

From Ghostwriter to Cognitive Partner: A Translanguaging Lens on Human-AI Interaction and the ACTS Model for EFL Academic Writing

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Abstract

This paper aims to introduce and theorize the ACTS (AI-assisted Collaborative Translanguaging Scaffolding) framework, which is proposed as a middle-range model for regulating human-AI collaboration in proposal writing within the context of English as a Foreign Language (EFL) in Vietnam. Vygotskian Sociocultural Theory, Cognitive Load Theory, and Translanguaging were applied as theoretical frameworks in the study. Based on these frameworks, generative AI is reconceptualized from an autonomous “ghostwriter” into a regulated socio-cognitive partner, which is reported to operate within a “Read-English, Think-Vietnamese, Write-Bilingually” cycle. To explore the plausibility of the proposed framework, illustrative, context-bound evidence from a two-phase Vietnamese pilot was reported, aiming to align with learner experiences rather than to offer full-scale empirical validation. In the first phase, a pre-training survey was administered to a baseline cohort of 112 EFL learners (comprising 71 undergraduates and 41 postgraduates). The analysis of these data indicates the establishment of quantitative and thematic profiles of AI-related anxiety across four competency dimensions, which reveals three convergent clusters: hallucination risk, plagiarism, and critical thinking erosion. Subsequently, the ACTS workflow was applied by a targeted intervention group of 24 postgraduate students to develop their thesis proposals. Findings derived from post-training reflections revealed that a positive psychological shift was reported by 95.8% of the participants. Additionally, an estimated 50% efficiency gain in proposal writing was identified, while a strong commitment to academic integrity was retained. The overall results suggest that these illustrative findings provide preliminary, context-specific support for the ACTS framework, which can be interpreted as a theoretically grounded response to the “Performance Paradox” in AI-mediated EFL academic writing. Based on the outcomes, it is expected that a set of propositions will be generated for future empirical testing in diverse contexts.

Keywords: translanguaging, human-AI interaction, performance paradox, ACTS model, EFL writing, Vietnam

1. Introduction

Generative AI tools such as ChatGPT and Gemini have rapidly entered higher education, particularly in English as a Foreign Language (EFL) academic writing, where they offer scaffolds for idea generation, language polishing, and genre awareness (Barrot, 2023; Crompton et al., 2024; Wang & Dang, 2024). While these tools can reduce writing anxiety and enhance surface-level fluency, they simultaneously destabilize established constructs of authorship, originality, and intellectual integrity (Kaurov & Oreskes, 2025). Recent work by Lodge and Loble (2026) captures this tension in what they term a “performance paradox”, noting that “unstructured AI use trends toward detrimental offloading, creating a performance paradox: students’ short-term performance on tasks improves, while their durable, long-term learning is harmed” (p. 7). Against this backdrop of enhanced performance but precarious learning, it becomes crucial to look beyond product-oriented evaluations and interrogate the underlying processes through which learners engage with AI in high-stakes academic writing.

Existing research on generative AI in L2 writing has focused on examining output quality, learner attitudes, and issues of plagiarism detection, with far less attention paid to the process architecture of human-AI interaction in complex academic tasks such as research proposal writing (Arifani et al., 2026; Cotton et al., 2024; Çiftci, 2025). At the same time, translanguaging research has documented learners’ spontaneous use of their first language (L1) as an epistemic and affective resource, yet these insights remain largely unintegrated into AI-mediated writing pedagogy (Li & Wang, 2024; Ngo Cong-Lem et al., 2026; Tan, 2024). What is missing is a process-based conceptual framework that explicitly

stages human-AI collaboration, differentiates beneficial from detrimental cognitive offloading, and leverages translanguaging as a metacognitive tool rather than treating it as a compensatory crutch.

In response to this gap, this theoretical paper proposes and theorizes the ACTS (AI-assisted Collaborative Translanguaging Scaffolding) framework as a middle-range model for regulating human-AI collaboration in EFL proposal writing. Grounded in Vygotskian Sociocultural Theory, Cognitive Load Theory, and translanguaging (García & Wei, 2014; Paas et al., 2003; Vygotsky, 1978), ACTS conceptualizes generative AI as a temporary socio-cognitive scaffold rather than an autonomous “ghostwriter”. The framework consists of a seven-step workflow that redistributes extraneous and germane cognitive load. The ACTS model positions AI as a “more knowledgeable other” within the learner’s Zone of Proximal Development, and deploys L1-based translanguaging as an epistemic filter to secure conceptual ownership (Lantolf & Poehner, 2014; Li & Wang, 2024; Salomon, 1997).

Although the primary contribution of this paper is conceptual, an empirical strand is included as illustrative, proof-of-concept evidence. Baseline survey data and post-training reflections from a Vietnamese higher education context are used to demonstrate how the ACTS framework aligns with learners’ anxiety profiles and perceived shifts in autonomy and ethical awareness, rather than to provide full-scale validation. To this end, the empirical strand of this theoretical paper is guided by the following illustrative research questions:

- 1) Illustrative Research Question 1: How does the ACTS framework reshape EFL learners’ experiences of AI-mediated proposal writing in terms of anxiety, perceived efficiency, and ethical understanding in a Vietnamese higher education context?
- 2) Illustrative Research Question 2: Which stages of the ACTS workflow demonstrate the strongest step-level resonance with learners’ concerns, and how does this reflect the model’s structured scaffolding?

