RESEARCH ARTICLE

The Linguistic Characteristics of ChatGPT-Assisted Academic Writing in Higher Education: A Lexico-Grammatical and Discourse-Analytical Perspective in EFL Contexts

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Abstract

The accelerated integration of artificial intelligence–based tools into higher education has fundamentally reshaped academic writing practices, particularly within English as a Foreign Language (EFL) context. Among these technologies, ChatGPT has emerged as a widely adopted generative language model capable of supporting text production, revision, and organization at a level that closely resembles human academic writing. While existing research has largely emphasized pedagogical effectiveness, learner perceptions, and ethical concerns, comparatively limited attention has been devoted to the linguistic properties of ChatGPT-assisted academic texts. This conceptual and literature-based study examines the linguistic features of ChatGPT-assisted writing in higher education, with a specific focus on lexico-grammatical patterns, syntactic complexity, discourse organization, and stylistic tendencies observable in AI-supported academic texts. Drawing on recent empirical and theoretical studies in applied linguistics and educational technology, the article synthesizes current findings to explore how ChatGPT influences language production, coherence, stance-taking, and the expression of authorial voice in academic writing. The analysis suggests that ChatGPT-assisted texts tend to exhibit high levels of grammatical accuracy, cohesive discourse markers, and conventional academic structures, which may enhance clarity and formal appropriateness, especially for EFL learners. However, these advantages are accompanied by potential limitations, including stylistic homogeneity, reduced individuality, and a tendency toward formulaic expression. The study argues that ChatGPT does not replace human authorship but rather reshapes linguistic output through mediated interaction between human writers and AI systems. The article concludes by discussing the implications of these linguistic characteristics for academic writing instruction, assessment, and research, and calls for further corpus-based and discourse-analytical studies to better understand the long-term impact of AI-mediated writing on academic communication in higher education.

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Introduction

The increasing use of artificial intelligence (AI) technologies in higher education has reshaped traditional approaches to teaching and learning, particularly in the domain of academic writing. AI-driven tools are no longer limited to grammar correction or spell-checking but now actively participate in text generation, revision, and organization. Among these technologies, ChatGPT has emerged as a prominent tool capable of producing extended, coherent texts that resemble human-authored academic writing. This development has generated substantial interest in understanding how AI-assisted writing influences linguistic production in academic contexts, especially as such tools become increasingly accessible to university students.

Recent studies indicate that ChatGPT-assisted writing can support learners in generating ideas, structuring arguments, and refining linguistic accuracy, particularly for EFL students in higher education (Tsai et al., 2024; Seo, 2024). By providing immediate linguistic input and alternative formulations, ChatGPT may reduce cognitive load during writing and facilitate engagement with complex academic tasks. At the same time, concerns have been raised regarding authorship, originality, and ethical responsibility in AI-mediated writing practices (Zohouri et al., 2024). These concerns highlight the need to distinguish between the supportive role of AI tools and the risk of over-reliance on machine-generated language.

While much of the existing research focuses on pedagogical effectiveness, instructional design, and learner perceptions of AI-assisted writing, fewer studies adopt a linguistic lens to examine the textual characteristics of AI-supported academic texts. From a linguistic perspective, academic writing is shaped by specific conventions related to lexis, syntax, discourse organization, and stance-taking. The integration of ChatGPT into academic writing processes therefore raises important questions about how these linguistic features are realized, reproduced, or transformed in AI-assisted texts.

Empirical evidence suggests that ChatGPT-generated or ChatGPT-supported writing displays distinctive patterns in vocabulary choice, sentence complexity, and discourse cohesion when compared to human-authored texts (Bašić et al., 2023; Wu, 2025). Such patterns may contribute to increased clarity and formal accuracy, yet they may also result in stylistic uniformity and reduced authorial voice. These tendencies warrant systematic linguistic analysis in order to understand the broader implications of AI-mediated writing for academic communication.

This article adopts a linguistic and literature-based approach to examine the features of ChatGPT-assisted writing in higher education. By synthesizing recent studies on AI-assisted academic writing, the paper aims to identify recurring linguistic tendencies associated with ChatGPT use and to discuss their implications for academic communication. Rather than evaluating ChatGPT solely as a pedagogical tool, the study foregrounds its impact on language form, structure, and discourse practices, contributing to ongoing discussions on the role of artificial intelligence in shaping contemporary academic writing.

