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From L1 Thinking to L2 Text: Exploring AI-Mediated Translanguaging in University EFL Writing Tasks

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Abstract: The increasing availability of artificial intelligence (AI) tools has reshaped how university students engage in academic writing, particularly in English as a Foreign Language (EFL) context where multilingual resources play a central role. This qualitative study explores how EFL students use AI tools to mediate translanguaging practices during academic writing tasks and how they interpret AI's role in moving from L1-based thinking to L2 written production. Drawing on think-aloud protocols, reflective writing journals, writing artifacts, and semi-structured interviews, the study examines writing as a process-oriented and mediated activity. The findings show that students strategically employ AI to externalize ideas, negotiate meaning, and refine language while maintaining agency and authorship through critical evaluation and revision of AI-generated text. AI tools were perceived not only as linguistic support but also as cognitive and emotional scaffolding that reduced writing anxiety and facilitated engagement with complex academic tasks. By foregrounding students' practices and interpretations, this study contributes to growing discussions on AI, translanguaging, and writing pedagogy, highlighting the need for process-oriented and reflective approaches to AI use in EFL writing instruction.

Keywords: artificial intelligence, EFL writing, qualitative research, translanguaging, university students

INTRODUCTION

The increasing availability of artificial intelligence (AI) tools has profoundly reshaped how university students engage with academic writing in English as a Foreign Language (EFL) context. Writing in a second or foreign language has long been recognized as a cognitively demanding activity (Haake, 2025), requiring learners to generate ideas, organize arguments, and encode meaning using linguistic resources that may not yet be fully developed. For many EFL students, this process is inherently multilingual, as ideas are often first conceptualized in the first language (L1) before being transformed into

second language (L2) text (Bollegala Arachchige, 2025). With the emergence of AI-powered tools such as machine translation, paraphrasing systems, and generative text assistants, this movement between languages is no longer solely internal or manual, but increasingly mediated by digital technologies.

Traditionally, pedagogical and assessment discourses in EFL writing have emphasized monolingual norms, often positioning L1 use as an obstacle rather than a resource. Students have frequently been encouraged to "think in English" and minimize reliance on their L1 during writing tasks (Arochman et al., 2024). However, growing research in applied linguistics challenges this view by foregrounding translanguaging as a natural and productive aspect of multilingual meaning-making (Choi, 2024; Lu & Tian, 2025; Urzúa, 2025). Translanguaging perspectives view learners' full linguistic repertoires as dynamic, flexible resources that can be strategically mobilized to support comprehension, idea generation, and textual production (Hou et al., 2025; Norro, 2024). Within this framework, the movement from L1 thinking to L2 writing is not a deficiency, but a legitimate and often necessary pathway in academic writing development.

The integration of AI tools introduces a new dimension to translanguaging practices in EFL writing. AI-powered translation and paraphrasing tools allow students to externalize and manipulate their L1 ideas, transforming them into L2 text through iterative cycles of drafting, reformulation, and revision (Aleedy et al., 2025; Malik et al., 2023; Qassrawi & Al Karasneh, 2025). Unlike traditional dictionaries or grammar checkers, AI systems can generate extended stretches of text, suggest alternative phrasings, and provide real-time feedback on language use. As a result, AI tools may function as mediational thing that reshape how students plan, compose, and refine their writing (Black & Tomlinson, 2025; Kim et al., 2025). This raises important questions about how translanguaging unfolds in AI-mediated writing processes and how students experience and interpret these practices.

Recent scholarship on AI in language education has largely focused on issues of effectiveness, accuracy, or ethical concerns such as plagiarism and academic integrity (Chen & Gong, 2025; Erdem Coşgun, 2025; Kovari, 2025). While these concerns are valid, they often overlook the lived experiences of learners and the nuanced ways in which AI tools are embedded in everyday writing practices. In particular, there remains limited qualitative research examining how students themselves use AI to navigate the transition from L1-based thinking to L2 textual production during authentic academic writing tasks. Understanding these processes requires moving beyond product-oriented evaluations to examine writing as a situated, recursive, and socially mediated activity.

From a sociocultural perspective, writing is not merely an individual cognitive act but a mediated process shaped by tools, languages, and social norms. AI tools can be conceptualized as mediational means that interact with learners' linguistic repertoires and prior knowledge (Cui et al., 2025; Ou et al., 2024). When students engage in AI-mediated translanguaging, they do not simply transfer meaning from one language to another. Instead, they negotiate meaning, evaluate linguistic options, and make decisions about voice, accuracy, and appropriateness. These interactions may influence how students develop confidence, agency, and awareness in L2 writing (Biju et al., 2024; Huang et al., 2024; Zare et al., 2025), as well as how they perceive the boundaries between assistance and authorship.

