

Volume 2, Issue 4

Review Article

Date of Submission: 10 Sep, 2026

Date of Acceptance: 05 Oct, 2026

Date of Publication: 13 Oct, 2026

Human Attentiveness in AI-Assisted Academic Writing: A Process-Oriented Account of Co-Construction and Epistemic Stability

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Citation: Nguyen, T. P. (2026). Human Attentiveness in AI-Assisted Academic Writing: A Process-Oriented Account of Co-Construction and Epistemic Stability. *Digit Hum Soc Sci Cult Preserv*, 2(4), 01-13.

Abstract

This study examines AI-assisted academic writing as an interaction-dependent and co-constructed process between a human writer and an artificial intelligence (AI) system. While existing research has focused largely on the quality of AI-generated outputs or ethical concerns surrounding AI use, less attention has been given to how academic writing develops through sustained human–AI interaction over time. Drawing on longitudinal interactional data from the development of an academic manuscript in the field of English for Specific Purposes (ESP), the study analyses eight representative cases across extended cycles of drafting, revision, and recalibration.

The findings show that AI-assisted writing is characterised by both substantial support and recurrent instability. AI contributed to workflow management, research planning, organisational structuring, and argument development. At the same time, the analysis identified recurring limitations involving false-positive academic evaluation, evidential thinness, structural and conceptual drift, and repeated recalibration across drafting cycles. Importantly, locally fluent and persuasive AI-generated responses did not necessarily guarantee longitudinal conceptual coherence or evidential adequacy across the evolving manuscript.

The study argues that the effectiveness of AI-assisted academic writing depends not only on the generative capabilities of AI systems, but also on sustained human attentiveness throughout the writing process. Human writers remained epistemically central in identifying conceptual drift, restoring analytical alignment, reassessing evidential grounding, and maintaining coherence across extended interactional activity. By shifting attention from isolated outputs to the longitudinal development of writing, the study offers a process-oriented account of how academic writing is increasingly co-constructed and stabilised in AI-mediated contexts.

Keywords: AI-Assisted Academic Writing, Human Attentiveness, Co-Construction, Epistemic Stability, Interaction-Dependent Writing, English for Academic Purposes (EAP)

Introduction

AI-Assisted Academic Writing and the Changing Nature of Writing Processes

The rapid development of generative artificial intelligence (AI) systems has begun to reshape academic writing practices across disciplines. Large language models are increasingly used to support activities such as idea generation, drafting, revising, summarising, and language editing [1-3]. In EAP contexts, AI-assisted writing has been associated with increased efficiency, linguistic support for multilingual writers, and expanded access to academic discourse conventions.

At the same time, increasingly sophisticated AI-generated discourse introduces new challenges for academic writing. Contemporary AI systems can now produce highly fluent and rhetorically persuasive responses that often appear coherent and academically appropriate at the surface level. As a result, AI-assisted writing increasingly unfolds through

sustained interaction between human writers and AI systems across extended drafting and revision processes.

Importantly, however, local fluency does not necessarily guarantee conceptual stability or analytical adequacy over time. While AI may effectively support specific writing tasks, high-quality academic manuscripts still require ongoing attention to conceptual direction, evidential grounding, theoretical alignment, and coherence across multiple drafting stages. These demands continue to depend heavily on human evaluation and intervention.

This issue becomes particularly significant in extended academic writing contexts, where manuscripts evolve recursively through planning, drafting, revision, feedback, and analytical refinement. In such environments, writing quality depends not simply on generating plausible text, but on sustaining coherence and intellectual control throughout an evolving writing process. The growing sophistication of AI systems therefore raises an important question: what remains the role of human attentiveness in AI-assisted academic writing?

From AI-Generated Text to Interaction-Dependent Writing Processes

Existing research on AI-assisted writing has largely focused on two broad areas: the capabilities and quality of AI-generated text, including fluency, coherence, and efficiency, and ethical concerns surrounding AI use, such as plagiarism, authorship, transparency, and academic integrity [1,4-7].

While these studies provide important insight into the opportunities and risks associated with generative AI, comparatively less attention has been given to how academic writing develops through sustained human–AI interaction over time, particularly in authentic writing situations involving extended drafting, revision, and conceptual development.

This gap is important because AI-assisted writing is not simply a matter of receiving isolated outputs from a technological system. Rather, writing increasingly emerges through recursive interaction in which writers continuously evaluate, modify, reject, and recalibrate AI-generated suggestions across multiple stages of manuscript development. From this perspective, writing quality cannot be understood solely in terms of textual fluency, but must also be examined in relation to how coherence, evidential adequacy, and conceptual direction are maintained across evolving interactional processes.

Importantly, the increasing fluency of AI-generated discourse may intensify rather than reduce the need for human attentiveness. Because AI-generated responses can appear highly plausible and analytically persuasive at the local level, writers may develop premature trust in the apparent stability of the evolving manuscript. Yet local coherence does not necessarily ensure broader conceptual integration or long-term analytical alignment across extended writing activity. As a result, the effectiveness of AI-assisted academic writing may depend not only on the capabilities of AI systems, but also on the writer's ability to sustain evaluative attentiveness throughout prolonged interaction with those systems.

The Present Study and its Contribution

This study examines AI-assisted academic writing as an interaction-dependent and co-constructed process between a human writer and an AI system. Drawing on longitudinal interactional data from the development of an academic manuscript in the field of English for Specific Purposes (ESP), the study investigates how writing evolves through extended cycles of drafting, evaluation, revision, and recalibration across human–AI interaction.