ChatGPT-Assisted Writing in Higher Education: A Linguistic Framework

The use of ChatGPT in higher education has been explored across diverse instructional settings, particularly in EFL writing courses. Research demonstrates that AI-assisted writing environments provide learners with immediate linguistic input, enabling them to revise texts more efficiently and experiment with alternative expressions (Özdere, 2025; VERI & Fitria, 2024). From a linguistic standpoint, such interaction with AI-generated language exposes learners to standardized academic structures, cohesive devices, and formulaic expressions commonly used in scholarly writing. This repeated exposure may contribute to greater familiarity with academic registers and support the development of formal writing conventions. However, the linguistic influence of ChatGPT extends beyond surface-level correction. Studies comparing AI-assisted and traditional writing approaches reveal differences in sentence construction, lexical density, and

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discourse coherence (Begmatova & Saydazimova, 2025). These findings suggest that ChatGPT does not merely support writing mechanically but actively shapes linguistic output through its probabilistic language generation mechanisms. As a result, AI-assisted texts often display consistent grammatical patterns and cohesive organization, reflecting the model's tendency to reproduce dominant academic norms embedded in its training data.

In addition, the integration of ChatGPT into digitally mediated learning environments aligns with broader trends in technology-enhanced language education (Ismayilli & Nuri, 2025). Digital platforms and AI tools increasingly mediate how learners access, process, and produce academic language. Within this context, academic writing becomes a dynamic space where human linguistic competence intersects with machine-generated language, leading to hybrid forms of textual production that blend human intention with algorithmically generated structures. This intersection invites closer linguistic scrutiny, particularly with regard to how linguistic norms are negotiated, reproduced, or potentially transformed in AI-assisted texts. While ChatGPT can model well-formed academic language, its outputs tend to favor generalized and decontextualized patterns of expression. Learners may therefore adopt linguistically appropriate but rhetorically neutral forms, which raises questions about the development of authorial voice and disciplinary specificity in academic writing. From a linguistic perspective, ChatGPT-assisted writing should be understood not as a replacement for human language production but as a mediating resource that influences how language is formulated and organized. Learners remain active agents in selecting, adapting, and integrating AI-generated language into their texts. Consequently, any linguistic framework for analyzing ChatGPT-assisted writing must account for both the structural features of AI-generated language and the ways in which learners appropriate these features within academic discourse.

Linguistic Features of ChatGPT-Assisted Writing in Higher Education

The integration of ChatGPT into academic writing practices has introduced a new form of language mediation in higher education, particularly in EFL contexts where learners often rely on external support to meet academic language standards. From a linguistic perspective, ChatGPT-assisted writing exhibits distinctive features at lexical, syntactic, and discourse levels, reflecting the model's training on large-scale academic and semi-academic corpora. Rather than functioning merely as a corrective or supportive tool, ChatGPT actively shapes textual production by influencing lexical selection, sentence construction, and discourse organization. This form of AI-mediated writing represents a shift in how academic language is accessed and produced. Learners interact with machine-generated linguistic models that implicitly encode dominant academic norms, thereby affecting how meaning is formulated and structured in texts. As a result, ChatGPT-assisted writing can be understood as a hybrid linguistic process in which human cognitive intentions intersect with algorithmically generated language patterns.