Despite the growing visibility of AI tools in academic settings, empirical research on their role in translanguaging during EFL writing remains underdeveloped. Existing studies on translanguaging in writing have primarily examined classroom talk, peer collaboration, or manual translation practices (Aldafas, 2025; Rowe, 2025; Tang et al., 2024). Similarly, research on AI-assisted writing often treats language as a monolithic system, without attending to the multilingual trajectories of idea development (Crompton et al., 2024; Kalantzis & Cope, 2025; Kuteeva & Andersson, 2024; Link et al., 2024). This creates a gap in the literature at the intersection of AI, translanguaging, and writing-as-process, particularly from the perspective of students' own practices and interpretations.

Addressing this gap is especially important in higher education contexts, where academic writing plays a central role in assessment and knowledge construction. University EFL students are often expected to produce texts that conform to academic conventions in English, even as they rely on their L1 for conceptual clarity and critical thinking. AI tools may offer new forms of support in this context, but they may also introduce tensions related to dependence, originality, and identity. How students navigate these tensions, and how they position AI within their writing processes, remain open questions that warrant in-depth qualitative investigation.

Therefore, this study aims to explore AI-mediated translanguaging in university EFL writing tasks, with a particular focus on the movement from L1 thinking to L2 text. Guided by a qualitative research design, the study examines students' writing practices and sense-making processes as they engage with AI tools during academic writing. Specifically, it addresses the following research questions: (1) How do university EFL students use AI tools to mediate translanguaging practices during academic writing tasks? and (2) How do students make sense of the role of AI in moving from L1-based thinking to L2 written production? By foregrounding students' voices and writing processes, this study seeks to contribute to a more nuanced understanding of AI as a mediational resource in multilingual writing.

The findings of this research are expected to offer several contributions. Theoretically, the study extends translanguaging scholarship by incorporating AI as an active mediational agent in writing processes. Methodologically, it demonstrates the value of qualitative, process-oriented approaches for examining AI use in language learning. Pedagogically, the study provides insights for educators seeking to respond constructively to students' AI-mediated writing practices, moving beyond simplistic notions of prohibition or acceptance. Ultimately, this research seeks to reframe AI-mediated translanguaging not as a problem to be managed, but as a complex and evolving practice that reflects the realities of contemporary EFL writing.

LITERATURE REVIEW

Analytical Lens

This study is grounded in an analytical lens that integrates translanguaging theory, writing-as-process perspectives, and sociocultural views of mediated learning, with particular attention to the role of AI as a mediational tool. Together, these frameworks provide a coherent foundation for understanding how university EFL students move from L1 thinking to L2 written production through AI-mediated practices.

Translanguaging theory offers a powerful lens for examining multilingual writers' meaning-making processes. Rather than viewing languages as separate and bounded systems, translanguaging conceptualizes learners' linguistic repertoires as dynamic, integrated, and fluid (León et al., 2024; Urzúa, 2025). From this perspective, students do not simply switch between L1 and L2, but strategically mobilize their full linguistic resources to construct meaning, solve problems, and express ideas (Lu & Tian, 2025; Moraru et al., 2025). In EFL writing contexts, this often involves generating ideas in the L1, evaluating concepts through familiar linguistic structures, and gradually reshaping them into L2 text. Translanguaging therefore reframes L1 use in writing not as interference, but as an essential cognitive and semiotic resource.

Applying a translanguaging lens to AI-assisted writing highlights how digital tools become part of students' multilingual repertoires. AI translation and paraphrasing tools enable learners to externalize translanguaging processes that might otherwise remain internal (Pavlova et al., 2024). For example, students can input L1 ideas, receive L2 outputs, compare alternatives, and iteratively refine meaning. This process foregrounds translanguaging as an active, visible practice rather than a hidden cognitive step. Importantly, translanguaging theory also emphasizes learner agency, positioning students as decision-makers who evaluate and reshape linguistic input rather than passively accept it (Dovchin et al., 2025; Schleppegrell et al., 2025). This emphasis aligns closely with qualitative inquiry into students' lived writing experiences.