Rather than focusing primarily on the quality of isolated AI-generated outputs, the study examines the interactional mechanisms through which academic writing is progressively developed, destabilised, and reorganised over time. In particular, it explores how AI support may simultaneously facilitate and complicate writing processes, creating conditions in which sustained human attentiveness becomes increasingly important despite the growing sophistication of AI-generated assistance. In this study, attentiveness refers not merely to error correction or general supervision, but to the ongoing maintenance of structural alignment, conceptual continuity, evidential adequacy, and longitudinal coherence across evolving drafting activity.

The study contributes to existing research in several ways. First, it provides a process-oriented account of AI-assisted academic writing based on naturally occurring longitudinal interactional data rather than isolated writing tasks or retrospective perception data. Second, it identifies recurrent interactional patterns underlying both the strengths and limitations of AI-assisted writing, including false-positive academic evaluation, evidential thinness, structural and conceptual drift, and iterative recalibration across drafting cycles. Third, the study argues that AI-assisted academic writing remains fundamentally interaction-dependent because locally adaptive AI responses do not reliably sustain longitudinal conceptual coherence over time.

More broadly, the study proposes that the role of the human writer in AI-assisted academic writing is not merely supervisory or corrective, but epistemically central. The findings suggest that sustained human attentiveness functions as a stabilising process through which conceptual direction, evidential grounding, analytical alignment, and manuscript-level coherence are continuously monitored and restored throughout extended writing activity. In doing so, the study offers a process-oriented framework for understanding how academic writing is increasingly co-constructed and stabilised in AI-mediated contexts.

Context of the Study

The analysis is grounded in a real-world academic writing context involving an English for Specific Purposes (ESP) lecturer developing a research article in the field of hospitality English. The writing process involved sustained interaction with an AI system over approximately six months, during which multiple drafts were produced, evaluated, revised, and reorganised.

Throughout this period, the interaction extended beyond isolated prompting or editing tasks and became part of an evolving writing process involving conceptual refinement, methodological discussion, analytical restructuring, and manuscript-level revision. The resulting interactional dataset provides insight into how AI-assisted academic writing develops under authentic academic conditions through sustained human–AI engagement.

Rather than treating the interaction as a controlled experiment designed to evaluate AI performance in isolation, the study examines how writing quality emerges through naturally occurring interaction across extended academic activity. This context offers a valuable opportunity to explore how coherence, evidential adequacy, and conceptual direction are negotiated throughout the development of an academic manuscript.

Research Questions

The study addresses the following research questions:

RQ1

How does AI-assisted academic writing unfold as an interaction-dependent process between the human writer and the AI?

RQ2

What recurrent limitations emerge in AI-assisted academic writing, particularly in relation to academic evaluation, evidential adequacy, and the maintenance of structural and conceptual coherence across extended writing processes?

RQ3

How is human attentiveness enacted in AI-assisted academic writing, particularly in maintaining conceptual direction, evidential adequacy, and manuscript coherence?

RQ4

What forms of support does AI provide during extended academic writing processes, including workflow management, research planning, and intellectual structuring?

RQ5

How can AI-assisted academic writing be reconceptualised as a co-constructed and interaction-dependent process involving both sophisticated AI support and sustained human attentiveness?

Literature Review

Academic Writing as a Process-Oriented and Interactional Activity

Academic writing has long been understood not as a linear act of text production, but as a recursive and evolving process involving planning, drafting, evaluation, revision, and restructuring over time [8,9]. From process-oriented perspectives in EAP and writing studies, writing develops through ongoing cycles of negotiation in which ideas, evidence, and argumentation are progressively refined rather than produced in finished form from the outset [10,11].

Importantly, this perspective foregrounds the interactional nature of writing development. Writers continuously engage with multiple forms of input and feedback, including disciplinary expectations, reviewer comments, supervisory guidance, peer responses, and existing literature. As a result, coherence and argumentative direction are not established once and for all, but are repeatedly reassessed and recalibrated throughout evolving drafting activity.

From this perspective, academic writing can also be understood as a dialogic process shaped by multiple voices, expectations, and interpretive positions [12]. Writers continually anticipate readers, negotiate disciplinary conventions, and adjust relationships between claims, evidence, and analytical framing across successive drafts. Writing therefore involves not only the production of text, but the sustained management of conceptual and rhetorical alignment within a developing manuscript.

These process-oriented perspectives provide an important foundation for understanding how AI systems increasingly participate in academic writing activity. As AI-generated support becomes integrated into drafting, revision, evaluation, and organisational work, academic writing may become increasingly interaction-dependent, unfolding through sustained engagement between human writers and AI systems across extended writing processes. Recent discussions of AI-assisted writing and educational uses of generative AI have similarly suggested that writing activity is becoming increasingly distributed across human judgment, technological support, and iterative interactional processes rather than being located solely within the individual writer [1,2].

AI-Assisted Academic Writing and Human–AI Interaction

The rapid development of generative AI systems has significantly reshaped academic writing practices across educational and research contexts. Recent studies have shown that AI tools can support a wide range of writing-related activities, including idea generation, language refinement, summarisation, organisational planning, feedback provision, and drafting assistance [1,5]. As a result, AI-assisted writing is increasingly becoming integrated into everyday academic

and research practices.

Existing research has provided important insight into the capabilities, risks, and ethical implications of generative AI in academic writing [4,13]. More recent studies have also begun to examine how writers integrate AI into ongoing academic practices, highlighting emerging forms of collaboration, dependency, strategic adaptation, and distributed writing activity within higher education contexts [1,2]. However, the strong emphasis on isolated outputs, short-task performance, and prompt-based evaluation continues to dominate much of the literature, potentially obscuring how instability develops cumulatively across evolving interactional writing processes. As a result, current approaches may overestimate the stability of AI-assisted writing by focusing primarily on local textual performance without examining how conceptual alignment is maintained across interconnected stages of manuscript development.

