By
S1	"Double moving target"framing is the paper's most original contribution ─elevates it beyond a standard policy paper	EIC, R3, DA
S2	Co-evolutionary loop (5-step cycle in §4.7) is structurally sound and logically necessary	R1, R3
S3	The ADAPT framework gains depth from co-evolution ─three new design principles (definitional monitoring, boundary tracking, generational sensitivity) are well-motivated	EIC, R1
S4	§7.2 ("What This Paper Does NOT Claim") demonstrates exemplary intellectual honesty	EIC, R1, R2
S5	Taiwan-specific institutional knowledge remains accurate and detailed	R2
S6	Three cognitive mechanisms (offloading, augmentation, restructuring) provide concrete theoretical anchoring	R3

II. Revision Roadmap

REQUIRED Items (Must Address)

R-1: Reduce paper length by 15-20% [EIC, R1] **Problem**: The paper is excessively long for a theoretical/policy piece. The co-evolution additions, while valuable, exacerbate this.

Action: Cut 15-20% through: - Tighten §3 (Current Paradigm): Reduce descriptive inventory of MOE instruments; assume expert readership - Compress §5.2 (Comparative Analysis of Scenarios): Currently redundant with §5.1 - Trim §6.1 (Four-Principle Ethical Analysis): Sub-sections on each principle can be condensed - Shorten the Abstract to ≤300 words

Priority: HIGH —affects readability and reviewer goodwill

R-2: Thread co-evolution earlier [EIC] **Problem**: Co-evolution is the paper's deepest contribution but doesn't appear until §4.7 (page ~15 of the manuscript). The reader encounters it too late to appreciate its structuring role.

Action: - §1.1: Expand the existing "double moving target"paragraph (currently 1 paragraph) to make it a framing thesis, not just a passing observation - §2.3: The "Einstein"case already references co-evolution — make the forward-reference to §4.7 more prominent - §4.1 or §4.2: Add a 2-3 sentence bridge that signals co-evolution as the core theoretical extension - §4.6: Already bridges to §4.7 —ensure it explicitly names the "double moving target"

Priority: HIGH —structural coherence

R-3: Resolve Kuhn-Scenario B tension [R1] **Problem**: The paper argues for a Kuhnian paradigm shift (revolutionary, incommensurable) but recommends Scenario B (gradual, evolutionary integration). R1 identifies this as the paper's central methodological tension: "If the paradigm shift is genuinely Kuhnian, why is the recommended path incremental?"

Action: Add a paragraph in §4.1 or §5.1 that explicitly addresses this. Possible resolution: - Kuhn himself noted paradigm shifts in practice are never instantaneous —the revolution is conceptual, the adoption is institutional - Scenario B is not a denial of paradigm shift but a recognition that institutional change operates on different timescales than conceptual change - The co-evolution framework (§4.7) actually resolves this: because learning itself is co-evolving, a single revolutionary break is impossible —continuous adaptation IS the paradigm shift

Priority: HIGH —methodological coherence

R-4: Address Clark-Sterelny philosophical tension [R3] **Problem**: §4.7 cites Clark & Chalmers (1998) for cognitive augmentation (extended mind thesis) and Sterelny (2010) for "scaffolded cognition."These two positions have a known philosophical tension: Clark's extended mind thesis argues tools ARE part of

cognition, while Sterelny's scaffolding view treats tools as environmental supports to cognition without being constitutive of it. The paper treats them as complementary without acknowledging this debate.

Action: Add 2-3 sentences in §4.7's cognitive augmentation discussion acknowledging the tension and explaining the paper's position. Possible framing: "Whether we adopt Clark's constitutive view or Sterelny's scaffolding view, the practical implication for QA is the same: assessment must account for the cognitive ecosystem, not just the isolated learner."

Priority: MEDIUM —philosophical rigor

R-5: Nuance the "cognitive offloading"mechanism [R3] **Problem**: §4.7 presents cognitive offloading (Risko & Gilbert, 2016; Sparrow et al., 2011) as one-directional —humans offload to AI, AI does the work. But the literature is more nuanced: offloading can be strategic (freeing resources for higher-order tasks) or maladaptive (atrophying skills). The paper does not distinguish these.

Action: Add 2-3 sentences distinguishing: - **Strategic offloading**: Frees cognitive resources for synthesis, creativity, ethical reasoning (positive for learning) - **Maladaptive offloading**: Over-reliance leading to skill atrophy (the "Google effect"of Sparrow et al.) - Connect to QA: Assessment must distinguish between students who offload strategically vs. dependently

Priority: MEDIUM —nuances the theoretical contribution

R-6: Operationalize §4.7 for QA practitioners [R2] **Problem**: §4.7's three design principles (definitional monitoring, human-AI boundary tracking, generational sensitivity) are philosophically sound but too abstract for the policy-maker readership. R2 notes: "A HEEACT committee member reading this would not know what to do Monday morning."

Action: For each design principle, add one concrete operational example: - **Definitional monitoring**: "HEEACT's fourth-cycle indicators could include a required annual review of what counts as 'independent student work'in each program, updated as AI capabilities change"- **Boundary tracking**: "Accreditation self-assessment reports could include a 'human-AI contribution map'for each assessed learning outcome"- **Generational sensitivity**: "Longitudinal comparison of cohort learning profiles should adjust baselines for AI-native vs. pre-AI cohorts"

Priority: MEDIUM —bridges theory-practice gap

R-7: Add faculty perspective [R2] **Problem**: The paper discusses students, administrators, policymakers, and AI systems, but faculty voices are conspicuously absent. Faculty are the primary implementers of any assessment change.