The writing-as-process perspective further strengthens the analytical framework of this study. Writing is increasingly understood not as a linear act of producing a final product, but as a recursive process involving planning, drafting, revising, and reflecting (Kruse, 2024; Nguyen et al., 2024; Wang, 2025). In EFL contexts, this process is often extended by linguistic challenges, requiring writers to repeatedly negotiate meaning, form, and appropriateness. AI tools intersect with multiple stages of the writing process, particularly during idea development, sentence formulation, and revision (Ghafouri et al., 2024; Khuder, 2025). By focusing on writing as process, this study attends to how AI tools are embedded in students' ongoing decision-making rather than evaluating the quality of final texts alone.

From a sociocultural perspective, learning and writing are mediated by tools, symbols, and social interactions. Language itself is a mediational means (Pu et al., 2025), and digital technologies can function as additional mediators that shape cognitive activity (Reinhold et al., 2024). These tools do not determine learning outcomes on their own, but interact with learners' prior knowledge, goals, and beliefs (Fitriati & Williyan, 2025). This perspective allows for a nuanced analysis of AI use that avoids technological determinism and instead emphasizes human agency and contextual factors.

Together, translanguaging theory, writing-as-process perspectives, and sociocultural mediation provide an integrated analytical lens for examining AI-mediated writing. This framework supports an exploration of how students navigate the movement from L1 thinking to L2 text, how AI tools shape this trajectory, and how students interpret their own writing practices within institutional expectations of academic English.

Previous Studies

Translanguaging in EFL Writing

Research on translanguaging in EFL writing has expanded significantly in recent years, challenging monolingual assumptions in language education. Studies have documented how students use their L1 for brainstorming, outlining, and clarifying complex ideas before producing L2 texts (Pham et al., 2025; Vandermeulen et al., 2024). Qualitative classroom-based research shows that allowing strategic L1 use can reduce cognitive load and enhance content development in writing tasks (Bollegala Arachchige, 2025; Wang, 2026). These studies consistently emphasize that translanguaging supports meaning-making and does not necessarily hinder L2 development. However, much of this research focuses on manual practices such as peer discussion, note-taking, or self-translation, with limited attention to digital mediation.

AI in Academic Writing

Parallel to this, a growing body of literature examines the use of AI tools in EFL writing. Research on machine translation and AI-assisted paraphrasing suggests that students frequently rely on these tools to address vocabulary gaps, grammatical accuracy, and stylistic concerns (Deep & Chen, 2025; Lee et al., 2024; Rafida et al., 2024). Quantitative studies often evaluate improvements in writing quality or error reduction (Khampusaen, 2025; Sari & Han, 2024; Wale & Kassahun, 2024), while survey-based research explores students' attitudes toward AI use (Acosta-Enriquez et al., 2024; Phua et al., 2025). Findings generally indicate that students perceive AI tools as helpful, especially for lower-level linguistic concerns. At the same time, concerns are raised about overreliance, reduced critical engagement, and ethical issues related to authorship.

Despite these contributions, many AI-focused studies treat language use as monolingual and focus primarily on outcomes rather than processes (Leung & Molnar, 2025; Xu et al., 2025). The multilingual pathways through which students generate and refine ideas are often overlooked. As a result, the role of AI in mediating translanguaging remains underexplored. Existing studies rarely examine how students move between languages during AI-assisted writing or how they interpret the cognitive and linguistic shifts involved in this movement.

A smaller number of qualitative studies have begun to address this gap by examining students' writing processes with AI tools. These studies highlight that students do not simply copy AI-generated text, but engage in evaluative and selective practices (Nelson et al., 2025; Sabbaghan & Eaton, 2025). Learners compare AI output with their intended meaning, modify expressions, and sometimes reject suggestions that do not align with their voice or disciplinary norms (Khuder, 2025). Such findings underscore the importance of examining AI use as an interactive and interpretive process. However, even within this emerging literature, translanguaging is often implied rather than explicitly theorized.

Research at the intersection of translanguaging and technology-mediated writing remains relatively limited. Some studies on digital translanguaging have explored multilingual practices in online communication, social media, or collaborative writing platforms (Fu & Zhang, 2025; Yousif, 2025). These studies demonstrate that digital environments can legitimize flexible language use and blur boundaries between languages. Nevertheless,

AI-specific tools such as translation and paraphrasing systems introduce distinct dynamics, as they actively generate linguistic content rather than merely providing a space for interaction (Pratiwi et al., 2025). This distinction calls for closer examination of how AI shapes translanguaging practices in academic writing contexts.