2. Literature Review

This section provides a critical analysis of the theoretical and empirical foundations of the study. To do this, the section firstly reviews the integration of generative AI in EFL academic writing. Then, the mediating role of translanguaging, and current debates around AI-related academic integrity will be discussed.

2.1 AI in EFL Academic Writing

Generative AI tools have reshaped EFL academic writing by providing real-time feedback, reducing writing anxiety, and improving grammatical accuracy (Barrot, 2023; Crompton et al., 2024; Wang & Dang, 2024). At the same time, a growing body of research warns that unregulated AI use can foster over-reliance, undermine independent reasoning, and introduce ethical and epistemic risks, including plagiarism, hallucinated references, and unverified claims (Arifani et al., 2026; Hong et al., 2025; Kaurov & Oreskes, 2025). On the one hand, learners may be aware that submitting fully AI-generated assignments constitutes a serious violation of academic ethics. On the other hand, they often lack clear guidance on how to appropriately acknowledge AI assistance, differentiate acceptable support from misconduct, and navigate institutional expectations (Cotton et al., 2024; Çiftci, 2025; Hutson et al., 2024). This duality has been framed as a “performance paradox”: learners produce increasingly fluent texts while their metacognitive engagement and verification practices deteriorate (Lodge & Loble, 2026).

Empirical studies in diverse L2 contexts have documented phenomena such as “metacognitive laziness” and cognitive offloading. It was reported that learners bypass the productive struggle required for deep learning by passively accepting AI-generated outputs (Fan et al., 2024; Risko & Gilbert, 2016). Policy documents and position papers increasingly call for a shift from product-focused evaluation towards process-oriented AI literacy that makes students’ use of AI transparent and accountable (Ng et al., 2021; UNESCO, 2026). Yet few pedagogical models translate these principles into concrete, step-by-step workflows that operationalize human-in-the-loop oversight and ethical fluency. To address such an issue, Barrot (2023) recommended:

Rather than outright banning ChatGPT, teachers can explore ways to work alongside these AI-based tools and capitalize on their potential. One strategy to mitigate the potential issues of using ChatGPT is for teachers to emphasize the value of the writing process. (Barrot 2023, p. 4)

These findings suggest that the problem is not AI per se, but the absence of structured pedagogical frameworks to guide when, how, and to what extent learners should collaborate with AI in demanding academic tasks. The ACTS framework directly responds to this gap by treating AI not as a monolithic tool but as a staged scaffold embedded within a process model.

2.2 The Translanguaging Turn

Translanguaging scholarship rejects the notion of autonomous language systems and instead conceptualizes multilinguals as drawing on a unitary semiotic repertoire to construct meaning across named languages (Canagarajah,

2011; García & Wei, 2014; Otheguy et al., 2015). Within L2 academic writing, this perspective has re-positioned the first language (L1) from a remedial crutch to a core psychological tool for planning, monitoring, and regulating complex literacy tasks (Li & Wang, 2024; Tan, 2024). Empirical studies show that learners strategically shift between L1 and the target language to generate ideas, rehearse arguments, and check their understanding, thereby reducing extraneous cognitive load and supporting deeper conceptual engagement (Chau et al., 2022; Tai & Wei, 2025).

The advent of generative AI has created new translanguaging spaces in which learners not only switch languages within their written texts, but also across the prompts and evaluations they direct to AI tools. Recent work has introduced the notion of “transprompting” to describe how multilingual learners mobilize their full linguistic repertoires when formulating, refining, and critiquing AI prompts (Ngo Cong-Lem et al., 2026). Vietnamese EFL learners, for example, report drafting prompts in Vietnamese to clarify their thinking before translating them into English. Then, learners revert AI outputs to Vietnamese to diagnose misalignments. These findings highlight translanguaging as an epistemic and metacognitive resource in AI-mediated writing. However, they have yet to be systematically integrated into a structured framework for academic tasks such as proposal writing.

2.3 Theoretical Foundations

The ACTS model is grounded in three complementary theoretical foundations Sociocultural Theory, Cognitive Load Theory, and translanguaging. Sociocultural Theory provides the relational framework for conceptualizing AI as a potential “more knowledgeable other” within the learner’s Zone of Proximal Development. Cognitive Load Theory supplies the cognitive structure for distributing intrinsic, extraneous, and germane load across AI- and human-dominant stages. Translanguaging offers the epistemic framework by positioning the learner’s L1 as a metacognitive tool for diagnosing understanding and asserting conceptual ownership in a multilingual, AI-mediated environment.

2.3.1 Sociocultural Theory and Scaffolding

Rooted in Vygotsky’s (1978) Sociocultural Theory, the Zone of Proximal Development (ZPD) describes the distance between what a learner can accomplish independently and what they can achieve with guidance from a more knowledgeable other (MKO). Within this framework, learning is mediated by tools, signs, and social interaction; scaffolding is provided through graduated assistance that is eventually withdrawn as the learner internalizes new forms of regulation (Lantolf & Poehner, 2014). Recent work on distributed cognition further emphasizes that cognitive processes are not confined to the individual mind, but distributed across people, artifacts, and environments (Salomon, 1997).

