

# Adopt, adapt, or reject? Analysing student-AI interaction in university curriculum-aligned writing tasks

Yeong-Ju Lee<sup>1\*</sup>, Rauno Parrila<sup>1</sup>, & Danielle Colenbrander<sup>1</sup>

\*Correspondence:

[yeong-ju.lee@acu.edu.au](mailto:yeong-ju.lee@acu.edu.au) &  
[yeong-ju.lee@mq.edu.au](mailto:yeong-ju.lee@mq.edu.au)

<sup>1</sup>Australian Centre for the  
Advancement of Literacy,  
Australian Catholic  
University, Australia



## Abstract

Artificial intelligence (AI) is reshaping academic writing instruction. However, there is limited evidence on how students actually interact with AI and how pedagogy can guide ethical and reflective engagement. Piloted in a first-year undergraduate English language and literacy unit at an Australian university, this paper presents the design and trial of curriculum-aligned, task-based writing materials comprising an AI-assisted guide with structured prompts to support essay preparation with AI. Analysis draws on AI-interaction logs from a case study, complemented by a survey of 207 students. Thematic coding and interactional move analysis of AI-interaction logs observed four recurrent moves – clarification, uptake, adaptation, and rejection – in which the learner negotiated AI feedback. Survey data indicated that while students viewed AI as useful for efficiency and confidence, concerns about plagiarism and over-reliance persisted. This study offers early insights into how structured scaffolds can support ethical, reflective engagement with AI and inform future research.

**Keywords:** Artificial intelligence, academic writing, task-based language teaching, scaffolding, student-AI interaction, AI-interaction logs

## 1. Teaching and Learning Context

Undergraduate students often struggle with academic writing, especially in linguistically diverse contexts like Australia, where around 30% of students are international (Australian Government, Department of Education, 2025), and 25% of households use languages other than English (LOTE) (Australian Bureau of Statistics, 2021). In this context of higher education, artificial intelligence (AI) chatbots such as ChatGPT, Gemini, and Claude are rapidly transforming how students approach academic writing (Barrot, 2023; Jeon & Lee, 2023; Wang et al., 2024; Zhang et al., 2024). However, current implementations of AI in language and literacy learning often remain unstructured and disconnected from pedagogy (Lee et al., 2026; Wu, 2024), raising a need for structured, curriculum-aligned approaches to AI-supported writing.

This paper presents an innovative practice piloted in a first-year undergraduate English language and literacy unit at an Australian university to support students' AI-assisted writing practices. In the unit, students were allowed to use AI to prepare for a major essay assignment, and guidance on ethical AI use was provided in tutorials, including a template for acknowledging whether or not they used AI. Drawing on Task-Based Language Teaching (TBLT) and scaffolding theory (Ellis et al., 2019), we developed a curriculum-aligned four-week writing task sequence to scaffold essay preparation in two conditions: AI-assisted writing and self-reflection writing. This paper focuses on the AI-assisted writing condition to illustrate how structured scaffolds can shape learner-AI interaction and inform task design. The analysis draws on detailed AI-interaction logs from one student who voluntarily completed the full AI-assisted writing sequence and on survey data from a wider cohort ( $n = 207$ ) to provide contextual understanding of broader student practices on AI use.

## 2. Rationale for Innovation

Recent developments in generative AI and large language models (LLMs) have transformed language and literacy education, with chatbots such as ChatGPT, Gemini, and Claude now capable of providing contextually relevant, personalised feedback and sustaining goal-oriented dialogue (Cotton et al., 2024; Sánchez-Torrón et al., 2025; Wang et al., 2024; Warschauer & Xu, 2024; Zhang et al., 2024). In the context of AI-supported language learning and teaching, studies demonstrate that AI can facilitate autonomous revision, improve writing coherence, and enhance student confidence, emphasising the importance of mediation through teacher guidance and reflective interaction (Annamalai et al., 2023; Chen et al., 2023; Jeon & Lee, 2023; Michel et al., 2025; Teraif, 2025; Wu, 2024). However, concerns persist regarding superficial pedagogical alignment, limited teacher preparation, and ethical risks such as plagiarism and authorship ambiguity (Ahn et al., 2024; Alm, 2024; Lee et al., 2026). Collectively, the findings of these studies suggest that AI's effectiveness depends on how its use is mediated, scaffolded, and aligned with pedagogical goals.

Despite increasing interest and evidence of AI use in language education, three key gaps remain. First, while most studies focus on perception data (Alm, 2024; Pack & Maloney, 2023), there is limited evidence of how students actually engage with AI feedback during writing, for example, through turn-taking, selective uptake, or rejection.

