The Impact of Artificial Intelligence on Writing and Speaking Practices among EMI and ESL Students: Sociolinguistic and Pragmatic Perspectives

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Abstract

The rapid integration of language tools powered by artificial intelligence (AI) into higher education has introduced significant cognitive, pedagogical and sociolinguistic implications, particularly for non-native English-speaking university students. This study investigates the evolving impact of AI-assisted writing and speaking tools on second language (L2) development within the academic context. The article is grounded in applied linguistics and second language acquisition theory and examines how sustained reliance on AI-generated language support may influence the learners' linguistic competence, conceptual understanding, cognitive processing, critical thinking and academic voice. Moreover, it analyzes the potential alterations in lexical precision, grammatical accuracy and pragmatic awareness in AI-mediated academic text and speech generation. Using a mixed-methods design, the study will combine quantitative and qualitative analyses. The findings aim to clarify whether AI primarily performs the role of a scaffold that promotes language development (Vygotsky, 1978) or that of a compensatory mechanism that may inhibit deeper cognitive and linguistic processing (Swain, 1985). By placing AI within existing frameworks of second language acquisition, academic discourse development and language pedagogy, the research contributes empirical evidence to ongoing debates that regard AI integration in higher education. Additionally, the study offers pedagogical recommendations for educators and policymakers seeking to optimize AI-assisted learning while reducing the potential negative impacts on language acquisition, conceptual understanding, cognitive processing and critical thinking.

Keywords: *AI-assisted language learning, digital communication, cognitive processing and critical thinking, writing and speaking techniques*

Introduction

In today's digital era, artificial intelligence has become an indispensable agent in digital communication, fundamentally altering the linguistic and the sociolinguistic conditions in which language is produced and identity is conveyed. Systems such as large language models, predictive text engines and smart-reply tools no longer serve as mere supplementary mechanisms for human expression; they function as co-producers of discourse, tangibly influencing and oftentimes directly shaping the speaker's lexical choice, syntactic structure, emotional tone and the social meanings embedded in language (Hohenstein et al., 2023; Hancock, Naaman, & Levy, 2020).

This article examines the emerging processes and subsequent transformations from the perspectives of sociolinguistics, applied linguistics and second language acquisition, paying particular attention to the implications of AI integration for language: the lexical choices speakers and writers make, the syntactic structures they construct and the discursive voice they are able to maintain.

The paper consists of four sections. The first section examines how AI reallocates communicative power and reshapes processes of self-representation in everyday written language. The second section explores the measurable effects of AI-assisted writing on sentence structure and lexical efficiency. In the third section the paper investigates the issue of cognitive offloading and the eventual implications of delegating linguistic decision-making to machine systems. Ultimately, the fourth part of the study focuses on learners in English-medium instruction (EMI) and English as a second language (ESL) contexts, students for whom AI may simultaneously function as a cognitive scaffold and as a potential substitute for the development of linguistic competence.

All four perspectives pointed out above address one central question: whether AI supports the developmental processes through which language is acquired and individual voice is formed, or whether AI progressively replaces them.

Artificial Intelligence and the Reshaping of Communicative Power and Practices

When discussing AI and human communication in terms of linguistic interface, the concept of asymmetrical accommodation, an extension of Giles' (1973) *Communication Accommodation Theory*, is central in providing the most productive analytical insight for understanding human-AI linguistic interaction. In human interaction, the adjustment is normally bidirectional, meaning that interlocutors mutually adjust their language in response to social signals such as the tone, gestures, word choice, conversational context and so on. However, human-machine interaction may partially or sometimes completely disrupt this symmetry. Users routinely simplify their syntax, over-articulate their pronunciation and limit their lexical range in order to accommodate the perceived limitations of the system; the system, however, accommodates only within the parameters set by its training data and operational design. Consequently, one party continually adapts while the other sets the terms of intelligibility (Mieczkowski et al., 2021). This kind of continuous imbalance may substantially alter the existing communicative norms, gradually restricting the range of expression that people feel comfortable or willing to use.