When generative AI is introduced into this sociocultural landscape, it can function as a powerful MKO, providing immediate feedback, exemplars, and suggestions that extend the learner’s performance beyond their current independent capabilities (Crompton et al., 2024). However, without deliberate design, AI may also bypass the graduated scaffolding that characterizes Vygotskian praxis, effectively replacing rather than mediating human agency. The ACTS framework adopts sociocultural theory by positioning AI as a temporary socio-cognitive teammate whose contributions are tightly regulated through staged interactions and mandatory re-engagement phases. By requiring learners to reverse engineer AI outputs and independently author final texts, ACTS reinstates the Vygotskian principle that scaffolds must ultimately be dismantled for genuine internalization to occur.

2.3.2 Cognitive Load Theory and Cognitive Offloading

Cognitive Load Theory (CLT) provides a complementary perspective for understanding how AI-mediated tasks impact learning efficiency and quality (Paas et al., 2003; Sweller, 2010). CLT distinguishes between intrinsic load (inherent task complexity), extraneous load (inefficient instructional design), and germane load (resources devoted to schema construction). In the context of AI-assisted writing, “cognitive offloading”, the delegation of cognitive operations to external tools, plays a central role (Risko & Gilbert, 2016). When carefully designed, offloading lower-order tasks such as surface-level error correction or mechanical summarization can reduce extraneous load and free working memory for higher-order reasoning (Hong et al., 2025).

However, studies also document “detrimental offloading” and “metacognitive laziness”, whereby learners rely on AI to generate ideas, structure arguments, and formulate claims. This bypasses the very cognitive processes that academic writing is intended to cultivate (Fan et al., 2024; Kumar & Kakepoto, 2025). The ACTS framework explicitly addresses this risk by mapping AI involvement onto specific stages of the proposal-writing process. In the early steps, AI is leveraged to handle tasks that primarily contribute to extraneous load, such as initial outline generation and literature mapping. In later steps, learners are required to re-engage deeply with content through reverse engineering, translanguaging-based reflection, and authentic authoring. This procedure enables learners to reallocating cognitive resources toward germane load. Therefore, such a staged design seeks to cultivate beneficial offloading while structurally constraining detrimental offloading.

2.4 Translanguaging as Epistemic Regulation

Translanguaging theory foregrounds multilinguals' ability to flexibly mobilize their entire linguistic repertoires to make meaning, rather than confining them to rigid, named-language boundaries (Canagarajah, 2011; García & Wei, 2014; Otheguy et al., 2015). In L2 academic writing, translanguaging has been shown to support idea generation, self-regulation, and critical reflection by allowing learners to think, plan, and monitor their work in their L1 while producing texts in the L2 (Li & Wang, 2024; Tan, 2024). It was also found that navigating source-based writing in multiple languages imposes high multitasking demands (Chau et al., 2022). This indicates that strategic cross-linguistic practices are an important means of managing cognitive load in academic writing, especially for EFL writing students.

In AI-mediated environments, translanguaging extends beyond the written text to encompass the prompts and evaluations that learners direct to AI systems. When EFL learners use both their L1 and target language to interact with AI chatbot, such as planning and refining prompts, diagnosing misunderstandings in AI outputs, and verifying conceptual alignment, researchers name it as “transprompting” (Ngo Cong-Lem et al., 2026). In the present study, the ACTS framework operationalizes this intuitive practice by embedding a “Read-English, Think-Vietnamese, Write-Bilingually” cycle into the workflow. This means the use of L1 (i.e., Vietnamese) is treated not as a fallback for linguistic deficiency, but as an epistemic regulation mechanism that helps learners distinguish genuine understanding from superficial reproduction of AI-generated language.

To date, while the foundational CHAT-ACTS model has been recognized for integrating personalized chatbots to coordinate active and self-regulated learning (Lin & Chang, 2023), few frameworks have been tailored specifically to address the complexities of EFL proposal writing. This represents a major shortcoming in current literature. Accordingly, the present study seeks to address this gap by proposing a reconceptualized ACTS (AI-assisted Collaborative Translanguaging Scaffolding) framework, which is particularly tailored for Vietnamese EFL learners of academic writing.

3. The ACTS Framework

Building on the above-mentioned theoretical foundations, the ACTS framework is articulated as a middle-range model that integrates Sociocultural Theory, Cognitive Load Theory, and translanguaging into a coherent process for AI-mediated EFL proposal writing. Rather than presenting AI use as a binary choice between prohibition and unrestricted adoption, ACTS specifies when, how, and for what purposes learners should collaborate with AI, and when they must reclaim full authorship. The framework is operationalized through a seven-step procedure. Figure 1 provides a conceptual overview of the ACTS showing how specific stages are aligned with distinct AI-related concerns and learner outcomes.