Second, few interventions embed AI within curriculum-aligned, assessment-linked tasks. Third, concrete models for fostering ethical and reflective AI use in academic writing remain limited.

Addressing these gaps, the innovation presented in this paper embeds AI use within scaffolded, curriculum-aligned writing tasks informed by TBLT and scaffolding theory (Ellis et al., 2019). TBLT provides a design-oriented framework for developing authentic, goal-driven activities in which tasks serve as units of both instruction and assessment, integrating linguistic, cognitive, and reflective processes. Scaffolding theory complements this by conceptualising guided support that can be gradually adjusted to foster learner independence. Together, these theories offer a principled foundation for designing AI-assisted writing tasks that promote guided participation, critical decision-making, and autonomy.

### **3. Description of the Innovation**

The innovation involved the development of a curriculum-aligned, four-week sequence to support students' preparation for an essay assignment, evaluating texts for suitability in early literacy instruction. Drawing on TBLT and scaffolding principles, the sequence comprised interrelated writing activities modelling guided participation and gradual independence, providing a structured progression across four academic writing sub-skills: vocabulary, clarity, coherence, and argumentation. The tasks were integrated into students' essay drafting process, with structured AI prompts provided for interaction with AI. The prompts were designed to guide critical evaluation of potential revisions and articulation of the reasoning behind possible changes. They modelled cognitive processes for analysing and refining writing through AI feedback, embedding opportunities to adopt, adapt, or reject AI-generated suggestions. Scaffolding was gradually reduced to promote autonomy and ethical decision-making. Materials comprised:

- An AI-interaction writing guide: A weekly sequence of writing tasks and AI prompts designed to help students generate synonyms, paraphrase, check coherence, and build arguments. Each task required evaluation of AI suggestions (e.g., adopting, adapting, or rejecting them) to encourage active reasoning and decision-making (see Appendix 1).
- An AI usage guide: A supplementary resource outlining principles for responsible AI engagement, including prompt design, evaluation of outputs, and reflection strategies to avoid plagiarism or over-reliance.

This innovative sequence was piloted as part of a curriculum implementation within the unit. One participant completed four weekly tasks using the AI-interaction guide with ChatGPT Plus, sharing AI-interaction logs capturing prompts, responses, and revision decisions. To contextualise the pilot within broader student practices, a cohort-wide survey ( $n = 207$ ) was also conducted to examine purposes of AI use, perceived benefits and challenges, and attitudes toward responsible engagement.

### **4. Reflection**

This pilot implementation generated insights at two levels: micro-level evidence from AI-interaction logs and macro-level cohort perspectives. A mixed-methods approach

captured both process-level interaction data and wider cohort trends. Qualitative analysis of AI-interaction logs employed thematic discourse coding to identify recurring functions of AI use (vocabulary, clarity, coherence, argumentation) and interactional move analysis to classify exchanges as clarification, uptake, adaptation, or rejection (see Appendix 2). Descriptive quantitative analysis of survey responses extended these insights to the wider cohort, identifying common purposes of AI use, perceived benefits, ethical concerns, and calls for clearer guidance (see Appendix 3). Insights from the logs and survey were integrated to reveal both individual usage patterns and broader student needs. Together, these data illuminate how structured, curriculum-aligned scaffolding can shape reflective and ethical engagement with AI in academic writing.

#### **4.1 Micro-level insights: Development through scaffolded interaction**

Thematic and interactional move analyses of the AI-interaction logs identified four recurrent moves – clarification (requests for further information), uptake (adoption of AI suggestions), adaptation (modified integration of AI suggestions), and rejection (explicit non-adoption of AI suggestions) – that structured engagement with AI feedback. These moves aligned with the staged task design across the four weeks.

In the vocabulary and clarity tasks (Weeks 1-2), AI functioned primarily as a lexical and stylistic resource. The student frequently requested synonyms or simpler rephrasings and often incorporated AI's responses after clarification. Exchanges were dominated by clarification and uptake, yet even at this early stage she compared alternatives before selecting contextually appropriate terms. Structured prompts therefore supported attention to disciplinary tone rather than mechanical copying.

In the coherence task (Week 3), interaction shifted toward evaluative engagement. Suggested transitions or revisions were frequently modified or rejected when they appeared generic. Adaptation became the dominant move, with AI outputs serving as prompts for reflection rather than solutions. The student extended dialogue by questioning structural suggestions and testing alternatives before revising. Feedback thus became a site of negotiation rather than acceptance.

