

The Impact of AI on ESL Writing Autonomy: A Systematic Review

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ABSTRACT

The widespread adoption of AI-driven tools such as ChatGPT, Grammarly, QuillBot, and Wordtune in language classrooms has led this study to examine the impact of artificial intelligence (AI)-assisted writing tools on student autonomy in English as a Second Language (ESL) writing using a systematic literature review. Given the concerns raised about learners' over-reliance on AI-powered applications, which potentially hinder learner autonomy, this review aimed to address three research questions: (i) To what extent do AI-assisted writing tools influence student autonomy in ESL writing?; (ii) What are the key benefits and challenges associated with the use of AI in ESL writing classrooms?; and (iii) How do AI-assisted writing tools affect students' independent learning and writing development? A total of 10 peer-reviewed studies published from 2018 to 2024 were selected from major databases, including Scopus, Web of Science, ERIC, ScienceDirect, and Google Scholar, via the PRISMA protocol. Guided by Zimmerman's (2002) Self-Regulated Learning (SRL) Theory, six key dimensions of AI-supported learner autonomy were identified through thematic analysis: goal setting, independent editing, decision-making, motivation, critical thinking, and reflective monitoring. While these tools proved crucial for enhancing writing fluency, task planning, and learner confidence, notable pedagogical challenges involving student over-reliance on AI-generated recommendations, lack of critical engagement, and digital literacy gaps were encountered. Evidence for sustained skill transfer and deep metacognitive engagement remains limited despite improvements in writing and self-regulation. The current findings, which underscore the dual role of AI as both a scaffold and a potential barrier to autonomy, call for direct instructional strategies and future longitudinal research.

Contribution/Originality: This study contributes to the existing literature by systematically reviewing AI-assisted writing's influence on ESL learner autonomy. This study is one of very few studies which have investigated autonomy dimensions in AI integration. The paper's primary contribution is finding that AI tools foster self-regulation while posing unique pedagogical challenges.

1. Introduction

A new path for instruction and learner engagement has been paved for language learning through the integration of artificial intelligence (AI) into education. Recent works have denoted the significance of AI-assisted tools in honing language skills such as speaking and writing (Xu & Ismail, 2024). In particular, AI applications have substantially impacted the teaching of writing in English as a Second Language (ESL) classrooms. Writing tools such as QuillBot, AI Writer, and Typeset offer recommendations in the form of synonyms and restructure sentence patterns, both of which facilitate learners to rephrase sentences (Aljuaid, 2024). For ESL learners, ChatGPT is a valuable tool that provides real-time feedback, increases grammatical accuracy, and suggests structural refinements (Jamshed et al., 2024). Wordtune allows non-native English speakers to convert text from their native language into English via language translation (Nazari et al., 2021). Summarily, these tools offer students in ESL classrooms an interactive, technology-driven approach to writing (Li et al., 2023).

Despite increasing learner proficiency in writing, AI-assisted tools have raised concerns about their impact on student autonomy. Learner autonomy implies a student's ability to take ownership of their learning, set goals, and independently evaluate their progress (Benson, 2013). Independent learners actively plan their studies, seek useful information, and monitor their writing development (Little, 1991). In terms of SRL, effective language learners develop metacognitive strategies such as planning, monitoring, and evaluating their writing (Zimmerman, 2002). Nevertheless, AI-generated content may lead individuals to overly depend on technology rather than fostering writing skills. Such tendencies inevitably undermine critical thinking and self-reliance (Alm, 2024). The extent to which these tools empower students to write independently or create long-term reliance must be seriously considered following the widespread adoption of AI in ESL classrooms.

The AI-assisted tools such as ChatGPT have been found to produce coherent essays. Nonetheless, students who overuse them may not be able to think critically and creatively when completing their written assignments (Iskender, 2023; Alm, 2024; Chen & Gong, 2025). Xi (2024) disclosed that AI interactions in ESL learning fulfill students' needs at the risk of neglecting the communicative function in English. This finding underscores the irreplaceability of human communication, which cannot be replicated with AI. Following Chomsky (2023), the lack of genuine linguistic understanding demonstrated by AI models (ChatGPT), raises concerns about the impact on students' cognitive engagement with writing tasks. This review aimed to examine the impact of AI-assisted writing tools on student autonomy in ESL writing based on the following research questions: (i) To what extent do AI-assisted writing tools influence student autonomy in ESL writing?; (ii) What are the key benefits and challenges associated with the use of AI in ESL writing classrooms?; and (iii) How do AI-assisted writing tools affect students' independent learning and writing development? Insights into the pedagogical value of AI tools in promoting ESL students' autonomous learning were drawn and synthesised by systematically reviewing the current literature.