AI-Mediated Translanguaging

Furthermore, students' perspectives on AI-mediated translanguaging remain underrepresented. While prior research documents what students do with AI tools, fewer studies explore how students understand and rationalize their practices. How learners perceive the role of AI in transforming L1 ideas into L2 text, how they negotiate concerns about originality, and how they position themselves as authors in AI-assisted writing are questions that remain insufficiently addressed. Qualitative approaches that foreground students' voices are therefore essential for capturing the complexity of AI-mediated writing.

In sum, previous studies provide valuable insights into translanguaging in EFL writing and the growing use of AI tools, but they rarely bring these strands together in a systematic way. There is a clear gap in research that examines AI-mediated translanguaging as a process-oriented, learner-centred phenomenon. By adopting a qualitative design and an integrated analytical lens, the present study responds to this gap and contributes to a deeper understanding of how university EFL students move from L1 thinking to L2 text through AI-assisted writing practices.

METHODS

Design of the Study

This study employed a qualitative research design to investigate how university EFL students engage in AI-mediated translanguaging during academic writing tasks and how they interpret the role of AI in moving from L1-based thinking to L2 written production. A qualitative design was selected because the study aims to understand processes, practices, and meanings rather than to measure outcomes or establish causal relationships (Lim, 2025). The focus is on writing as a dynamic, recursive, and socially mediated activity, in which AI tools function as part of students' meaning-making ecology.

The study was grounded in a process-oriented and sociocultural perspective, which conceptualizes writing as mediated by tools, languages, and contextual norms. Within this framework, AI tools such as translation and paraphrasing systems were treated as mediational artifacts that interact with learners' linguistic repertoires rather than as neutral or deterministic technologies. The research design emphasized naturalistic inquiry, allowing students to use AI tools voluntarily as part of their authentic writing practices without researcher-imposed requirements or restrictions.

To capture the complexity of AI-mediated translanguaging, the study adopted a multi-source qualitative design. Data were collected across multiple stages of the writing process to document how translanguaging unfolded before, during, and after text production. The integration of real-time process data and retrospective reflections enabled a comprehensive examination of both observable writing behaviours and students' subjective interpretations. This design was particularly suitable for addressing the research questions, which seek to explore how AI is used and how its role is understood by student writers.

With regard to AI tools, participants were not restricted to a single platform but were allowed to use tools they typically employed in their writing practices. Based on think-aloud recordings and follow-up interviews, the most commonly used tools included ChatGPT for idea generation and sentence reformulation, Grammarly for grammar and style suggestions, and machine translation tools such as Google Translate and DeepL for transforming L1 ideas into L2 text. Students interacted with these tools in iterative ways, including inputting L1 phrases, requesting paraphrases, comparing alternative outputs, and revising AI-generated text. This flexible use reflects authentic writing practices rather than task-imposed tool use.

Subject of the Research

The participants were 12 undergraduate students enrolled in an academic writing course in the English Education Department at a public university in Indonesia. The course focuses on developing argumentative and research-based writing skills in English as a Foreign Language (EFL). All participants were in their third year of study and had prior experience completing academic writing assignments in English.

In terms of linguistic background, all participants were multilingual speakers whose first language (L1) was Indonesian, with some also using regional languages (e.g., Javanese or Sundanese) in daily communication. English functioned as a foreign language learned primarily through formal education. Participants reported varying levels of confidence in English writing, ranging from intermediate to upper-intermediate proficiency.

Participants were selected through purposive sampling based on their active engagement in academic writing tasks and their self-reported use of AI tools for writing support. This ensured that participants could provide relevant insights into AI-mediated translanguaging practices. All participants volunteered and provided informed consent prior to the study. Pseudonyms were used to ensure anonymity, and all identifying information was removed from the dataset.

Data Collection

Data collection was designed to capture both real-time writing processes and reflective meaning-making related to AI-mediated translanguaging. Multiple qualitative data sources were used to enable triangulation and enhance the depth of analysis. The primary data sources included think-aloud protocols, writing artifacts accompanied by reflective journals, and semi-structured interviews.

Think-aloud protocols were used to document students' cognitive and linguistic processes during writing. Participants were asked to verbalize their thoughts while composing or revising their academic texts, including moments when they relied on their L1, consulted AI tools, or evaluated AI-generated output. These sessions focused on how students generated ideas, decided when to shift between languages, and assessed the appropriateness of AI suggestions. The think-aloud sessions were audio-recorded, and screen recordings were used when possible, to capture interactions with AI tools in real time. This method provided direct access to otherwise invisible writing processes.