Analyzing real-life scenarios, smart-reply systems such as Gmail's AI-generated response suggestions represent one of the most invasive, prevalent and empirically well-documented sources of AI influence on everyday written language. Hohenstein et al. (2023) demonstrated, in a large-scale study, that the use of such suggestions can indeed systematically increase the positivity of message content, however, it imposes the risk of simultaneously reducing the variation in word choice among users. Algouzi and Alzubi (2023) extend this finding to cross-cultural contexts, documenting the loss of culturally specific linguistic markers as users rely on AI-provided templates. From the sociolinguistic perspective, the implications are tangible: every individual choice to accept a suggested reply represents a small contribution to the homogenization of written English (Jean, 2023). Eventually, this mechanism leads to a subtle and a gradual form of standardization.

The present discussion incorporates the affective dimension of AI-mediated text, which is an important component of this study. Research conducted at the Max Planck Institute confirms that AI-mediated communication tends to be more polite, more concise and more positive than that of natural spontaneous communication. Hohenstein et al. (2023) confirm this pattern across various communicative settings, showing that the positivity preference introduced by suggested language persists even when users believe they are writing independently. This reveals a central paradox; the same features that make AI-generated language tempting — fluency, a controlled tone and reduced communicative friction, may also weaken the authenticity of the messages it produces. As written communication becomes noticeably smooth and polite, the distinctive elements of individual voice, such as rhythm, idiomatic usage and lexical preference, tend to decrease.

One of the most significant dimensions of AI's sociolinguistic influence is the unpredictable rearrangement of communicative power, which happens when AI systems provide generated templates through which institutional communication is conducted. This can lead to a significant extension and alteration of dominant normative forms (Massaad, 2025). In professional and legal settings, where AI may assume responsibility for approximately 70 to 80 per cent of routine document drafting, such systems pose a high risk of becoming central mechanisms for the production and reproduction of institutional knowledge, potentially reallocating traditional authority while simultaneously concentrating linguistic power in the hands of those who design and deploy them (Lardy, 2024).

Ultimately, these findings describe a substantial sociolinguistic transformation. Artificial intelligence has become a fundamental participant in the production of contemporary discourse, reorganizing lexical choice, syntactic form and emotional tone. Its presence alters the dynamics through which identity is shaped in writing, and redesigns the conditions in which linguistic diversity is maintained.

Sentence Length and Lexical Conciseness Affected by AI

Having increasingly influenced the English language, the recent technological advancements in the context of digital communication have had their impact not only on sociolinguistic capacity and communicative self-

representation but also on sentence complexity and lexical conciseness. The emergence of Artificial Intelligence (AI), particularly generative AI systems such as OpenAI's ChatGPT, publicly released in November 2022 (OpenAI, 2022), has introduced an unprecedented dimension to linguistic transformation. Since its release, AI has remarkably affected the ways individuals produce and consume language in online environments. Its influence can already be observed in vocabulary expansion, increased linguistic conciseness, automated grammar correction, stylistic standardization and the growing use of AI-assisted communication in academic, professional and everyday contexts. Recent research has emphasized that AI-powered language models are reshaping digital discourse and altering human interaction with written language (Brown et al., 2020).

In this section, the paper addresses the impact of Artificial Intelligence on the English language, with particular attention to changes in vocabulary, grammar, conciseness and digital communication practices in our days. As outlined above, a central focus of this research is the impact of artificial intelligence on syntactic organization and lexical efficiency in written English. According to findings presented by Karolina Rudnicka (2025), AI-supported writing systems such as ChatGPT and Grammarly consistently generate outputs that are more compact with shorter sentence length and lower levels of lexical repetition. An important element here is that these patterns are also evident in texts that are produced by native speakers and sourced from contemporary corpora, indicating that the observed changes are not restricted to new language learners but encompass broader processes of text adjustment and language optimization.