Importantly, AI-assisted writing environments are interactionally dynamic rather than textually fixed. AI systems respond continuously to prompts, revisions, and evolving drafting contexts, becoming embedded within recursive cycles of evaluation, restructuring, and revision. From this perspective, AI-assisted writing is better understood not simply as automated text production, but as an interaction-dependent process in which writing develops progressively through ongoing engagement between human writers and AI systems.

At the same time, the growing fluency of AI-generated academic discourse introduces new forms of complexity into writing processes. Locally coherent responses may not consistently preserve broader conceptual continuity as manuscripts evolve over time. As drafting histories accumulate, writers may increasingly need to monitor coherence, evidential adequacy, and analytical alignment across interconnected stages of manuscript development.

This interactional perspective therefore shifts attention away from AI-generated text as an isolated product and towards the evolving interactional mechanisms through which academic writing is collaboratively organised, destabilised, recalibrated, and stabilised within AI-mediated environments.

Limitations and Instability in AI-Assisted Academic Writing

Despite the growing sophistication of generative AI systems, recent research has increasingly identified important limitations in AI-assisted academic writing. Existing studies have reported concerns relating to factual inaccuracies, fabricated references, shallow analysis, disciplinary misalignment, and unreliable evaluative feedback [1,4].

These limitations suggest that fluency and rhetorical plausibility do not necessarily guarantee analytical adequacy or academic reliability. Recent discussions have further highlighted the risk that increasingly sophisticated AI-generated discourse may encourage forms of overreliance, particularly when users accept apparently plausible outputs without sufficient critical evaluation or verification [1,7]. Such concerns shift attention from factual correctness alone towards broader questions of judgment, monitoring, and epistemic responsibility in AI-assisted writing environments.

Importantly, many of these limitations extend beyond isolated textual errors. Several studies have noted that AI-generated academic discourse may appear coherent and persuasive at the surface level while masking deeper problems involving evidential grounding, conceptual precision, or argumentative alignment [5,13]. Emerging reviews have similarly argued that the increasing sophistication of generative AI may create new forms of overreliance and critical disengagement, particularly when fluent outputs encourage users to accept apparently plausible responses without sustained evaluation of evidential quality or conceptual adequacy.

In such cases, the apparent fluency of AI-generated academic discourse may create a form of epistemic opacity in which conceptual fragmentation, evidential weakness, or analytical misalignment remain partially masked beneath rhetorically persuasive surface coherence.

At the same time, relatively little research has examined how these forms of instability emerge and accumulate across extended writing processes. In longer interactional sequences, academic writing involves the ongoing management of relationships between research questions, theoretical positioning, evidence, analytical categories, and argumentative progression. As manuscripts evolve through repeated drafting and revision cycles, maintaining coherence across interconnected components becomes increasingly complex.

Within AI-assisted writing environments, this complexity may become further intensified. AI systems can generate locally responsive and contextually plausible output, yet may not consistently preserve alignment with the broader conceptual direction of the evolving manuscript over time. As a result, issues such as conceptual drift, structural fragmentation, delayed recognition of omissions, and recurrent recalibration may emerge gradually across prolonged interactional activity rather than appearing as immediately visible errors.

These observations suggest the need to move beyond viewing AI limitations primarily in terms of factual inaccuracy or technical error. Instead, AI-assisted academic writing may involve broader forms of conceptual, evidential, and organisational instability that become visible only through sustained engagement with evolving writing processes. Importantly, these forms of instability may not appear immediately during local drafting interactions.

Human Attentiveness and Interaction-Dependent Writing

These limitations point towards the continuing importance of human attentiveness within AI-assisted academic writing. Existing research has increasingly argued that human writers remain necessary not only for verifying factual accuracy, but also for maintaining analytical judgment, disciplinary appropriateness, and critical evaluation throughout writing processes [1,13]. Writers may therefore recognise problems only after coherence begins to weaken across multiple stages of manuscript development.

Related discussions have recently emerged within research on AI literacy, critical AI use, and human oversight. Although these studies do not always employ the term attentiveness explicitly, they consistently emphasise the continuing importance of human judgment, monitoring, verification, and critical evaluation when working with generative AI systems [1,7]. The present study extends this line of inquiry by examining how such evaluative engagement operates longitudinally across evolving academic writing processes rather than at isolated moments of AI use.

Recent work on human–AI collaboration further suggests that the educational value of generative AI depends not simply on access to powerful tools, but on users’ ability to engage with those tools critically, strategically, and reflexively. As AI becomes increasingly integrated into academic writing, attention may therefore need to shift from evaluating AI-generated outputs alone towards understanding how writers regulate, monitor, and coordinate writing processes across extended interactional activity.

At the same time, relatively little research has examined how human attentiveness operates across extended AI-assisted writing activity. Much of the current literature continues to evaluate AI-generated outputs at isolated textual moments rather than examining how coherence, evidential grounding, and conceptual continuity are maintained longitudinally across evolving drafting processes.

This gap is important because AI-assisted writing increasingly unfolds through recursive interaction rather than one-step generation. Output-oriented approaches are therefore less able to reveal forms of instability that emerge only through accumulated interactional history, including delayed structural omission, conceptual drift, evidential imbalance, and recurrent recalibration across manuscript development.

From this perspective, human attentiveness involves more than local error correction. It includes the ongoing maintenance of conceptual direction, structural alignment, evidential adequacy, and coherence across interconnected stages of writing activity. The present study therefore examines AI-assisted academic writing not as a stable process of automated generation, but as an evolving interactional process in which broader forms of coherence remain dependent on sustained human evaluative engagement over time.