In addition to think-aloud data, students' writing artifacts were collected, including initial drafts and revised versions of their texts. These artifacts were used to contextualize the process data and to trace how ideas and language evolved across drafts. Alongside the writing artifacts, participants maintained reflective journals in which they documented

their experiences using AI during different stages of writing. The journals prompted students to reflect on their reasons for using AI, the perceived benefits and challenges, and how AI influenced their thinking and language choices. These reflections offered insight into students' evolving perceptions of AI-mediated translanguaging beyond the immediate writing event.

Semi-structured interviews were conducted after the completion of the writing tasks to elicit deeper reflections on participants' experiences. The interview protocol included open-ended questions about students' typical writing routines, their views on L1 use in academic writing, their criteria for accepting or rejecting AI-generated text, and their understanding of authorship and responsibility in AI-assisted writing. Interviews were conducted in a language comfortable for the participants to encourage detailed and nuanced responses. All interviews were audio-recorded and transcribed verbatim for analysis.

Data Analysis

Data analysis followed an inductive thematic analysis approach, allowing themes to emerge from the data rather than being predetermined. The analysis proceeded through three iterative coding cycles. In the first cycle, open coding was conducted across all data sources, including think-aloud transcripts, reflective journals, interviews, and writing artifacts, to identify segments related to L1-based idea generation, AI interaction, evaluation of AI output, and transitions between languages. In the second cycle, focused coding was applied to refine and group initial codes into broader conceptual categories. Constant comparison was used to examine similarities and differences across participants and data sources. In the third cycle, these categories were further synthesized into overarching themes that addressed the research questions.

To enhance the trustworthiness of the analysis, several strategies were employed. First, data triangulation was conducted by comparing patterns across think-aloud data, written artifacts, reflective journals, and interview accounts. Second, peer debriefing was carried out with a fellow researcher to review coding decisions and thematic interpretations. Third, member reflection was conducted by sharing preliminary findings with selected participants to confirm credibility. Through this multi-stage and systematic process, the analysis aimed to provide a transparent and rigorous account of AI-mediated translanguaging practices.

FINDINGS

Findings Related to RQ1

How University EFL Students Use AI Tools to Mediate Translanguaging Practoces during Academic Writing Tasks

The analysis revealed that students' AI-mediated translanguaging practices were systematic and purpose-driven rather than incidental. Three major themes emerged: (1) AI as a bridge for L1-based idea generation, (2) iterative negotiation between AI output and writer intention, and (3) strategic use of AI across stages of the writing process.

Table 1.
Themes Related to AI-Mediated Translanguaging Practices (RQ1)

Theme	Description
AI as a bridge for L1-based idea generation	Using AI to transform L1 conceptualization into initial L2 expressions
Negotiating meaning with AI output	Evaluating, modifying, and selectively adopting AI-generated text
Stage-specific AI use in writing	Differentiated AI use during planning, drafting, and revising

AI as a Bridge for L1-Based Idea Generation

Data from think-aloud protocols consistently showed that students began their writing process by conceptualizing ideas in their L1. AI tools were then used to externalize these ideas into English, functioning as an intermediary between thought and text. Rather than directly composing in English, students frequently typed L1 sentences or key ideas into AI tools and examined the resulting L2 output. One participant explained during a think-aloud session:

> *"I already know what I want to say in my first language, but I don't know how to say it academically in English, so I put my idea there first and see how it becomes English."*

This practice was also reflected in reflective journals, where students described AI as helping them "start writing" when facing difficulty in formulating English sentences. AI tools reduced hesitation at the initial drafting stage and allowed students to focus on content development rather than linguistic form. Importantly, students did not perceive this process as mere translation, but as a way to make their thinking visible and workable in English.

Negotiating Meaning with AI Output

A second prominent theme concerned how students interacted with AI-generated text. Across data sources, students were observed actively evaluating and revising AI output rather than adopting it uncritically. Think-aloud data revealed frequent moments of hesitation, comparison, and modification, indicating that students maintained control over the writing process. For example, one participant commented while revising an AI-generated sentence:

> *"This sentence is correct, but it sounds too strong for my argument. I will soften it."*

Such excerpts illustrate that AI output served as a provisional draft rather than a final product. Students compared AI-generated language with their intended meaning, disciplinary expectations, and personal writing style. In several cases, students rejected AI suggestions entirely when they felt the output distorted their original ideas. Interview data further confirmed this pattern. One student stated:

> *"I don't trust AI completely. I always check if the meaning is still mine."*

This negotiation process highlights translanguaging as an active meaning-making practice, where students move back and forth between L1, AI-generated L2, and self-authored revisions. AI did not replace cognitive engagement but instead introduced an additional layer of interaction in the writing process.