The empirical basis of the study consists of a case analysis involving one hundred randomly selected sentences drawn from the Corpus of Contemporary American English, a comprehensive corpus of modern American English spanning the period 1990–2019 and consisting of multiple registers, including academic prose, fiction, journalism, blogs, spoken discourse and digital communication. Through systematic comparison of original and AI-modified sentence versions, the research identified a consistent shift toward simpler sentence structure, shorter, more direct wording, and enhanced readability.

Overall, the results indicate that AI-based writing technologies tend to reshape linguistic production by encouraging more simplified, standardized and reasonably structured forms of expression in both academic and digital contexts.

The findings further demonstrate that, despite their differing functional roles, both Grammarly and ChatGPT produce broadly homogenized and aligned linguistic effects. As Rudnicka observes, both systems regularly promote concision by eliminating redundancy and frequently omitting formal constructions such as "in order to," irrespective of sentence complexity or register variation. This indicates a systematic bias toward conciseness over stylistic diversity or rhetorical tone. In fact, the findings additionally reveal a reduction in mean sentence length, however, this change does not necessarily correspond with improved readability outcomes. Rather, the evidence suggests that these tools primarily prioritize textual compression and structural simplification rather than communicative optimization.

When Machines Write: AI, Cognitive Offloading and English as an Intellectual Tool

"We have become intellectual tourists in our own work. We visit ideas. We don't inhabit them" (Sarkar, 2025, p. 2).

This is the central concern of Sarkar's (2025) talk at TEDAI Vienna, published as an annotated transcript under the title *Artificial Intelligence as a Tool for Thought.* Sarkar, a researcher at Microsoft Research Cambridge, opens with a scene that will feel familiar to anyone who has spent time in a modern office: emails, summaries, reports drafted, data analyses, desks assembled, all with AI assistance, all within the span of a single morning. This image of intellectual tourism is more than a rhetorical expression. It captures something truthful about the relationship between the knowledge worker or the student, and the language they produce when AI mediates between thought and text.

In terms of cognitive offloading and English language as a cognitive tool, the evidence gathered by Sarkar carries an important weight, since it since it conveys a profound analysis of how language functions cognitively. When analyzing creativity from the perspective of this AI-mediated communication and English language, Sarkar points to his own earlier research to describe what he calls "mechanized convergence", the documented tendency of groups working with AI assistance to produce a narrower range of ideas than groups working without it (Sarkar, 2023). This finding has an obvious linguistic dimension; language diversity, the range of lexical choices, syntactic structures and rhetorical strategies that writers bring to a task, are not merely aesthetic features of good prose. They reflect the diversity of thought itself. When AI

narrows the range of ideas, it also, quietly and gradually, narrows the range of linguistic resources available to express them.

In terms of critical thinking, it is important to point out a survey by Lee et al. (2025), in which knowledge workers reported putting evidently less effort into critical reasoning when working with AI. And what is even more prominent, this reduction was greatest among those who trusted AI most and doubted themselves most, a pattern that should give language educators particular thought. The learner who is least confident in their own English is precisely the learner most likely to rely on AI-generated text, and most likely to miss the language-learning opportunity that is provided by productive "struggle". The findings concerning memory are equally pointed out; Sarkar (2025) refers to research showing that people remember less of what they wrote when they relied on AI to write texts, and a randomized experiment conducted by Kreijkes et al. (2025) in secondary schools found that students using large language models as their primary reading aid showed lower comprehension and retention than those who engaged with texts directly.