Positioning the Present Study

The preceding review suggests that important advances have been made in understanding both the capabilities and limitations of generative AI in academic writing. However, much of the existing literature continues to focus on isolated outputs, short-task performance, or user perceptions of AI-assisted writing. Comparatively less attention has been given to how writing develops through sustained human–AI interaction across extended drafting activity.

This gap is significant because many aspects of academic writing, including conceptual development, evidential grounding, structural organisation, and analytical coherence, emerge progressively over time rather than within individual writing episodes. As interactional histories accumulate, maintaining alignment across different parts of a manuscript becomes an increasingly important component of writing development.

The present study addresses this gap by examining AI-assisted academic writing as an interaction-dependent process based on longitudinal interactional data collected during the development of an academic manuscript. Rather than evaluating isolated outputs, the study investigates how writing quality, instability, and coherence are negotiated across extended human–AI engagement. In doing so, it seeks to contribute to a more process-oriented understanding of AI-assisted academic writing and the role of human attentiveness in maintaining epistemic stability throughout manuscript development.

Methodology

Research Design

This study adopted a qualitative longitudinal practitioner inquiry design to examine how AI-assisted academic writing developed through sustained interaction between a human writer and an AI system. The study focused on writing as an evolving process rather than a series of isolated outputs, allowing the analysis to capture how evaluation, revision, conceptual development, and coherence management unfolded across extended drafting activity.

A practitioner inquiry approach was considered appropriate because the researcher was directly involved in the writing process being examined. This design enabled close observation of naturally occurring interactional episodes and provided access to forms of evaluative reasoning, recalibration, and decision-making that may be less visible in externally observed writing contexts.

Research Context

The study is situated in a real academic writing context involving an English for Specific Purposes (ESP) lecturer developing a research article in the field of hospitality English. The writing process took place over approximately half a year and involved sustained interaction with an AI system across multiple stages of writing.

These stages included idea generation, drafting, revising, responding to reviewer expectations, and restructuring sections of the manuscript. The AI functioned as a responsive writing support system, providing suggestions and generating text, while the human writer remained responsible for evaluating, selecting, and refining the output.

Data Source

The primary data consist of chat-based interactional logs between the author and the AI system, generated during the writing process. These interactions include prompts, AI-generated responses, and subsequent author feedback or intervention.

Importantly, the data were not elicited for experimental purposes, but emerged organically as part of a real academic writing activity. As such, they capture authentic instances of problem-solving, negotiation, and revision, reflecting the complexity of AI-assisted writing in practice.

Data Selection

Given the volume of interactional data generated over the six-month period, a selective approach was adopted. Eight cases were identified as the primary units of analysis.

The selection was guided by the following criteria:

- **Salience:** The interaction involves a clearly identifiable issue or turning point
- **Interactional Depth:** The case includes meaningful exchange rather than a single prompt–response
- **Analytical Relevance:** The case illustrates a recurring pattern related to the research focus

The selected cases represent a range of interaction types, including both limitations (e.g., misalignment, omission, evidential insufficiency) and successful forms of support (e.g., structuring, planning, and cognitive assistance).

Importantly, the selection of eight cases was guided by analytic richness rather than frequency. Together, the cases capture recurrent forms of both support and instability across different stages of manuscript development, providing insight into how AI-assisted academic writing was negotiated over time.

Data Treatment

As the interactional data were produced in both Vietnamese and English, excerpts presented in the Results section are provided in English translation, with the original Vietnamese expressions included in parentheses where analytically relevant.

This approach supports readability while preserving interactional and evaluative nuances embedded in the original exchanges. Vietnamese excerpts are selectively retained when they capture meanings, tones, or evaluative stances that are significant for the analysis.

Analytical Procedure

The analysis was conducted through an iterative and interpretive process designed to examine how AI-assisted academic writing developed across extended human–AI interaction. Rather than treating individual prompts or AI responses as isolated units of analysis, the study focused on interactional episodes in which writing-related decisions, evaluations, revisions, and recalibrations unfolded over time.

The analytical process proceeded in four stages. First, the complete interactional dataset was reviewed repeatedly to identify episodes that appeared theoretically relevant to the study's focus on AI-assisted writing development. Particular attention was given to moments involving evaluation, revision, conceptual negotiation, structural reorganisation, evidential discussion, and reflections on writing quality.

Second, these episodes were examined comparatively in order to identify recurring interactional patterns across different stages of manuscript development. Rather than coding for surface linguistic features, the analysis focused on higher-order writing processes, including evaluative judgment, evidential assessment, coherence management, conceptual alignment, and the redistribution of cognitive and analytical labour between the human writer and the AI system.

Third, recurring patterns were progressively grouped into broader analytical categories through constant comparison across cases. This process resulted in the identification of five major themes: false-positive academic evaluation, evidential thinness and co-construction, backbone failure and recovery, iterative recalibration, and positive forms of AI-supported cognitive and organisational assistance.

Finally, the resulting themes were interpreted in relation to the research questions and broader discussions of AI-

assisted academic writing, with attention to the mechanisms through which writing quality, instability, and coherence were negotiated across human–AI interaction.

Importantly, the analytical process was recursive rather than strictly linear. Data collection, interpretation, comparison, and theoretical refinement frequently informed one another throughout the study. This approach was consistent with the exploratory and process-oriented nature of the research, which sought to understand how academic writing evolved through sustained interaction rather than to test predetermined hypotheses.

Researcher Positionality

In this study, the author assumes a dual role as both researcher and participant. This positioning provides direct access to the unfolding writing process and enables close analysis of interactional dynamics, while also requiring reflexive attention to analytical distance and interpretation.