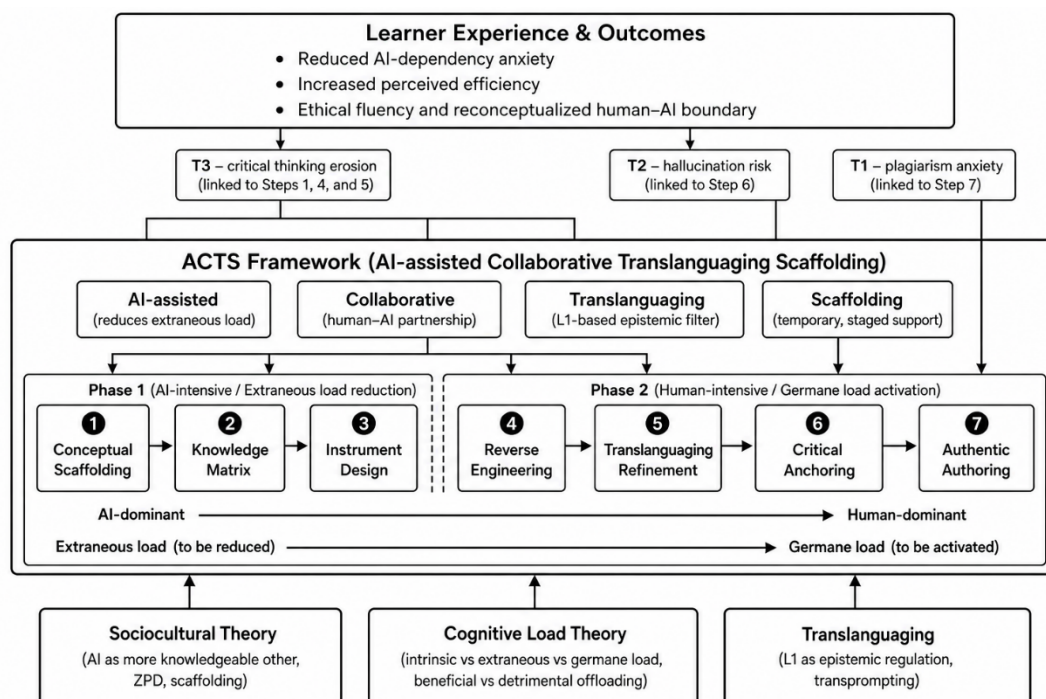


Figure 1. The ACTS framework as a middle-range conceptual model for AI-mediated EFL proposal writing

3.1 Four Key Components of ACTS

Building on the theoretical foundations outlined above, the ACTS framework is organized around four key components including AI-assisted, Collaborative, Translanguaging, and Scaffolding. These components jointly regulate human-AI collaboration in proposal writing.

For first dimension, AI-assisted, recognizes the computational strengths of generative AI in processing large amounts of textual information, synthesizing literature, and generating preliminary outlines. Within the ACTS framework, AI assistance is deliberately constrained to tasks that primarily contribute to extraneous cognitive load, such as initial topic exploration, keyword expansion, and skeletal structuring of research questions and sections. By delegating these tasks to AI under human supervision, learners can allocate more of their limited working memory to higher-order reasoning and disciplinary argumentation (Hong et al., 2025; Paas et al., 2003).

The second key element, Collaborative, reframes human-AI interaction as a form of intellectual partnership rather than a unilateral tool-user dynamic. ACTS positions the learner as the principal decision maker for the research proposal, with AI serving as a temporary consultant whose outputs must be negotiated, critiqued, and, where necessary, rejected. This aligns with sociocultural views of mediated action, emphasizing that tools acquire meaning and value only within human-directed activity (Lantolf & Poehner, 2014; Salomon, 1997).

The third key component, Translanguaging, foregrounds the learner's L1 as a critical epistemic filter throughout the workflow. Rather than imposing a monolingual English-only norm, ACTS encourages learners to read complex methodological texts in English, think through their implications in Vietnamese. Then, learners write bilingually at key checkpoints to test their understanding. This practice is consistent with empirical findings that translanguaging supports self-regulation and deep processing in L2 writing (Li & Wang, 2024; Ngo Cong-Lem et al., 2026; Tan, 2024).

The fourth key dimension, Scaffolding, emphasizes the temporal and provisional nature of AI support. In keeping with Vygotskian principles, AI scaffolds are introduced in a graduated manner and systematically withdrawn as learners gain confidence and competence. The seven-step procedure is designed so that initial steps build a scaffolded "blueprint" with AI assistance, while later steps require learners to dismantle that scaffold, verify sources, and independently author the final proposal. This ensures that AI remains a means to an end, human intellectual autonomy, rather than an end in itself.

3.2 The Seven-Step Workflow

The ACTS workflow translates the four key components above into a sequential continuum of seven steps that guide learners from initial idea generation to authentic proposal authorship. The first phase (Steps 1-3) is AI-intensive and focuses on reducing extraneous cognitive load by leveraging AI for conceptual scaffolding, literature mapping, and preliminary instrument design. The second phase (Steps 4-7) is human-intensive and centers on activating germane load through critical evaluation, translanguaging-based reflection, and independent writing. Figure 2 visualizes this trajectory from AI-assisted blueprinting to human-authored proposals.