Stage-Specific AI Use in Writing

The findings also indicated that students used AI tools differently depending on the stage of writing. During the planning stage, AI was primarily used to translate or paraphrase L1 notes into tentative English outlines. During drafting, AI supported sentence construction and lexical selection. In the revision stage, students used AI to refine clarity, cohesion, and academic tone. Reflective journals revealed awareness of these distinctions. One student wrote:

> *"I use AI more at the beginning and when revising. In the middle, I try to write by myself."*

This stage-specific use suggests that AI-mediated translanguaging is not uniform across the writing process but adapts to students' evolving needs. AI tools were integrated flexibly rather than dominating the entire writing activity.

How Students Make Sense of the Role of AI in Moving from L1-Based Thinking to L2 Written Production

Analysis of interview data and reflective journals revealed that students' interpretations of AI's role extended beyond functional support. Three major themes emerged: (1) AI as cognitive scaffolding, (2) AI and shifting perceptions of authorship, and (3) emotional and confidence-related dimensions of AI use.

Table 2.
Themes Related to Students' Interpretations of AI Use (RQ2)

Theme	Description
AI as cognitive scaffolding	Viewing AI as support for thinking, not only language
Authorship and responsibility	Negotiating ownership of AI-assisted text
Emotional and affective support	AI reducing anxiety and increasing confidence

AI as Cognitive Scaffolding

Students frequently described AI as supporting not only linguistic accuracy but also cognitive organization. Interviews revealed that AI helped students clarify arguments, structure ideas, and maintain logical flow. One participant explained:

> *"Sometimes I know my idea, but it is messy. AI helps me see it more clearly."*

This perception positions AI as a thinking partner rather than a simple translation device. Students viewed AI as temporarily scaffolding their cognitive processes, especially when

dealing with complex academic content. However, students emphasized that this support was most effective when combined with their own judgment and revision.

Authorship and Responsibility

A recurring theme in students' sense-making concerned authorship. While students appreciated AI assistance, they were highly aware of the need to maintain ownership of their writing. Many participants explicitly distinguished between "AI text" and "my text," emphasizing the importance of personal revision. One interviewee noted:

> *"If I just copy, it's not my writing. I must change it so it represents my thinking."*

This awareness influenced how students used AI tools. They reported intentionally modifying AI-generated text to align with their voice and academic identity. Rather than feeling that AI diminished authorship, students perceived authorship as residing in decision-making and revision rather than in initial text generation.

Emotional and Confidence-Related Dimensions

Finally, students interpreted AI as providing emotional support during writing. Reflective journals frequently mentioned reduced anxiety, especially when facing unfamiliar academic genres or complex topics. One student wrote:

> *"With AI, I feel less afraid to start writing because I know I have support."*

This sense of reassurance did not eliminate challenges but made them more manageable. Students described increased confidence in expressing ideas in English, particularly when transitioning from L1 conceptualization to L2 expression. AI was thus perceived as easing emotional barriers associated with academic writing.

DISCUSSION

This study set out to explore how university EFL students engage in AI-mediated translanguaging during academic writing tasks and how they interpret the role of AI in moving from L1-based thinking to L2 written production. Rather than treating AI use as a technical or ethical problem, the discussion situates the findings within broader theoretical and pedagogical conversations on translanguaging, writing-as-process, and mediated learning. By doing so, this section interprets the significance of the findings and explains how they extend existing understandings of multilingual writing in AI-enhanced environments.

One key insight emerging from this study is that AI-mediated translanguaging is best understood as a meaning-oriented process rather than a language-substitution practice. The findings indicate that students did not use AI tools merely to convert L1 text into L2 text mechanically. Instead, AI served as a mediational space in which ideas were reshaped, tested, and refined. This observation aligns with translanguaging theory, which emphasizes the fluid and strategic mobilization of linguistic resources for meaning-making (León et al., 2024; Lu & Tian, 2025; Urzúa, 2025). The students' movement between L1 thinking, AI-generated L2 text, and self-authored revisions reflects translanguaging as an active process of negotiation rather than a linear transfer between languages, reinforcing the view that learners dynamically orchestrate their linguistic repertoires in response to communicative demands (Moraru et al., 2025).