To address this, the study focuses on observable interactional patterns rather than subjective self-reflection. The analysis examines how specific episodes of human–AI interaction reveal broader mechanisms of negotiation, intervention, recalibration, and co-construction in academic writing. The analytical emphasis therefore lies on interactional processes rather than on personal experience itself.

The study prioritises analytic depth rather than statistical generalisation, using a longitudinal and context-specific dataset to examine interactional mechanisms that may be less visible in short-term or output-oriented investigations of AI-assisted writing.

Results

This section presents the findings from the analysis of interactional episodes between the author and the AI across an extended academic writing process. Drawing on eight cases derived from real-time writing interactions, the analysis identifies recurrent patterns in how AI-assisted academic writing unfolds in practice.

The findings are organised into two broad domains: (1) limitations of AI-assisted academic writing, particularly in relation to academic evaluation, evidential grounding, structural and conceptual coherence, and iterative calibration, and (2) positive contributions of AI, including support for research planning, workflow management, and intellectual structuring.

Meta-Level Failures in Academic Judgment and Evaluation

The analysis revealed that AI-generated evaluative feedback may simulate expert judgment while failing to align with actual academic gatekeeping standards.

A representative example is provided in Case 1, where the author sought advice on whether submitting to a highly selective journal would be overly ambitious. The AI responded with strong and confident reassurance, stating that the submission was “not a risky submission” and that the manuscript was “exactly our readership” and “matches the expectations of ESP research.”

However, this evaluation was contradicted by the actual editorial outcome. The manuscript was rejected without external review, with the editor noting that “the manuscript’s overall structure does not meet the expected conventions of a research article in our journal.”

This discrepancy highlights a pattern of false-positive academic evaluation, in which the AI constructs rhetorically plausible justifications for suitability while failing to detect deeper issues related to genre conventions and journal fit. Importantly, the issue is not superficial error, but the production of analytically convincing yet misaligned judgment. This suggests that AI may shape not only local writing decisions, but also higher-level strategic choices, including submission planning, revision priorities, and the writer’s confidence in the manuscript’s publishability.

Evidential Thinness and the Co-Construction of Data Richness

Another recurring pattern concerns the tension between analytical fluency and evidential depth in AI-generated analysis.

In Case 2, the author evaluated an AI-generated analytical paragraph as “khá ok rồi, nhưng... chưa thấy dữ liệu sống” (“quite good, but it lacks real, lived data”). The initial draft was coherent and appropriately structured, but relied primarily on summarisation rather than direct engagement with empirical data.

When prompted, the AI acknowledged that the text was “clean quá” (“too clean”) and proposed adding quotations. However, the revised version became shorter and more condensed, leading the author to observe that the “Version Case 1 (with evidence)... was even shorter than the original paragraph.”

This interaction reveals a tension between concision and analytical richness. While the AI can incorporate evidence when explicitly instructed, it does not reliably balance data integration with sustained analytical development. Crucially, it is

the human writer who identifies this imbalance and drives further refinement.

Taken together, these findings suggest that evidential richness is not generated automatically, but emerges through iterative negotiation. Data is not simply “inserted” by the AI, it becomes analytically meaningful only when demanded, calibrated, and expanded through human intervention.

Backbone Failure and Recovery Across Structural and Conceptual Levels

The analysis repeatedly showed that important organisational structures could gradually disappear across extended drafting activity despite earlier agreement and refinement. Across the interactional episodes analysed, the maintenance of longitudinal manuscript coherence depended not simply on AI-supported drafting, but on sustained forms of human attentiveness involving structural monitoring, conceptual alignment, evidential reassessment, and coherence restoration throughout evolving drafting cycles.

Structural Backbone: Research Questions

At the structural level, Case 3 reveals a form of backbone failure involving the loss of research-question continuity across an extended writing process. Despite extensive prior refinement, the agreed research questions were later absent from the evolving manuscript.

The research questions had originally been developed through multiple interactional episodes involving lexical, conceptual, and analytical revision. During this process, the author explicitly asked the AI to “ghi chú lại giùm mình cái final version RQs” (“note down the final version RQs for me”), and the AI reassured the author that it had “ghi nhớ rất kỹ” (“remembered it very carefully”).

However, after the Introduction, Literature Review, and Methodology sections had already been drafted, the author realised that the agreed research questions no longer appeared in the manuscript and asked: “Vậy thì theo bạn là mình có cần đưa cái research question vào đây không?” (“So do you think we should include the research questions here?”). The AI then acknowledged the omission and suggested reinserting the research questions into the Introduction.

This episode illustrates a breakdown in longitudinal structural continuity rather than the absence of prior planning. Although the AI actively participated in refining and operationalising the research questions, it did not independently preserve their structural integration as the manuscript evolved. The omission became visible only when the author reassessed alignment between the manuscript’s developing sections and its broader organisational architecture. Human attentiveness therefore functioned as an ongoing process of structural monitoring and coherence restoration across extended interactional activity.

Conceptual Backbone: Analytical Framework

At a deeper conceptual level, Case 4 reveals a more critical form of backbone instability involving the omission of the analytical framework, described by the author as the “hồn của paper” (“the conceptual core of the paper”). Here, backbone refers to the conceptual architecture sustaining the manuscript’s theoretical positioning, analytical direction, evidential organisation, and overall coherence across drafting cycles.

Throughout the writing process, the framework shaped the study’s contribution, analytical categories, coding procedures, and argumentative direction. During drafting interactions, the AI described the framework as “rất mạnh, đủ tầm Q1/Q2” (“very strong, potentially at the Q1/Q2 level”) and as the manuscript’s “signature contribution,” while editorial feedback from an ESP journal likewise identified it as one of the manuscript’s strongest features.