In the argumentation task (Week 4), engagement developed into dialogic reasoning. The student increasingly sought justification, questioned the sufficiency of evidence, and considered alternative viewpoints before reinforcing her position. Interaction moved beyond surface-level revision toward metacognitive reflection on rhetorical purpose and instructional sequencing. Multi-turn exchanges supported reasoning about coherence, persuasiveness, and pedagogical fit.

A developmental trajectory emerged across the four weeks: from frequent uptake of AI suggestions for lexical refinement to selective adaptation at the discourse level, and finally to dialogic reasoning in argumentation. This progression demonstrates how scaffolded prompts can foster increasingly reflective and self-regulated engagement. Rather than positioning AI as an answer-generating tool, the structured sequence required evaluation, comparison, and justification, operationalising ethical engagement through task design.

#### **4.2 Macro-level insights: Cohort perspectives**

Survey findings (see Appendix 3) contextualise these case-level insights within broader cohort practices. AI use was widespread (72%), with ChatGPT as the dominant platform (87%), followed by Grammarly (30%), QuillBot (12%), and Copilot (11%), with a small number of students also reporting use of Gemini or Perplexity. The most common purposes were brainstorming ideas (58%), grammar or spelling support (54%), and structuring written work (48%). Smaller groups reported using AI for paraphrasing (24%) and referencing (30%), indicating that AI use extended beyond idea generation into textual reformulation and citation-related practices. Efficiency (62%), overcoming writer's block (49%), and increased confidence (36%) were frequently cited benefits. Students therefore viewed AI as a tool for sustaining writing momentum.

At the same time, concerns were substantial: over-reliance (61%), plagiarism risks (47%), and 'robotic' or generic outputs (42%) were frequently reported. Several responses reflected ongoing uncertainty about authenticity and authorship, with students expressing hesitation about how much AI use remained acceptable. More than half of respondents (55%) expressed a need for clearer guidance regarding acceptable and responsible use, including explicit expectations and practical demonstrations of prompt design.

Taken together, the case and survey data converge most clearly at the lexical and early drafting levels. In the case, frequent requests for synonyms and paraphrasing were observed; similarly, survey respondents most often reported using AI for grammar support and idea generation. This convergence suggests that AI is already embedded in early-stage writing processes, but that movement toward discourse-level reasoning may depend on explicit modelling and scaffolded prompts.

### 4.3 Key lessons

The case and survey data indicate that AI's pedagogical value depends not on access alone, but on structured, curriculum-aligned mediation. In this pilot context, AI use concentrated most strongly on lexical precision and sentence-level clarity unless guided by staged prompts requiring comparison, justification, and decision-making. When structured prompts required the writer to adopt, adapt, or reject AI suggestions and explain reasoning, engagement extended toward discourse-level reasoning and argument development. The innovation demonstrates that ethical AI literacy can be operationalised through design rather than through restriction. By embedding structured decision points into assignment-linked tasks, abstract concerns about plagiarism and over-reliance were translated into visible moments of evaluative reasoning. This aligns with calls for reflective and mediated AI integration in writing instruction (Lee et al., 2026; Pack & Maloney, 2023), while extending these discussions by illustrating how scaffolding can be embedded within authentic assessment preparation.

The developmental trajectory observed across the four weeks further illustrates how scaffolded sequencing can support gradual movement from surface-level revision toward dialogic and metacognitive engagement. While previous classroom-based studies have reported improvements in coherence, autonomy, and motivation (Ahn et al., 2024; Wu, 2024; Michel et al., 2025), this pilot provides process-level insight into how such development may unfold through structured interaction with AI.

The survey findings suggest that many students remain uncertain about acceptable

and ethical AI use, echoing broader concerns about autonomy and academic integrity (Alm, 2024; Cotton et al., 2024). They add evidence to the need to move beyond policy statements toward embedded instructional modelling. The innovation demonstrates that structured prompts and annotated task-based demonstrations may reduce ambiguity and foster more deliberate, self-regulated engagement.

In summary, this pilot indicates that AI's perceived benefits – efficiency, confidence, and drafting support – can be channelled toward reflective and educationally purposeful practice when mediated through intentional task design. These insights offer a foundation for refining curriculum-aligned materials and for developing more principled frameworks for AI integration in academic writing.