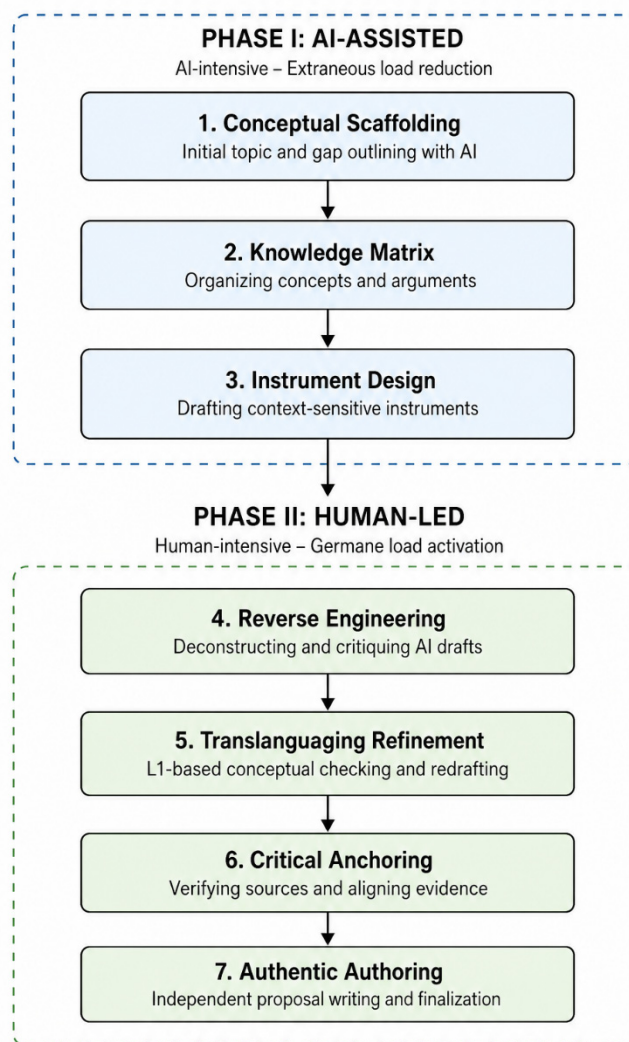


Figure 2. The 7-step ACTS (AI-assisted Collaborative Translanguaging Scaffolding) workflow for EFL academic proposal writing

As can be seen, Step 1 - Conceptual Scaffolding involves using AI to brainstorm potential topics, refining research questions, and generating an outline skeleton for the proposal. Step 2 - Knowledge Matrix engages AI in organizing key concepts, variables, and theoretical constructs into a structured matrix that highlights relationships and gaps. Step 3 - Instrument Design uses AI to suggest possible data collection instruments and procedures, which learners then critically adapt to their context. Step 4 - Reverse Engineering marks the beginning of the human-dominant phase. Learners are required to deconstruct AI-generated drafts, identify logical leaps, unsupported claims, and contextually inappropriate elements. Step 5 - Translanguaging Refinement prompts learners to restate key methodological and theoretical rationales in their L1, thereby testing whether they genuinely understand the underlying concepts. Step 6 - Critical Anchoring focuses on verifying AI-suggested sources, cross-checking references, and aligning the proposal with authentic, citable literature. Finally, Step 7 - Authentic Authoring requires learners to produce the final proposal in their own words, using AI only for minor language-level support if at all.

3.3 Theoretical Propositions

As a middle-range framework, ACTS generates a set of theoretically grounded propositions about human-AI collaboration in EFL proposal writing. Rather than serving as hypotheses to be exhaustively tested in a single study, these propositions delineate an agenda for future empirical work and provide a theoretical basis through which the illustrative evidence in Section 4 can be interpreted. As a coherent set, they specify how AI offloading, translanguaging, workflow structuring, and process transparency are expected to interact in shaping learners' cognitive, affective, and ethical trajectories.

ACTS thus advances four interrelated propositions. First, P1 (AI offloading and extraneous load) posits that when AI-mediated tasks are constrained to early-stage conceptual scaffolding (Steps 1-3), generative AI primarily reduces extraneous cognitive load, thereby preserving learners' germane resources for higher-order analytical work in later

stages (Hong et al., 2025; Paas et al., 2003). Second, P2 (translanguaging as epistemic regulation) suggests that translanguaging-based epistemic regulation (Step 5) functions as a diagnostic filter that distinguishes genuine conceptual mastery from superficial reproduction, particularly in AI-mediated proposal writing (Li & Wang, 2024; Ngo Cong-Lem et al., 2026). Third, P3 (structured workflow and AI-related concerns) proposes that a structured workflow explicitly mapping AI-assisted stages to verification and authoring stages (Steps 4-7) is more effective in mitigating AI-dependency anxiety than unstructured AI use, because it aligns specific steps with distinct clusters (plagiarism, hallucination risk, critical thinking erosion) documented in the baseline data. Finally, P4 (ethical fluency and process transparency) advances the claim that ethical fluency in AI-integrated EFL writing is most likely to emerge when process transparency. This proposition is operationalized through Reverse Engineering and Authentic Authoring. The framework treats these stages as non-negotiable requirements rather than optional choices, thereby aligning with recent calls for process-oriented AI literacy in higher education (Cotton et al., 2024; Hutson et al., 2024; UNESCO, 2026).

4. Illustrative Evidence from a Vietnamese Pilot

This section presents illustrative, context-bound evidence from a two-phase pilot study in the Vietnamese higher education EFL context. The purpose of this empirical strand is not to provide definitive causal claims, but to show how the ACTS framework resonates with learners' reported anxieties, perceived efficiency gains, and evolving understandings of ethical human-AI collaboration.

4.1 Baseline Anxiety Profiles and ACTS Design

The baseline phase involved a cohort of 112 EFL learners (*Baseline N* = 112), drawn from two distinct academic levels: 71 undergraduate students majoring in English Language Studies enrolled in a source-based academic writing course, and 41 postgraduate students enrolled in an MA TESOL research methodology program. This multi-level design was deliberate; it enabled the study to examine whether AI-related anxieties are level-specific or structurally embedded across Vietnamese EFL academic writing contexts. All participants had prior exposure to GenAI tools (primarily ChatGPT and Gemini) but had not received formal instruction on AI-integrated framework for academic writing.