Despite this centrality, the framework was later discovered to be absent from the developing manuscript at a near-submission stage. The instability did not appear as an obvious local breakdown within individual sections. Instead, it accumulated gradually across drafting cycles and became visible only when the author recognised that the conceptual architecture underpinning the manuscript no longer remained integrated within the evolving draft.

Although the AI had actively participated in constructing and refining the framework, it did not independently maintain its longitudinal integration as the manuscript evolved. Reintegration occurred only after explicit human intervention and renewed alignment between the framework, research questions, analytical categories, and broader argumentative structure.

This episode demonstrates that AI may effectively support local conceptual elaboration while remaining less reliable in preserving higher-order conceptual continuity across extended interactional processes. Human attentiveness therefore became epistemically central because broader conceptual alignment required sustained monitoring of relationships between interconnected parts of the manuscript.

Together, Cases 3 and 4 demonstrate that backbone instability may emerge across multiple interconnected levels, ranging from structural disorientation to conceptual fragmentation. In both cases, the restoration of coherence depended on sustained forms of human attentiveness involving structural tracking, conceptual restoration, evaluative reassessment,

and longitudinal coherence management throughout the evolving writing process.

Iterative Co-Construction and Evidential Calibration

The analysis also showed that publishable analytical quality did not emerge automatically from fluent drafting alone.

In Case 5, the author initially observed that the Results section contained “many good ideas” but was still “thiếu cái dẫn chứng thực tế” (“lacking real empirical evidence”) and consisted of “từng đoạn... ngắn” (“short, fragmented paragraphs”). Although the draft appeared analytically promising at the local textual level, concerns remained regarding evidential depth, analytical distribution, and thematic integration.

In response, the AI proposed a claim–evidence–interpretation structure, explicitly recommending that each analytical paragraph move beyond thematic summary towards stronger empirical grounding. The interaction subsequently developed through multiple rounds of reassessment during which the author repeatedly questioned the adequacy of the evolving draft. These concerns involved thematic overload arising from “too many ideas,” weak transitions between analytical sections, and the potential misuse of percentage-based claims within qualitative analysis. When the author suggested introducing quantitative percentages to strengthen the Results section, the AI explicitly warned that unsupported quantification without systematic coding procedures or inter-rater reliability could expose the manuscript to methodological criticism from reviewers. The interaction therefore progressively shifted towards richer evidence integration and more carefully distributed qualitative interpretation.

Importantly, the interaction increasingly centred on negotiating standards of analytical legitimacy rather than merely improving textual fluency. The calibration process involved repeated reassessment of evidential adequacy, methodological defensibility, thematic organisation, and reviewer-oriented expectations of publishable qualitative research. Across these cycles, the author continuously re-evaluated and reorganised the developing analysis while the AI contributed suggestions, cautions, and structural alternatives in response.

This case therefore demonstrates that AI-assisted academic writing does not converge automatically towards publishable quality through fluent text generation alone. Instead, higher-level analytical adequacy emerged through recursive cycles of human evaluation, evidential redistribution, methodological negotiation, and interactional recalibration.

Positive Contributions of AI-Assisted Academic Writing

While the previous sections highlight recurrent limitations in AI-assisted academic writing, the analysis also demonstrates that AI can provide substantial forms of support throughout extended writing processes. Across the cases, these contributions primarily involved the externalisation, redistribution, and organisation of cognitive and analytical labour rather than the autonomous production of publishable writing itself. Importantly, however, the effectiveness of such support remained contingent on sustained human attentiveness, evaluative judgment, and conceptual direction.

Meta-Level Diagnostic and Research Planning Support

Case 6 illustrates the AI’s ability to provide rapid and structured evaluation of dataset adequacy. When asked whether five cases were sufficient, the AI responded that they were “sufficient to establish a clear analytical argument,” while also identifying a key limitation: the lack of balance between positive and negative cases.

The AI’s contribution lay not merely in speed, but in its capacity to synthesise the existing dataset, identify conceptual imbalance, and support higher-order research planning. Rather than replacing human judgment, the interaction redistributed evaluative labour by helping the writer engage more strategically with issues of dataset sufficiency, conceptual balance, and reviewer-oriented positioning.

Cognitive Load Redistribution in Data Processing

Case 7 highlights the role of AI in managing the practical demands of qualitative analysis. The author described the difficulty of simultaneously listening, transcribing, and segmenting interview data, noting that performing all tasks concurrently would take “tới Tết công gô” (an indefinite amount of time).

By delegating segmentation tasks to the AI, the author was able to focus more directly on interpretation and analytical judgment. AI effectively externalised organisational cognition by managing repetitive segmentation and distribution tasks, thereby freeing attentional resources for interpretation, coherence management, and higher-level analytical evaluation.

AI as Intellectual Structuring Support

Case 8 demonstrates the AI’s contribution at a more advanced level, extending beyond workflow support or surface-level drafting. In this case, conceptually relevant reviewer concerns had not yet been organised into a coherent argumentative sequence. The AI helped transform these concerns into a more structured set of writing objectives, including positioning the study within ESP needs analysis, identifying limitations in existing approaches, and developing a clearer pathway towards the proposed interaction-oriented model.

Rather than generating entirely new ideas, the AI contributed by reorganising relationships between existing concepts and supporting the development of a more coherent argumentative structure. However, the usefulness of this support remained interaction-dependent, requiring the author to evaluate, refine, and integrate the resulting structure into the broader conceptual organisation of the manuscript.