Action: Add 3-5 sentences in §5.3.1 (Political Economy of Implementation) acknowledging: - Faculty workload implications of continuous assessment - Faculty AI literacy as a prerequisite - Risk of faculty resistance if changes are perceived as surveillance

Priority: MEDIUM —stakeholder completeness

R-8: Correct Taiwan-specific facts [R2] **Problem**: Three factual issues identified: 1. **AI Basic Act**: The paper may imply it is enforceable legislation; it is a framework law (基本法) that sets principles but requires implementing regulations (施行細則) for enforcement 2. **Standard 3 naming**: Check for consistency in how HEEACT Standard 3 is referenced throughout 3. **Institution count**: Verify the "140+"figure against current MOE data (some institutions have merged/closed)

Action: Verify and correct each item. These are minor but damage credibility with expert readers.

Priority: LOW (factual corrections) —but easy to fix

RECOMMENDED Items (Strengthen but Not Required)

A-1: Add Vygotsky's ZPD to cognitive mechanisms [R3] R3 suggests the co-evolutionary loop would benefit from Vygotsky's Zone of Proximal Development —AI as a dynamic scaffolding partner that continuously recalibrates the ZPD. This would strengthen the educational theory grounding alongside the cognitive science references.

Decision: ADOPT if it can be done in 2-3 sentences within §4.7 without lengthening the paper

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A-2: Acknowledge unfalsifiability concern [DA] The Devil's Advocate argues the co-evolution thesis is "unfalsifiable —whatever happens confirms it."While this critique is partly inherent to theoretical papers, a brief acknowledgment (2 sentences in §7.3 Limitations) would demonstrate intellectual honesty.

Decision: ADOPT —add to Limitations section

A-3: Add meta-theoretical paragraph [R1] R1 suggests §4.7 would benefit from a brief meta-theoretical paragraph explaining why the paper draws on philosophy of mind (Clark, Sterelny) rather than learning science (Vygotsky, Piaget) as its primary framework. This signals methodological self-awareness.

Decision: OPTIONAL —adopt only if it strengthens the argument without adding length

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A-4: Add Bjork's "desirable difficulties"/ Kahneman dual-process [R3] R3 notes these frameworks could enrich the offloading discussion. Bjork's desirable difficulties would argue that some cognitive struggle is pedagogically valuable, complicating the offloading narrative.

Decision: DEFER —interesting but adds complexity without proportional benefit for a policy-focused paper

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A-5: Cost estimates for implementation [R2] R2 notes the absence of even rough cost estimates for the phased implementation. While understandable for a theoretical paper, even order-of-magnitude figures would strengthen policy credibility.

Decision: OPTIONAL —a footnote with caveats would suffice if data is available

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NOT REQUIRED (Reviewer Concerns Addressed by EIC)

Concern	Reviewer	EIC Assessment
"Cathedral on sand"—no empirical evidence	DA	Valid but inherent to theoretical papers; adequately disclosed in §7.2-7.3
"Policy recommendations achievable without theoretical apparatus"	DA	Partially true but misses the point: the theoretical framework guides WHICH policies, not WHETHER to have them
Missing 4E cognition framework	R3	Would require significant expansion; the paper's scope is QA policy, not cognitive science
"Double moving target is rhetoric not theory"	DA	Disagree —it is operationalized through the three design principles; the issue is those principles need more concrete examples (addressed in R-6)

III. Revision Priority Matrix

Priority	Item	Effort	Impact
□ HIGH	R-1: Reduce length 15-20%	High	High
□ HIGH	R-2: Thread co-evolution earlier	Medium	High
□ HIGH	R-3: Resolve Kuhn-Scenario B tension	Medium	High
□ MEDIUM	R-4: Clark-Sterelny tension	Low	Medium
□ MEDIUM	R-5: Nuance offloading	Low	Medium
□ MEDIUM	R-6: Operationalize §4.7	Medium	High
□ MEDIUM	R-7: Faculty perspective	Low	Medium
□ LOW	R-8: Taiwan facts	Low	Low
□ OPTIONAL	A-1: Add ZPD	Low	Low
□ OPTIONAL	A-2: Unfalsifiability note	Low	Low
□ OPTIONAL	A-3: Meta-theoretical paragraph	Low	Low

Estimated net effect: Paper should be 15-20% shorter after revision despite additions, because cuts (R-1) outweigh additions (R-4 through R-7).

IV. Response to Reviewers Template

Authors should prepare a point-by-point response addressing each item in this roadmap:

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R-1: [Action taken / explanation]
R-2: [Action taken / explanation]
...
A-1: [Adopted / Declined with rationale]
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V. Reviewer Summary Table

Reviewer	Decision	Key Concern	Addressed By
EIC	Minor Revision	Length + co-evolution threading	R-1, R-2
R1 (Methodology)	Minor Revision	Kuhn-Scenario B tension + ADAPT derivation	R-3
R2 (Domain)	Minor Revision	§4.7 too abstract + faculty absent + Taiwan facts	R-6, R-7, R-8
R3 (Cross-disciplinary)	Minor Revision	Clark-Sterelny tension + offloading nuance	R-4, R-5
Devil's Advocate	"Partially defensible"	Unfalsifiability + evidence gap	A-2, §7.2-7.3 (existing)

Editorial Synthesis completed by EIC. Revision deadline: address all REQUIRED items (R-1 through R-8) and select RECOMMENDED items.