Table 1. Participant Overview

Group	Level	<i>n</i>	Course Context	Instrument
UG Baseline	Undergraduate (English majors)	71	Source-based Academic Writing	Pre-training survey
Grad Baseline	Postgraduate (MA TESOL)	41	Research Methodology	Pre-training survey
Total Baseline		112		
Grad Intervention	Postgraduate (MA TESOL)	24	ACTS Training Session	Post-training reflection

Following the baseline survey, a pilot intervention group of 24 postgraduate students (*Pilot N* = 24) was purposively selected from the graduate cohort to participate in a structured training session. During this session, participants systematically applied the 7-step ACTS procedure to conceptualize and draft actual sections of their thesis proposals. Three of these participants submitted their post-training reflections after the initial manuscript submission deadline; the present version reports the complete dataset (*N* = 24) for analytical completeness. The purposive selection of postgraduate students for the intervention phase reflects the immediate practical relevance of the training to their current academic obligations, ensuring ecological validity in the data.

As mentioned, the baseline survey assessed four dimensions of AI-related competence: distinguishing text-generative AI from academic search AI, constructing complex prompts, verifying source authenticity, and detecting hallucinations. Mean scores across the four AI-competence dimensions ranged from 3.42 to 3.85 on a 5-point Likert scale, indicating moderate confidence for both undergraduates and postgraduates, with slightly higher self-ratings among the graduate group (see Table 2).

Table 2. Pre-Training AI Competency Self-Assessment: Descriptive Statistics (*N* = 112)

Dimension	Description	UG (<i>n</i> = 71) Mean	Grad (<i>n</i> = 41) Mean	Note
AI competence 1	Distinguishing text-generative vs academic search AI	3.69	3.85	Overall M range: 3.42–3.85
AI competence 2	Constructing complex prompts	3.59	3.76	
AI competence 3	Verifying source authenticity (author, DOI, journal)	3.42	3.46	
AI competence 4	Detecting hallucinations	3.51	3.59	

More revealing, however, were the thematic clusters that emerged from open-ended responses about learners' greatest concerns when using AI in academic writing. Thematic analysis identified three convergent clusters: plagiarism (T1), hallucination risk (T2), and critical thinking erosion (T3), with total frequencies of 42, 64, and 48 respectively across both groups (see Table 3). These AI-related concerns appeared in both the undergraduate and postgraduate cohorts, suggesting that AI-dependency anxiety is structurally produced by unguided AI integration rather than confined to less experienced learners. This cross-level convergence supports the ACTS framework's design imperatives: T1 motivates the emphasis on Authentic Authoring (Step 7), T2 motivates the Critical Anchoring of sources (Step 6), and T3 motivates the Translanguaging Refinement and Reverse Engineering stages (Steps 1, 4, and 5).

Table 3. Baseline AI-Dependency Anxiety Clusters and Corresponding ACTS Steps

ClusterLabel	Description	Grad (MA TESOL) n	UG (English majors) n	Total n	ACTS step(s) primarily addressing cluster
T1	Plagiarism	Fear AI text will be flagged or genuine writing mislabelled 13	29	42	Step 7 - Authentic Authoring
T2	Hallucination risk	Fear of fabricated references and inaccurate information 22	42	64	Step 6 - Critical Anchoring
T3	Critical thinking erosion	Fear of over-reliance and loss of independent reasoning 19	29	48	Steps 1, 4, 5 - Scaffolding & Translanguaging

Illustrative comments from both cohorts further clarify the three clusters. For plagiarism (T1, n = 42), learners worried that “sometimes I write it myself, but the system still flags it as AI-generated” and feared “submitting a draft with a high plagiarism rate even when [they had] genuinely tried to write independently.” For hallucination risk (T2, n = 64), they expressed concern that “AI will lead the entire paper in the wrong direction from the very beginning” and that AI-generated responses “often deviate from the actual content of the source material.” Critical thinking erosion and dependency (T3, n = 48) were captured in comments such as “I am afraid I will abuse it blindly and eventually become completely dependent on AI” and that over-reliance on AI “easily leads to the loss of critical thinking or at least makes it less sharp. Taken together, these comments highlight learners’ simultaneous reliance on and distrust of AI, underscoring the need for a structured framework like ACTS that can channel AI use while safeguarding critical thinking and academic integrity.

4.2 Post-Training Psychological Shift and Perceived Efficiency

Following a single ACTS training session, the intervention group (n = 24) completed a quick reflection survey. In response to the direct question, “Before training, you shared your fear of [plagiarism / misinformation / losing your thinking]. How do you feel about that now?”, responses were distributed as follows (see Table 4).

Table 4. Post-Training psychological shift (n = 24)

Affective State	n	%
“More at ease”	19	79.1%
“Fully confident”	4	16.7%
“Still anxious”	1	4.2%

These self-reported shifts suggest that even a single, tightly structured ACTS session can substantially reduce AI-related concerns for most participants, with only one learner indicating that they remained anxious. Specifically, 95.8% of participants reported a positive affective shift following a single structured session. While the small, purposive sample precludes generalization, this proportion signals that structured procedural scaffolding has the potential to produce rapid and meaningful reductions in AI-dependency anxiety, a precondition for productive human-AI collaboration. The single participant who reported continued apprehension subsequently cited methodological uncertainty, specifically difficulty executing Steps 3 through 6 of the workflow without additional instructor support, as the persisting source of difficulty. This finding suggests that the framework’s more advanced critical analysis stages may require differentiated instructional scaffolding for some learners.