This finding can be further interpreted through the lens of translanguaging and sociocultural theory. The use of AI as a bridge for L1-based idea generation reflects the creation of a translanguaging space, where students mobilize their full linguistic repertoires in interaction with mediational tools. Rather than separating languages, AI enables a dynamic space in which L1 conceptualization and L2 expression are interconnected (Sri & Williyan, 2026). From a sociocultural perspective, AI functions as a mediational means that supports the externalization of thought, allowing learners to transform internal cognitive processes into visible linguistic forms.

Importantly, the study extends translanguaging scholarship by highlighting how AI externalizes cognitive processes that are often invisible in traditional writing instruction. In non-AI contexts, the transition from L1 conceptualization to L2 expression typically occurs internally, making it difficult for researchers and teachers to observe. AI tools, however, produce intermediate textual artifacts that reveal how ideas evolve across languages. This finding resonates with earlier discussions of AI as a mediational means that reshapes writing activity rather than merely assisting with surface-level language (Black & Tomlinson, 2025; Kim et al., 2025) and supports the argument that digital tools can make otherwise hidden meaning-making processes visible for analysis (Pavlova et al., 2024).

This negotiation process also aligns with sociocultural views of mediation as dialogic and agentive. Students' active evaluation and modification of AI-generated text illustrate that mediation is not unidirectional but involves ongoing interaction between the learner and the tool (Triwibowo & Polim, 2025). In this sense, AI-mediated translanguaging can be understood as a dialogic process in which meaning is co-constructed through iterative engagement with multiple linguistic resources.

The findings also contribute to writing-as-process perspectives by demonstrating that AI use is stage-sensitive and recursive. Students' differentiated use of AI during planning, drafting, and revising challenges simplistic assumptions that AI dominates the entire writing process. Instead, students strategically integrated AI when linguistic or cognitive demands were highest, particularly at the initial drafting and revision stages. This selective use reinforces the view that writing is a recursive activity involving planning, reformulating, and reflecting (Kruse, 2024; Nguyen et al., 2024; Wang, 2025) and that learners regulate their engagement with available resources in response to evolving task demands (Ghafouri et al., 2024; Khuder, 2025). AI, in this sense, becomes one of many resources writers draw upon rather than a replacement for writing competence. From a writing-as-process perspective, the stage-specific use of AI further reinforces the recursive nature of writing. Students' selective engagement with AI at different stages demonstrates their ability to regulate tool use in response to evolving cognitive and linguistic demands (Azis & Numan, 2026), highlighting the role of learner agency in mediating technological affordances.

From a sociocultural perspective, the study underscores the role of AI as a mediational artifact that interacts with learners' existing repertoires and beliefs. Students' evaluative stance toward AI output suggests that mediation is not unidirectional. Rather than passively receiving assistance, students engaged in dialogue with AI-generated text, accepting, modifying, or rejecting suggestions. This dialogic interaction reflects the sociocultural understanding that tools shape cognition only through users' purposeful activity (Pu et al., 2025; Reinhold et al., 2024) and that learning outcomes are mediated

by the interaction between technological resources and learners' goals, experiences, and beliefs (Fitriati & Williyan, 2025). The findings therefore caution against deterministic narratives that portray AI as either inherently beneficial or inherently harmful to writing development.

Another significant contribution of this study lies in its insights into authorship and identity in AI-assisted writing. Students' strong emphasis on maintaining ownership of their texts challenges common fears that AI inevitably erodes academic integrity or student voice, concerns frequently raised in AI-in-education research (Chen & Gong, 2025; Erdem Coşgun, 2025; Kovari, 2025). Instead, participants located authorship in the act of decision-making and revision rather than in the origin of linguistic material. This supports earlier qualitative findings that learners engage in selective and critical use of AI-generated text rather than adopting it uncritically (Nelson et al., 2025; Sabbaghan & Eaton, 2025) and highlights agency as a central dimension of AI-assisted writing (Dovchin et al., 2025; Schleppegrell et al., 2025).