Together, these cases suggest that the positive contributions of AI-assisted academic writing are not reducible to text generation itself. Rather, AI contributed by supporting research planning, redistributing cognitive labour, externalising organisational cognition, and facilitating intellectual structuring within extended writing processes. At the same time, the effectiveness of these contributions remained fundamentally dependent on the writer's evaluative judgment and capacity to sustain conceptual coherence across the evolving manuscript.

Summary of Findings

Across the eight cases, AI-assisted academic writing emerged as an interaction-dependent process in which writing quality, coherence, and evidential adequacy were progressively negotiated through sustained human-AI engagement.

The findings demonstrate that AI can provide meaningful support for research planning, organisational work, cognitive load management, and intellectual structuring. At the same time, recurrent forms of instability—including false-positive evaluation, evidential insufficiency, structural omission, and conceptual fragmentation—emerged across extended drafting activity and were often not immediately visible at the local textual level.

Taken together, the findings suggest that the effectiveness of AI-assisted academic writing depends not solely on the capabilities of AI systems, but on the writer's ability to monitor, evaluate, and restore coherence across evolving manuscript development. Human attentiveness therefore functioned as a central stabilising mechanism through which broader forms of conceptual and evidential alignment were maintained over time.

Discussion

From Product to Process: Reframing AI-Assisted Academic Writing

This study examined AI-assisted academic writing from an interaction-oriented perspective, moving beyond approaches that focus primarily on textual outputs or ethical concerns surrounding AI use. The findings support a reconceptualisation of academic writing as an evolving interactional process in which textual development emerges through ongoing negotiation between human writers and AI systems.

The analysis demonstrates that AI-assisted writing unfolds through recursive patterns of evaluation, restructuring, interruption, reassessment, and redistribution of analytical work rather than through linear progression towards a stable final product. While process-oriented perspectives in EAP have long conceptualised writing as socially situated and recursively developed through revision and negotiation, the present findings extend these perspectives by showing how AI systems increasingly participate in shaping the organisation of writing activity itself [9,11]. In practice, this means that writing development increasingly depends on how writers manage, evaluate, and reorganise AI-generated material across multiple stages of manuscript construction.

Importantly, many of the most analytically significant phenomena identified in the study — including conceptual drift, delayed recognition of structural omission, evidential instability, and recalibration — became visible only across accumulated drafting history rather than within isolated textual outputs. This suggests that product-oriented approaches may obscure forms of instability emerging through extended AI-assisted writing activity.

From this perspective, AI-assisted writing involves more than generating fluent text. It also requires writers to maintain coherence, evidential grounding, and conceptual direction as manuscripts evolve through repeated interaction with AI systems.

Mechanisms of Limitation: Beyond Surface-Level Errors

A key contribution of this study lies in identifying recurrent mechanisms underlying the limitations of AI-assisted academic writing. Rather than treating AI shortcomings as isolated mistakes or occasional inaccuracies, the findings reveal systematic forms of instability that emerged repeatedly across extended writing processes.

First, the phenomenon of false-positive academic evaluation (Section 4.1) demonstrates that AI can generate rhetorically persuasive forms of feedback that do not necessarily remain aligned with broader disciplinary, analytical, or publication-related expectations. This suggests that local fluency and confidence in AI-generated evaluation should not be equated with reliable academic judgment.

Second, evidential thinness (Section 4.2) reveals a recurring gap between analytical fluency and evidential adequacy. While AI frequently produced coherent analytical claims, these did not consistently maintain sufficient empirical grounding or analytical depth. Rather than appearing as obvious factual error, the problem often emerged through the gradual weakening of evidential richness within otherwise persuasive academic prose.

Third, the backbone failures identified in Section 4.3 demonstrate a more fundamental form of longitudinal instability.

Across extended drafting cycles, key organising structures such as research questions and analytical frameworks became partially disconnected from the evolving manuscript. Because these disruptions did not necessarily produce immediate local incoherence, they often remained difficult to detect without sustained engagement across the broader writing process.

Finally, the findings reveal recurring patterns of iterative recalibration (Section 4.4), in which conceptual adequacy, evidential sufficiency, and analytical alignment required repeated renegotiation across drafting stages. Rather than progressing through stable linear development, AI-assisted writing frequently involved ongoing cycles of reassessment and refinement as the manuscript evolved.

Taken together, these findings suggest that the limitations of AI-assisted academic writing extend beyond surface-level textual inaccuracies. More fundamentally, they involve recurrent forms of conceptual, evidential, and organisational instability that emerge across prolonged interactional writing processes. This highlights the importance of examining AI-assisted academic writing not only in terms of output quality, but also in relation to the mechanisms through which coherence, alignment, and analytical adequacy are maintained—or destabilised—over time.

Human Attentiveness and the Maintenance of Conceptual Coherence

Across the findings, the stability of AI-assisted academic writing depended fundamentally on sustained human attentiveness throughout the evolving writing process. While AI contributed to drafting, evaluation, organisational refinement, and argument structuring, the maintenance of conceptual coherence across the manuscript remained dependent on continuous human monitoring and intervention.

Importantly, the findings suggest that human attentiveness operated through several interconnected forms of evaluative activity rather than through general supervision alone. Structurally, attentiveness involved maintaining alignment between research questions, analytical categories, theoretical framing, and overall manuscript organisation across extended drafting cycles. At the conceptual level, it involved preserving continuity between claims, evidence, and argumentative direction as the manuscript evolved through repeated revision and restructuring. Evidentially, attentiveness involved reassessing whether analytical claims remained sufficiently grounded, adequately supported, and appropriately calibrated in relation to the developing dataset. Longitudinally, it involved tracking coherence across interactional history, including the delayed recognition of omissions, conceptual drift, and emerging instability that were not always immediately visible at the local textual level.

