

THE ROLE OF DIGITAL TOOLS: GRAMMARLY AND AI-BASED WRITING ASSISTANTS IN ACADEMIC WRITING

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This article explores the role of digital tools, particularly Grammarly and AI-based writing assistants, in academic writing. With the rapid advancement of technology, these tools have become increasingly popular among students and researchers for improving the quality of written work. The study examines their effectiveness in enhancing grammar, vocabulary, coherence, and overall writing performance. It also discusses potential limitations, including over-reliance, reduced critical thinking, and issues related to academic integrity. The findings suggest that while digital writing assistants can serve as valuable support tools, their use should be balanced with the development of independent writing skills. The article concludes by emphasizing the importance of integrating these technologies responsibly into academic practice.

Introduction. The rapid expansion of digital technologies has transformed academic writing practices across higher education. Among these technologies, AI-based writing assistants such as Grammarly and similar automated tools have gained significant attention for their potential to support writing development, improve linguistic accuracy, and enhance

students' confidence in academic composition. For master's level students, who are expected to produce complex, well-structured, and linguistically accurate texts, the integration of such tools into the writing process has become increasingly relevant. This article explores the pedagogical role of Grammarly and other AI-based writing assistants in academic writing, examining their benefits, limitations, and implications for effective writing instruction.

Understanding AI-Based Writing Assistants. AI-based writing assistants are digital tools that use natural language processing (NLP), machine learning, and large linguistic corpora to analyze written texts and provide automated feedback. Grammarly, one of the most widely used tools, offers suggestions related to grammar, spelling, punctuation, vocabulary, tone, and clarity. Similar AI writing assistants include ProWritingAid, QuillBot, and integrated AI systems in word processors. These tools function as formative feedback systems that provide immediate, individualized responses to users' writing. According to Hyland (2019), timely feedback plays a crucial role in writing development because it helps learners notice linguistic gaps and refine their output. AI tools attempt to automate this feedback loop, thus supporting independent learning and self-revision practices.

Pedagogical Functions of Grammarly in Academic Writing. Grammarly serves several important pedagogical functions that are particularly beneficial for graduate-level learners. First, it acts as a grammar and mechanics checker, identifying surface-level errors that might otherwise distract from content quality. Second, it provides lexical and stylistic suggestions, helping writers produce more precise and formal academic language. Third, Grammarly includes plagiarism detection and citation support, which are essential for maintaining academic integrity in research writing. Research indicates that automated writing evaluation tools can enhance students' awareness of language forms and reduce recurring errors (Stevenson & Phakiti, 2019). By offering explanations alongside corrections, Grammarly encourages metalinguistic reflection rather than passive correction, thereby contributing to language learning.

AI Writing Assistants and the Writing Process. The role of AI writing assistants can be better understood when viewed through the stages of the writing process: planning, drafting, revising, and editing. During drafting, students often struggle with sentence construction and lexical selection. AI tools assist by suggesting alternative expressions and improving coherence. In the revision stage, the tool highlights unclear or wordy sentences, encouraging writers to refine their ideas. However, scholars emphasize that these tools should not replace critical thinking or content development. Flower and Hayes' (1981)

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cognitive process model of writing highlights that writing involves planning, translating, and reviewing processes that require active decision-making. AI assistants mainly support the reviewing stage; they do not generate original ideas or conceptual frameworks in academic argumentation.

Benefits of Grammarly and AI-Based Writing Assistants. One of the primary advantages of AI writing tools is increased learner autonomy. Students can independently check their writing multiple times without waiting for teacher feedback. This continuous access to feedback promotes self-regulated learning and revision skills (Ranalli, 2018). Another benefit is improved linguistic accuracy. Graduate students, especially non-native English speakers, often face challenges in grammar and academic style. AI tools reduce these barriers by offering instant corrections and suggestions. As a result, students can focus more on content quality and critical analysis rather than surface-level errors. Furthermore, AI writing assistants support confidence building. When students receive immediate feedback and observe improvement in their writing, they become more motivated to engage in academic tasks. Studies show that digital feedback tools can positively influence learners' writing self-efficacy and reduce writing anxiety (Li, Link, & Hegelheimer, 2015).

Limitations and Challenges. Despite their advantages, AI writing assistants have notable limitations. One major concern is overreliance. If students depend excessively on automated corrections, they may not fully internalize grammatical rules or develop independent editing skills. Teachers therefore need to guide students in using these tools critically rather than passively accepting all suggestions. Another limitation is contextual accuracy. AI tools may misinterpret complex academic arguments or discipline-specific terminology, leading to inappropriate corrections. Ethical issues also arise regarding authorship and originality. While Grammarly primarily focuses on editing, more advanced AI writing assistants can generate text, raising questions about academic honesty (Bretag, 2022).

Role in Developing Academic Writing Skills. From a pedagogical perspective, AI writing assistants' function as scaffolding tools within Vygotsky's sociocultural theory. They provide immediate support within learners' zone of proximal development, enabling them to perform writing tasks more effectively than they could independently (Vygotsky, 1978). As learners repeatedly engage with automated feedback, they gradually internalize linguistic patterns and improve their writing competence. Moreover, these tools encourage iterative revision, which is a key characteristic of expert academic writers. Revision is not merely error correction but a process of refining arguments, improving coherence, and

enhancing clarity. AI feedback prompts students to revisit their drafts multiple times, leading to more polished academic texts.

Implications for Master’s Level Writing Instruction. For master’s degree programs, where academic writing standards are particularly high, integrating Grammarly and AI writing assistants into instruction can be beneficial when used strategically. Teachers can incorporate these tools as supplementary feedback mechanisms while maintaining their role in providing higher-order feedback related to argumentation, structure, and critical analysis. Instructors should also provide explicit training on how to interpret AI feedback critically. Reflective use ensures that technology supports learning rather than replacing cognitive engagement.

Conclusion. In contemporary higher education, Grammarly and AI-based writing assistants play an increasingly important role in supporting academic writing. They enhance linguistic accuracy, promote learner autonomy, and provide immediate formative feedback, which is particularly valuable for graduate students working on complex academic texts. However, their effectiveness depends on critical and responsible use. These tools should complement, not replace, cognitive writing processes and teacher feedback. When integrated thoughtfully into writing pedagogy, AI writing assistants can function as powerful scaffolding tools that help master’s students refine their academic voice and meet the high standards of scholarly writing.

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