Following this, qualitative reflections shed light on how participants experienced this psychological shift in practice. Many described AI as providing “ingredients” or a rough “draft” while insisting that they themselves had to “knead,” “season,” and “bake” the final “cake,” positioning AI as a starting point rather than a ghostwriter. Others framed the division of labour more explicitly as “AI starts, human finishes,” emphasizing that the real learning happens when they reorganize, translate, and rewrite AI outputs in their own words.

These metaphors resonate closely with the ACTS pillars of Collaboration and Scaffolding, suggesting that learners internalized the idea of AI as a temporary socio-cognitive partner whose contributions must be critically shaped and ultimately transcended. They also reinforce the Translanguaging and Critical Anchoring stages: learners reported that moving back and forth between English and Vietnamese, and checking sources themselves, was precisely what prevented them from “just copying what AI says” and helped them reclaim intellectual ownership of their proposals.

“AI helps me prepare the ingredients and shows me how to make a cake. In the end, it is I who knead, season, decorate, and bake it.” - Postgraduate student (Lan, pseudonym)

“It represents a cycle of circularity. When AI handles the technical tasks, humans add the details that AI simply cannot.” - Postgraduate student (Nam, pseudonym)

“AI is a trustworthy supporter that helps reduce stress when we hit a wall, but what we produce ourselves is always the best.” - Postgraduate student (Ngoc, pseudonym)

“AI ends at creating the draft; the teacher begins by creating a real learning experience.” - Postgraduate student (Mai, pseudonym)

These metaphors converge on a single insight: participants no longer positioned AI as an autonomous ghostwriter but as a bounded cognitive partner. This reconceptualization aligns with Ng et al.'s (2021) distinction between AI literacy and genuine ethical fluency, a transition the ACTS framework is specifically designed to catalyze.

Aggregating across responses, the dominant pattern is a perceived efficiency gain of approximately 50%, with the most common pre-ACTS estimates falling in the 1-2-month range and the most common post-ACTS projections roughly halving that timeline (Table 5). One participant described an extreme case: "Without the model, I needed about three months before I felt confident enough to submit; with the model, I expect to finish in one month" (postgraduate student, pseudonym "Nga"), representing an individual saving of approximately 60%.

Table 5. Self-Reported Time Estimates Before and After ACTS Training (n = 24)

Dimension	Representative responses	Overall pattern
Estimated time without ACTS	"Three months"; "1-2 months"; "more than 3 weeks"; "I would not feel confident for a very long time"	Approx. 2 weeks-3+ months; most commonly 1-2 months
Estimated time with ACTS / saved	"50% of the time"; "2-3 weeks"; "saved 60%"; "from three months to one month"	Majority report $\approx$ 50% reduction; one case $\approx$ 60% gain

These figures, however, are prospective self-estimates rather than objective time-on-task measures, a limitation that is acknowledged in Section 6. Although subjective and approximate, these self-reported reductions are theoretically consistent with the CLT-inspired design of ACTS, which reallocates effort from extraneous load in the early stages to germane processing in later stages.

4.3 Step-Level Resonance and Anxiety Mitigation

To identify which elements of the workflow learners found most impactful, the post-training survey asked participants to select the single ACTS step they experienced as most "pressure-relieving". Responses clustered around four steps: Step 1 (Conceptual Scaffolding), Step 5 (Translanguaging Refinement), Step 6 (Critical Anchoring), and Step 7 (Authentic Authoring). Step 1 was most frequently selected, reflecting the acute need for structural clarity at the ideation stage; learners reported that having a skeleton outline reduced their fear of "getting lost". Step 6 was second most frequent and was often linked explicitly to reduced concerns about hallucination, as participants felt reassured by verifying that AI-suggested references were real rather than fabricated.

This pattern is particularly noteworthy when juxtaposed with the baseline data. T2 (hallucination risk) was the most prevalent pre-training concern, and Step 6 (Critical Anchoring) was among the most frequently cited pressure-relieving steps. The alignment between the anxiety cluster most frequently reported at baseline and the step most trusted to address it provides strong illustrative support for Proposition 3: a structured workflow that maps specific stages onto distinct AI-related apprehension is more likely to mitigate AI-dependency issue than unstructured AI use. Rather than relying on generic assurances about "being careful" with AI, ACTS embeds these assurances into mandatory, named steps.

4.4 Ethical Reconceptualization and Human-AI Boundaries

Beyond efficiency and apprehension, the pilot also illuminated shifts in learners' ethical reasoning about AI use. Pre-training data indicated that over nine in ten participants viewed fully AI-generated academic content as either ethically problematic or acceptable only with substantial human revision, yet many lacked clarity on how to put this stance into practice. Post-training reflections suggest that the ACTS framework helped participants move from a vague sense that "AI-only writing is wrong" toward a more nuanced understanding of legitimate human-AI collaboration.