#### **4.4 Impact**

This study has both pedagogical and theoretical impacts. Pedagogically, it offers a design-oriented model for integrating AI into academic writing instruction by demonstrating how AI interaction can be embedded within curriculum-aligned, assessment-linked task sequences. By requiring the learner to adopt, adapt, or reject AI suggestions and articulate her reasoning, the intervention operationalised evaluative engagement within writing practice. Ethical AI use is thus guided through structured decision-making embedded in task design. The study also provides a concrete example of how scaffolding can be distributed across a staged progression of writing sub-skills. Rather than relying solely on general guidance about responsible AI use, the AI-assisted writing guide aligns AI interaction with specific academic objectives and makes reflective engagement a visible component of revision. This study thus offers a framework for educators seeking to integrate AI into writing instruction while maintaining disciplinary standards and fostering metacognitive awareness.

Theoretically, the study advances a process-level account of AI-mediated writing development grounded in observable learner behaviour. The identification of recurrent interactional moves (clarification, uptake, adaptation, and rejection) provides a structured lens for analysing how learners negotiate AI feedback within task-based writing processes. This interactional perspective complements emerging research examining learner engagement with generative AI in language learning contexts (Michel et al., 2025; Zhang et al., 2024). This reframes AI literacy as regulated participation in mediated dialogue rather than mere tool use. The findings also extend task-based language teaching and scaffolding theory into learner-AI interaction contexts. By encoding scaffolding within prompt design and task sequencing, the study illustrates how instructional mediation can be structured through task design.

#### **5. Limitations**

This pilot study has several limitations. Using a single learner constrains the generalisability of the findings. Nonetheless, it demonstrates that analysing AI-interaction logs can yield valuable pedagogical insights for academic writing instruction. Although triangulation between the case and survey data provided useful contextual insights, larger-scale interventions are needed to determine whether these patterns hold across diverse learners and contexts. Future research should involve larger cohorts to allow

systematic comparison of outcomes and measure the influences of AI interactions on writing performance through controlled designs to robustly evaluate effectiveness.

## **6. Future Directions**

This small-scale pilot study demonstrates how AI can be integrated into academic writing through structured and reflective design. It offers practical guidance for educators and exploratory directions for researchers seeking to build pedagogically grounded approaches to AI-assisted language and literacy learning.

For educators, the study highlights AI literacy development through task design. Structured prompts that require students to justify whether they adopt, adapt, or reject AI suggestions help transform assistance into reflection. By embedding these scaffolds within authentic, curriculum-linked tasks, teachers can cultivate students' critical awareness and ethical reasoning. These findings also point to the need for professional learning that enables educators to model responsible prompting and engagement with AI tools.

For researchers, the innovation offers a replicable methodological model for examining student-AI interaction. The use of AI-interaction logs and thematic coding demonstrates how process-level analysis can capture the dynamics of regulation, evaluation, and adaptation. Future research should extend this approach to explore the longitudinal development of AI literacy and test the scalability of different scaffold types across disciplines.

Effective integration of AI in language education requires both pedagogical intentionality and empirical grounding. When guided by structured design and reflective practice, AI can serve as a catalyst for ethical judgment, learner agency, and deeper engagement with academic discourse.

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### Author bio

**Dr Yeong-Ju Lee** obtained her PhD from the Department of Linguistics at Macquarie University. She teaches courses in Applied Linguistics, Language Education, and Literacy. Her research interests include digital language learning and teaching, focusing on digital literacy, multimodality, social media, digital games, and AI. She is the Chief Investigator of the Teaching Development Grant-funded project on AI and literacy at Australian Catholic University, and the Data Horizon Research Centre-funded project on AI and language learning at Macquarie University.

ORCID: 0000-0002-9251-6535

Email: yeong-ju.lee@acu.edu.au & yeong-ju.lee@mq.edu.au

**Prof Rauno Parrila** is a Professor and the Centre Director of Australian Centre for the Advancement of Literacy. His research focuses on psychological, linguistic, and social correlates of both typical and atypical development of reading and academic achievement. He has a keen interest in reading instruction and interventions, reading development and difficulties in different orthographies, and compensation of learning difficulties in both children and adults.

ORCID: 0000-0003-4250-8980

Email: rauno.parrila@acu.edu.au

**Dr Danielle Colenbrander** is a Lecturer in the Australian Centre for the Advancement of Literacy. She teaches undergraduate and postgraduate initial teacher education courses in language and literacy. Her research investigates word reading, spelling, and reading comprehension assessment and instruction, with a particular focus on the roles of vocabulary and morphology. With a keen interest in translating research into practice, she has worked closely with teachers and teaching assistants across Australia and the UK.

ORCID: 0000-0001-5577-7501

Email: danielle.colenbrander@acu.edu.au