One of the most salient linguistic characteristics of ChatGPT-assisted writing is its tendency toward high-frequency academic lexis and formulaic expressions. Studies indicate that AI-assisted texts often display increased lexical density and a preference for neutral, standardized academic vocabulary, including commonly used abstract nouns, evaluative adjectives, and transitional markers (Tsai et al., 2024; Bašić et al., 2023). Such lexical choices contribute to surface-level fluency, coherence, and readability, particularly for EFL students who may experience difficulty selecting appropriate academic vocabulary independently. At the same time, this lexical consistency reflects the probabilistic nature of AI language generation, which prioritizes widely attested lexical patterns over less frequent or stylistically marked alternatives. Consequently, ChatGPT-assisted texts may rely heavily on generalized academic expressions that align with a broad, discipline-neutral register. While this supports conformity to academic norms, it may also obscure disciplinary specificity and contextual nuance. This lexical uniformity can result in reduced originality and limited semantic depth. Although ChatGPT exposes learners to discipline-general academic vocabulary, it may insufficiently represent field-specific terminology or culturally embedded lexical variation, which are crucial for advanced academic writing (Seo, 2024). As a result, AI-assisted texts may appear linguistically polished yet stylistically homogeneous, reflecting a convergence toward a standardized academic voice. From a linguistic standpoint, this phenomenon suggests that ChatGPT reinforces dominant lexical norms of academic English, potentially narrowing the range of lexical experimentation in learner writing. Nevertheless, when used strategically, AI-generated lexical input can function as a valuable scaffolding tool, supporting vocabulary development by modeling appropriate collocations, lexical bundles, and phraseological patterns, especially during early drafting and revision stages (VERI & Fitria, 2024).

At the syntactic level, ChatGPT-assisted writing is characterized by relatively stable sentence complexity and well-formed clause structures. Corpus-based comparisons between human-authored and AI-generated texts reveal that ChatGPT

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tends to favor syntactically complete sentences with clear clause boundaries, consistent subject–predicate relationships, and limited structural ambiguity (Wu, 2025). These features contribute to grammatical accuracy and overall textual coherence, which are particularly beneficial for learners whose syntactic competence is still developing. However, the syntactic patterns produced by ChatGPT frequently reflect a preference for moderately complex constructions rather than highly elaborate or rhetorically marked structures. While subordinate clauses, passive constructions, and nominalizations are regularly employed, excessive syntactic embedding and stylistic variation are generally avoided. This results in texts that are grammatically sound and accessible but occasionally lack rhetorical emphasis or syntactic diversity. Research comparing traditional and AI-assisted instruction suggests that sustained reliance on ChatGPT may lead learners to internalize these standardized syntactic patterns without fully developing independent control over more complex grammatical choices (Begmatova & Saydazimova, 2025). From a linguistic perspective, this raises important questions about long-term syntactic development and the extent to which AI-mediated input supports deep grammatical acquisition as opposed to surface-level accuracy and fluency.

Beyond lexis and syntax, ChatGPT-assisted writing demonstrates a strong alignment with conventional academic discourse structures. AI-supported texts typically follow predictable organizational patterns, including clearly defined introductions, logically sequenced body paragraphs, and explicit conclusions. This discourse regularity corresponds with findings that ChatGPT effectively models genre-specific conventions of academic writing, such as argumentative progression, paragraph unity, and cohesive signaling (Özdere, 2025). This discourse-level consistency can be particularly advantageous for EFL students who are unfamiliar with academic genre expectations. By providing implicit organizational templates, ChatGPT assists learners in structuring arguments, maintaining coherence, and adhering to formal academic conventions (Seo, 2024). Such support may reduce cognitive demands associated with discourse planning and enable learners to focus on content development. However, this same predictability may limit the development of authorial voice and rhetorical individuality. AI-assisted texts often prioritize clarity and cohesion over stylistic distinction, resulting in discourse that is conventionally appropriate but rhetorically neutral. Over time, this may contribute to the homogenization of academic writing styles, particularly in contexts where learners rely heavily on AI-generated discourse models. Moreover, ethical and linguistic concerns emerge when AI-generated discourse closely mirrors canonical academic styles without transparent markers of authorship. Zohouri et al. (2024) argue that such convergence raises questions about originality, ownership, and academic integrity. From a linguistic viewpoint, these concerns underscore the importance of critically examining how discourse norms are reproduced, standardized, and potentially institutionalized through AI-mediated writing practices.

Overall, ChatGPT-assisted writing in higher education represents a hybrid linguistic phenomenon in which human communicative intentions interact dynamically with machine-generated language. The lexical precision, syntactic stability, and discourse coherence observed in AI-assisted texts highlight ChatGPT's capacity to model academic English effectively and to support learners in meeting formal writing standards. At the same time, these linguistic features reveal tendencies toward standardization, uniformity, and reduced stylistic variation. Understanding these characteristics is essential for evaluating the role of AI in academic writing beyond pedagogical effectiveness. A linguistic analysis of ChatGPT-assisted writing provides valuable insight into how emerging technologies reshape language use, academic norms, and the evolving boundaries between human and machine authorship in higher education contexts.