Linguistically, what is probably most significant in Sarkar's research is his approach to metacognition, the capacity to reflect on one's own thinking and on one's own language choices. Sarkar states that working with AI requires metacognitive effort; one must assess the AI's output, decide whether it reflects one's intentions and judge whether the words on the page are actually theirs. But crucially, this metacognitive demand arises precisely because of the direct engagement with language, the sentence-by-sentence text production as to how to say something, has been delegated to the machine. Tankelevitch et al. (2024) describe this as a structural change in the cognitive demands of knowledge. According to their findings, AI does not eliminate the need for thinking, but rather changes the way thinking is performed. Instead of actively engaging in the cognitive process of formulating ideas through language, users increasingly adopt a more detached and evaluative role, focused on reviewing and refining AI-generated content. In this sense, the individual no longer functions primarily as the author of the text, but rather as the editor of a draft produced by the machine as described by Sarkar (2025). This distinction is particularly significant for language development. Swain (1985) identifies the following process as a fundamental element to second language acquisition: the moment in which the learner must search for a word, navigate through a grammatical structure, or formulate an argument in a language that is not yet fully mastered, arguing that these steps are essential for linguistic development.

In this perspective, the analogy Sarkar embraces from Bainbridge (1983) is particularly relevant. Bainbridge described the “ironies of automation” as the paradox where systems designed to reduce the workload of human operators tend to gradually weaken the skills that are required when those systems fail. Writers and language learners who consistently delegate linguistic decision-making to AI may face a similar risk. The cognitive and linguistic abilities developed through the processes of writing, noticing, selecting, revising and committing to linguistic choices are not fully maintained through the passive evaluation of AI-generated text. Instead, these skills may gradually weaken over time, often remaining unnoticed until they are required independently and can no longer be effectively performed.

Cognitive, Pragmatic and Sociolinguistic Dimensions of AI in ESL

The integration of generative artificial intelligence into higher education has acquired particular significance for students operating within English-medium instruction (EMI) and English as a second language (ESL) contexts. For these students, AI tools function not merely as instruments of efficiency, but as cognitive and linguistic frameworks that may either support or substitute the developing competence of the second language user. Youvan (2024), in his extended analysis of artificial intelligence as an instrument for cognitive augmentation, introduces a series of arguments from the perspective of applied linguistics that highlight the changes currently occurring in academic writing and speaking practices among multilingual students. This section synthesizes Youvan’s contribution through three convergent perspectives: cognitive, pragmatic and sociolinguistic, and considers the pedagogical implications that follow.

In terms of cognitive function, Youvan (2024) claims that human thought has always been bounded by the limits of natural language. The memory limitations first formalized by Miller (1956) and refined within Baddeley's (2003) model of working memory, impose particular burdens on learners who are required to compose in a language that is not their own. For EMI and ESL students, the cognitive load associated with academic production in English is substantially greater than that experienced by first-language speakers, since lexical search, syntactic structuring and rhetorical organization must each be conducted within a partially acquired linguistic system (Sweller, 1988; Kormos, 2012). AI-assisted writing tools may reasonably

offload portions of the cognitive burden of surface-level production, allowing students to direct attention toward higher-order rhetorical and conceptual concerns. The major risk, however, is precisely the one Youvan himself identifies in his closing reflections, that over-reliance upon AI may inhibit the productive process through which language acquisition is consolidated.

The pragmatic dimensions of AI mediation are equally significant, though Youvan (2024) addresses them only indirectly. Pragmatic competence, the capacity to adjust language to context, audience and communicative purpose, is among the most demanding dimensions of second language proficiency to develop, partly, because it cannot be acquired through grammatical instruction alone (Bardovi-Harlig, 2013). For EMI and ESL students, the disciplinary conventions of Anglophone academic writing such as citation practices, evaluative stance and the management of academic voice, constitute a sustained pragmatic challenge (Hyland, 2005). AI-mediated writing tools can produce text that is superficially compliant with these conventions, yet the deeper pragmatic reasoning that underlines expert academic discourse remains poorly modelled by current systems. Empirical work by Algouzi and Alzubi (2023) on AI-mediated reply suggestions, and research by Hohenstein et al. (2023) on the systematic positivity bias of AI-generated text, indicates that contemporary AI tools tend to converge toward a narrow band of pragmatically safe formulations: fluent, courteous but pragmatically generic.