The findings further suggest that these forms of attentiveness were enacted recursively throughout sustained human–AI interaction rather than appearing only in isolated moments of correction. Across the cases, the writer repeatedly identified conceptual drift, recognised omitted organisational structures, challenged locally persuasive yet analytically insufficient evaluations, and restored alignment between interconnected parts of the evolving manuscript. In this sense, attentiveness functioned less as episodic error correction than as an ongoing process of coherence management and evaluative regulation within an interaction-dependent writing environment.

Crucially, many of the instabilities identified in the study did not emerge as immediately visible breakdowns at the surface level of text production. Instead, they accumulated gradually across drafting cycles while remaining partially masked by fluent and rhetorically persuasive AI-generated responses. As a result, problems often became visible only after multiple rounds of drafting and revision. This increased the importance of sustained attentional engagement with the broader trajectory of manuscript development rather than with isolated interactional moments alone. Importantly, the findings do not suggest that such attentiveness reflects an exceptional characteristic of a particular writer. Rather, the interactional conditions of prolonged AI-assisted writing may themselves generate forms of delayed instability, conceptual drift, and partial incoherence that require ongoing evaluative monitoring across extended drafting activity.

Taken together, these findings suggest that human attentiveness in AI-assisted academic writing is not merely a supplementary or supervisory activity, but an epistemically central process through which conceptual continuity, evidential adequacy, and longitudinal coherence are actively maintained throughout evolving human–AI co-construction.

AI Support and the Redistribution of Cognitive and Organisational Labour

While the findings reveal important forms of instability in AI-assisted academic writing, they also demonstrate that AI can substantially reshape how writing labour is organised throughout extended drafting processes. Rather than functioning simply as a text generator, AI frequently operated as a system for redistributing cognitive and organisational workload within the writing process.

Across the cases, AI contributed to a range of activities, including research planning, organisational support, workflow management, and intellectual structuring. These forms of support allowed certain cognitive and organisational tasks to be externalised, enabling greater attentional focus on interpretation, evaluative judgment, and conceptual integration.

Importantly, however, the value of this support did not derive from autonomous AI reasoning. Rather, its effectiveness depended on the writer's ability to evaluate relevance, assess adequacy, and integrate AI-assisted restructuring into the

broader development of the manuscript. AI therefore functioned less as a replacement for human expertise than as a resource for reorganising how cognitive and analytical labour was distributed across the writing process.

The findings therefore suggest that AI-assisted academic writing involves not merely the automation of writing tasks, but a redistribution of cognitive and organisational labour across human–AI interaction. As AI systems increasingly support local drafting and organisational processes, the writer's role may shift towards maintaining broader conceptual integration and coherence across the evolving manuscript.

Towards a Co-Constructed Model of AI-Assisted Academic Writing

Bringing these findings together, this study proposes a co-constructed model of AI-assisted academic writing in which AI contributes substantially to local writing development while broader conceptual integration remains dependent on sustained human evaluative regulation.

Across the cases, AI supported multiple dimensions of writing activity, including organisational assistance, workflow acceleration, argument structuring, evaluative feedback, and the externalisation of cognitive and analytical labour. These forms of support frequently enhanced local productivity and facilitated the rapid development of textual and organisational material within particular stages of manuscript construction.

At the same time, however, the findings demonstrate that local textual success did not consistently ensure broader conceptual integration across the evolving manuscript. Recurrent forms of instability — including conceptual drift, evidential imbalance, delayed omission, and structural fragmentation — repeatedly emerged despite the apparent fluency and sophistication of AI-assisted support. The model therefore positions AI as locally productive but not independently stabilising. While AI can meaningfully support the generation, organisation, and refinement of academic writing, the maintenance of broader conceptual coherence remains dependent on sustained human attentiveness across the evolving manuscript.

From this perspective, the central challenge of AI-assisted academic writing may shift away from producing linguistically fluent discourse towards maintaining conceptual continuity, evidential integration, and coherence across extended drafting activity. This co-constructed model therefore reframes academic writing as a distributed interactional process in which AI contributes substantially to local development while human writers remain epistemically responsible for sustaining broader intellectual organisation over time.

Conclusion

This study examined AI-assisted academic writing from an interaction-oriented perspective, focusing on how academic manuscripts develop through sustained engagement between a human writer and an AI system across extended drafting activity. Moving beyond product-oriented evaluations of AI-generated text, the findings showed that writing quality emerged through ongoing processes of evaluation, revision, evidential negotiation, and coherence management throughout manuscript development.

The analysis revealed that some of the most significant challenges in AI-assisted writing—including conceptual drift, evidential instability, structural omission, and delayed recognition of incoherence—became visible not within isolated outputs, but across accumulated interactional history over time. These findings suggest that the central challenge of AI-assisted academic writing may lie less in text generation itself than in maintaining broader conceptual integration across evolving writing processes.

More broadly, the study argues that human writers remain epistemically central within AI-assisted academic writing. As AI systems become increasingly capable of generating fluent and persuasive academic discourse, the maintenance of conceptual continuity, evidential adequacy, and analytical alignment continues to depend on sustained forms of human attentiveness and evaluative judgment. In this sense, AI-assisted writing is best understood not as autonomous text production, but as a co-constructed process in which human writers play a critical role in sustaining intellectual coherence over time.

These findings contribute to ongoing discussions in EAP, academic literacy, and researcher development by highlighting the importance of evaluative attentiveness and longitudinal coherence management within AI-mediated writing environments.

Despite its contributions, the study is based on a single longitudinal dataset situated within a specific writing context and does not aim for broad statistical generalisation. Future research may extend this line of inquiry by examining how comparable interactional dynamics emerge across different writers, disciplines, institutional contexts, and forms of AI-assisted academic activity.

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