Discussion

The linguistic analysis of ChatGPT-assisted writing in higher education demonstrates that AI-mediated text production introduces both continuity and change in academic language practices. At the lexical and syntactic levels, ChatGPT-supported texts tend to align closely with established norms of academic English, offering grammatically accurate and structurally coherent output. This alignment can be particularly advantageous for EFL learners, as it provides sustained exposure to standardized academic forms and reduces surface-level linguistic errors that often hinder effective written communication. In this respect, ChatGPT functions as a powerful linguistic mediator that facilitates access to conventional academic language patterns. However, the findings also suggest that the linguistic uniformity of ChatGPT-assisted writing may limit stylistic variation and the development of authorial individuality. While AI-generated language supports clarity, cohesion, and formal accuracy, it may simultaneously encourage reliance on formulaic expressions and predictable discourse structures. From a linguistic perspective, this raises important questions about the balance between linguistic support and independent language production, particularly in advanced stages of academic writing where originality and rhetorical positioning are expected. The interaction between human writers and AI tools thus reflects a

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hybrid process in which linguistic competence is shaped through both imitation of dominant norms and selective adaptation to communicative goals. Moreover, the role of ChatGPT in shaping discourse organization highlights the need to reconsider traditional notions of authorship and agency in academic writing. As AI tools increasingly participate in the construction and refinement of academic texts, the linguistic boundaries between human-generated and machine-assisted language become less distinct. This blurring of boundaries challenges conventional understandings of authorship, originality, and textual ownership, especially in contexts where AI-generated language closely approximates accepted academic styles.

From a broader linguistic standpoint, these developments call for a nuanced understanding of how academic norms are reproduced, negotiated, and potentially transformed through AI-mediated writing practices. Rather than viewing ChatGPT-assisted writing as a threat to academic integrity or linguistic development, it may be more productive to conceptualize it as an emerging form of mediated language use that reshapes academic discourse while still relying on human judgment, intention, and responsibility.

Conclusion

This study has examined the linguistic features of ChatGPT-assisted writing in higher education from a language-focused perspective, emphasizing its implications for academic English use in EFL contexts. The analysis demonstrates that ChatGPT functions as more than a technical writing aid, actively shaping linguistic output at lexical, syntactic, and discourse levels. By modeling standardized academic forms, AI-assisted writing can enhance grammatical accuracy, textual coherence, and adherence to conventional academic norms. At the same time, the findings reveal that reliance on ChatGPT-assisted writing may contribute to linguistic uniformity and reduced stylistic diversity. While AI-generated language supports clarity and formal correctness, it may limit opportunities for developing authorial voice and independent rhetorical control. These outcomes highlight the need to approach AI-assisted writing with a critical linguistic awareness that recognizes both its affordances and its constraints. By adopting a linguistic rather than purely pedagogical lens, this article contributes to ongoing discussions about the evolving role of artificial intelligence in academic communication. Understanding how AI tools mediate language production is essential for evaluating their long-term impact on academic writing practices and linguistic development in higher education. Future research may benefit from longitudinal and corpus-based approaches to further investigate how sustained interaction with ChatGPT influences linguistic competence, discourse practices, and the boundaries between human and machine authorship.

Ethical Considerations

This study is based on a conceptual analysis and a review of existing scholarly literature. No human participants, personal data, or experimental interventions were involved. Therefore, ethical approval was not required. The authors adhere to academic integrity principles and ensure appropriate citation and acknowledgment of all referenced sources.

Author Contributions

Alaviyya Bahruz Nuri contributed to the conceptualization of the study, literature review, theoretical framework, and drafting of the manuscript.
Turkan Mehraj Ismailli contributed to the linguistic analysis, critical revision of the manuscript, and refinement of academic style and structure.
Both authors reviewed and approved the final version of the manuscript.

Conflict of Interest. The authors declare that there is no conflict of interest regarding the publication of this article.

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