Learners' metaphors frequently distinguished between AI's role in "starting" or "preparing" a draft and the human role in "finishing" or "creating a real learning experience". Some explicitly noted that, although AI could be highly capable, it lacked emotions and contextual insight, implying that humans must "invest feelings" and ethical judgment into the work. These reflections resonate with Cotton et al.'s (2024) call for ethical fluency that goes beyond rule compliance to encompass a deeper reconceptualization of the human-AI boundary. They also provide illustrative support for Proposition 4 by showing how process transparency, especially through Reverse Engineering and Authentic Authoring, can anchor ethical reasoning in concrete practices rather than abstract guidelines.

5. Discussion and Conclusion

5.1 Theoretical Implications of the ACTS Framework

The illustrative findings from this Vietnamese pilot converge on a central argument: structured procedural scaffolding, rather than prohibition or unguided adoption, is the decisive variable in determining whether generative AI functions as an intellectual amplifier or a dependency trap in EFL academic writing. By integrating Sociocultural Theory, Cognitive Load Theory, and translanguaging into a single process model, the ACTS framework offers a theoretically coherent response to the performance paradox documented in recent studies (Fan et al., 2024; Lodge & Loble, 2026). The baseline anxiety profiles and step-level resonance data provide preliminary support for the framework's diagnostic

validity: the very anxieties learners report most frequently, plagiarism, hallucination risk, and critical thinking erosion, are precisely those targeted by the model's core stages.

ACTS also contributes to translanguaging theory by reconceptualizing L1 use not merely as a compensatory strategy, but as an epistemic regulation mechanism within human-AI collaboration. The "Read-English, Think-Vietnamese, Write-Bilingually" cycle institutionalizes what Ngo Cong-Lem et al. (2026) describe as transprompting, embedding it into a structured workflow that maximizes its cognitive and affective benefits. In doing so, ACTS helps bridge the gap identified in Vietnamese EFL academic writing and in L2 writing more generally, where translanguaging is widely observed in learner practice but rarely embedded in formal writing pedagogy.

From a CLT perspective, the framework illustrates how beneficial cognitive offloading can be scaffolded while constraining detrimental offloading. By assigning AI-intensive tasks to early stages and requiring human-intensive tasks at later stages, ACTS operationalizes the distinction between extraneous and germane load in a way that is directly actionable for practitioners (Paas et al., 2003; Sweller, 2010). This process-based articulation complements existing calls for AI literacy by showing concretely how instructional design can be aligned with cognitive principles, rather than leaving learners to negotiate AI use idiosyncratically.

5.2 Limitations and Directions for Future Research

As a theoretical paper with an illustrative empirical strand, this study carries several limitations that qualify the interpretation of its findings. First, the pilot was conducted in a single Vietnamese higher education institution with a small, purposively sampled intervention group ($n = 24$), which restricts the generalizability of the post-training evidence. While the larger baseline cohort ($N = 112$) offers a broader view of AI-related anxieties in this context, cross-cultural and cross-institutional validation of the ACTS framework remains an open task.

Second, both the baseline data and post-training reflections rely on self-report measures, which are susceptible to social desirability bias and retrospective distortion. Learners may have underreported ethically problematic behaviors or overestimated their efficiency gains and shifts in confidence. Future studies should triangulate self-report data with objective indicators such as time-on-task logs, version histories, and AI interaction records. Third, the ACTS training was delivered in a single session, and the durability of observed psychological and behavioral shifts over time remains unknown. Longitudinal action research designs that track learners over multiple writing tasks and courses would provide a more robust basis for evaluating the framework's long-term impact. Additionally, future research could experimentally test the four propositions articulated in Section 3.3 across different disciplines, educational levels, and linguistic contexts to further refine and, where necessary, revise the model.

In sum, the ACTS framework was proposed in this paper as a middle-range model for regulating human-AI collaboration in EFL proposal writing. By integrating Sociocultural Theory, Cognitive Load Theory, and translanguaging into a staged workflow, the framework reconceptualizes generative AI from an autonomous ghostwriter into a temporary socio-cognitive scaffold. The illustrative evidence from a Vietnamese pilot suggests that ACTS can help learners move from AI-dependency concern toward greater intellectual autonomy, while fostering ethical fluency and more efficient use of AI in academic writing. Ultimately, the value of ACTS lies not only in its specific steps, but in its broader pedagogical stance: AI is treated as a powerful but limited partner whose contributions must be designed, monitored, and eventually transcended. By making human-AI processes visible and assessable, the framework provides a concrete basis for instructors, institutions, and policymakers seeking to move beyond binary discourses of banning or embracing AI. Future empirical work will be needed to test and refine the model across diverse contexts, but the present conceptualization offers a starting point for reimagining EFL academic writing in the age of generative AI.

Declaration of AI Use

Generative AI tools including NotebookLM, Perplexity, Gemini, and Canva's AI image generator were used to support language editing and to generate draft versions of the conceptual figures included in this article. All AI-generated text and visuals were critically reviewed, edited, and, where necessary, redrawn by the authors, who take full responsibility for the accuracy, originality, and scholarly integrity of the final manuscript.

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Author contributions

Ms. Tuyet-Nhung Thi Nguyen was responsible for conceptualization, overall drafting, writing the literature review, methodology design, data coding and interpretation, as well as writing the findings and discussion and conducting revisions and editing. Assoc. Prof. Dr. Ngoc-Tai Huynh contributed by writing the introduction and conclusion,

participating in data coding and interpretation, and proofreading and editing the manuscript. All authors read and approved the final manuscript.

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The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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