The affective dimension of AI-mediated translanguaging also warrants attention. Students' descriptions of reduced anxiety and increased confidence highlight an often-overlooked aspect of academic writing in EFL contexts, where linguistic limitations can intensify cognitive load and apprehension (Haake, 2025). The findings suggest that AI tools can function as emotional scaffolds that lower entry barriers to writing and support sustained engagement with complex tasks. This aligns with previous research showing that mediated support can enhance learners' confidence, agency, and willingness to participate in L2 writing (Biju et al., 2024; Huang et al., 2024; Zare et al., 2025).

At the same time, students' cautious attitudes toward AI use indicate an emerging form of critical engagement. Participants demonstrated awareness of the limitations of AI, including concerns about accuracy, appropriateness, and overreliance, echoing broader discussions in the literature on the risks associated with uncritical dependence on AI tools (Leung & Molnar, 2025; Xu et al., 2025). This awareness suggests that students are not merely consumers of AI output but are developing informal evaluative frameworks for its use, a practice that reflects the need to understand AI-assisted writing as an interactive and interpretive process rather than a purely technical one (Crompton et al., 2024; Kuteeva & Andersson, 2024; Link et al., 2024).

Pedagogically, the discussion invites a reconsideration of how AI and translanguaging are positioned in EFL writing instruction. Rather than framing AI use as a violation of monolingual norms that traditionally discourage reliance on L1 (Arochman et al., 2024), educators may benefit from acknowledging the legitimacy of multilingual meaning-making and guiding students toward reflective and ethical use of AI. This perspective is consistent with research showing that strategic use of L1 can reduce cognitive load and support content development in writing (Bollegala Arachchige, 2025; Wang, 2026). Recognizing students' existing practices can help bridge the gap between institutional expectations and learners' lived experiences, particularly when pedagogical approaches emphasize process, reflection, and revision.

Finally, the study contributes to ongoing debates about the future of writing in the age of AI. The findings challenge narratives that portray AI as either a threat to writing or a shortcut to proficiency. Instead, AI emerges as a complex mediational resource that amplifies existing multilingual practices and reshapes how students navigate the

transition from thought to text, reinforcing the view of writing as a socially and technologically mediated activity (Cui et al., 2025; Ou et al., 2024). Understanding this complexity requires qualitative, process-oriented research that foregrounds student perspectives. By focusing on AI-mediated translanguaging, this study offers a nuanced account of how multilingual writers adapt to technological change while maintaining agency, responsibility, and voice in academic writing.

In practical terms, these findings suggest several implications for EFL instruction. First, teachers can guide students in developing critical AI literacy by encouraging them to evaluate and revise AI-generated text rather than adopting it uncritically (Ifadloh et al., 2025). Second, reflective writing practices, such as journals or think-aloud activities, can be integrated into instruction to help students become more aware of their writing processes and AI use (Bidari & Taufiqi, 2026). Third, instructors can design assignments that explicitly allow and structure AI use, for example by requiring students to document how they used AI and justify their revisions (Fadillah & Ahad, 2026). Such approaches can support responsible, transparent, and pedagogically meaningful integration of AI in academic writing.

CONCLUSION

This study examined how university EFL students engage in AI-mediated translanguaging during academic writing tasks and how they interpret the role of AI in moving from L1-based thinking to L2 written production. The findings demonstrate that students' use of AI tools is strategic, reflective, and closely tied to their meaning-making processes. Rather than functioning as a simple translation mechanism, AI acted as a mediational resource that supported idea development, linguistic refinement, and emotional regulation during writing. Students maintained a strong sense of authorship by actively evaluating and revising AI-generated text, positioning themselves as decision-makers throughout the writing process. These insights contribute to a more nuanced understanding of AI-assisted writing, foregrounding the interplay between translanguaging, agency, and writing-as-process in contemporary EFL contexts.

Despite its contributions, this study has several limitations. First, the relatively small qualitative sample within a single university context may limit transferability. Second, some data relied on self-reported reflections, which may be influenced by participants' perceptions. Third, the study did not control for specific AI tools, prioritizing naturalistic use over experimental consistency.

Building on these, several directions for future research are suggested. Longitudinal studies could explore how AI-mediated translanguaging practices evolve over time and how sustained engagement with AI tools influences writing development, academic identity, and language awareness. Future research might also examine instructors' perspectives on AI-mediated translanguaging and how pedagogical policies align with students' actual practices. Comparative studies across genres, disciplines, or educational contexts would further illuminate how contextual factors shape AI-assisted writing behaviors. Finally, research integrating explicit AI literacy interventions could investigate how guided instruction affects students' critical engagement with AI tools and their ability to use them responsibly in academic writing.

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