From a sociolinguistic perspective, the integration of AI into second language writing raises significant questions of identity, voice and the distribution of linguistic authority. Academic writing is not the neutral transmission of information but the discursive construction of an authorial self within a scholarly community (Ivanic, 1998). For EMI and ESL students, the development of a recognizable academic voice in English constitutes simultaneously an intellectual achievement and a form of social positioning, signaling both competence and membership within a community of practice (Lave & Wenger, 1991). Youvan (2024) raises the concern that intellectual homogenization may emerge as an unintended consequence of widespread AI use; the sociolinguistic implications of this risk are particularly elevated for second language writers. The phenomenon resembles what Sarkar (2023) has termed "mechanized convergence": a gradual narrowing of academic writing toward a limited and more homogeneous style, caused not by formal rules but by the repeated use of similar AI-generated patterns.

These three perspectives — cognitive, pragmatic and sociolinguistic, are not separable concerns but interlocking dimensions of a single transformation. The capacity of artificial intelligence to reduce the cognitive load of L2 production is inseparable from its tendency to standardize pragmatic choices; the pragmatic effects of AI mediation are themselves embedded within the sociolinguistic dynamics through which linguistic norms are reproduced. For EMI and ESL students, the central question is no longer whether or not to engage with this technological shift, since the integration of AI into their writing and speaking practices has already significantly advanced, but rather in what conditions this engagement should take place. The pedagogical response, as Sarkar (2025) and Buçinca, Malaya and Gajos (2021) have separately argued, remains in the thoughtful and strategic projection of AI interaction, that does not diminish the productive cognitive effort, but on the contrary, preserves it.

Conclusion

The overall investigation and analysis carried out across the four sections, examining how generative artificial intelligence is reshaping the writing and speaking practices of ESL and EMI students, lead to the following conclusion; AI is no longer an external assistance to second language production but an active participant in it, shaping the words students choose, the structures they build and the voice through which they are recognized within an academic community. For learners who are still acquiring the language, the potential risks associated with the constant integration of AI-mediated text and speech assistance into their language development may be remarkably high.

We have examined whether AI operates as a scaffold that supports language development or as a replacement mechanism that substitutes for it. The answer is contradictory rather than definitive. AI-assisted tools can reasonably moderate the cognitive load associated with surface-level text production, allowing EMI and ESL students to direct their attention toward higher-order rhetorical and conceptual concerns. However, when used without critical evaluation and reflection, these same tools may diminish the productive process that Swain (1985) identified as central to second language acquisition. When that process is delegated to the machine, the developmental opportunities inherent in language production may consequently be reduced.

When analyzing written texts in English, the effects of AI are more consistent and measurable. AI-assisted writing tools systematically shorten sentences, reduce lexical variation and lead toward more concise, courteous and statistically default formulations. For L2 students this might carry a particular risk and cost; the conventional norms of academic writing, including evaluative stance, citation practices and the organization of academic voice, are exactly the pragmatic competences that AI can reproduce, while leaving the underlying reasoning underdeveloped. Therefore, a student may submit text that is completely compatible with conventional academic norms and requirements, yet, the same student has not learned to produce the text independently. In such cases, the produced text may reflect more of a technical compliance rather than genuine linguistic development or critical engagement with academic discourse. As a result, learners may become increasingly dependent on externally generated formulations instead of developing the cognitive and rhetorical skills required for self-sufficient academic writing

Despite individual competence, the article highlights a sociolinguistic risk for multilingual students. The fact is AI systems trained on standard varieties of English may promote linguistic homogenization, gradually narrowing linguistic diversity toward a homogenous stylistic form. As a result, the distinctive voices and cultural perspectives of L2 students in global Anglophone discourse may be critically diminished.

However, in conclusion, the pedagogical solution is not to separate AI from language learning, but to integrate it purposefully and thoughtfully. Educational tools and tasks should preserve productive cognitive effort by prioritizing engagement over rapid task completion. In this way, AI can support and enrich language development rather than replace it. Positioning learners as active authors of their own writing and speaking, rather than mere editors of machine-generated text, has become a central concern in applied linguistics, language education and educational policy.

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