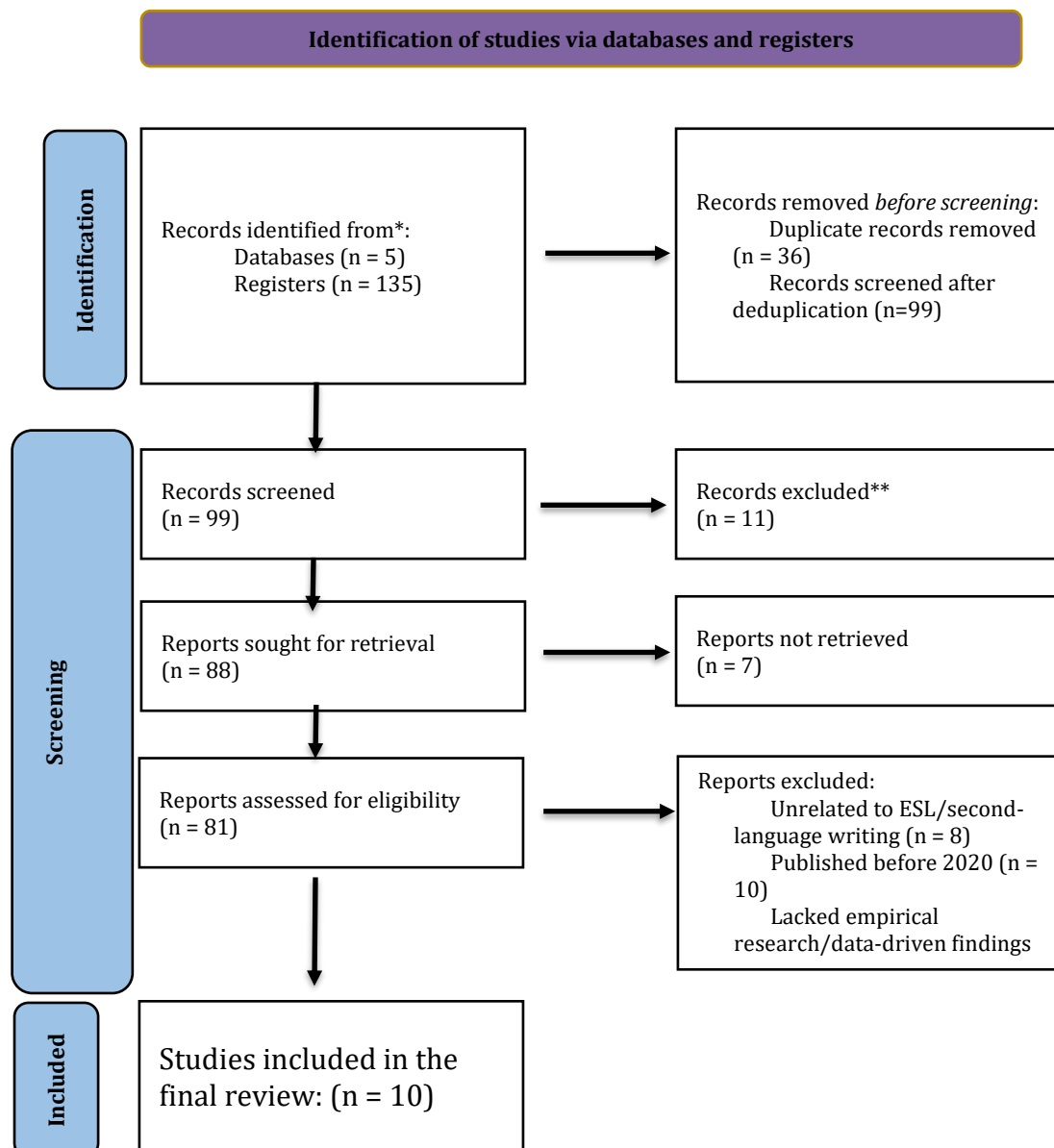
2. Methodology

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocols, which are suitable for systematically reviewing qualitative, quantitative, and mixed-methods designs, were employed in this study (Page et al. 2020). This

transparent and replicable framework is well-suited for identifying, screening, and selecting articles on educational and pedagogical research, including as the use of AI in ESL writing classrooms. Tailored for clinical trials and evidence-based medicine, the Cochrane Handbook for Systematic Reviews of Interventions (Higgins et al., 2022) renders it less applicable to the broader methodological diversity in educational technology studies. This review adopted the PRISMA protocol to systematically analyse the benefits, challenges, and influence of AI-assisted writing tools on student autonomy.

The systematic literature review procedures aligned with established frameworks (Kitchenham, 2007; Page et al., 2020) and the methodological practices outlined in Irdina et al. (2024), who focused on transparency, replicability, and thematic synthesis to maintain validity and depth in education-based SLRs. Collectively, these methodological standards supported a structured and credible analysis of relevant literature. Figure 1 illustrates the PRISMA flow diagram used to outline the article selection process for this review, which involves four primary phases: identification, screening, eligibility, and inclusion.

Figure 1: PRISMA Diagram of Article Selection Process



As depicted in [Figure 1](#), PRISMA protocols ensure transparency and replicability in selecting studies that encompass the four aforementioned phases ([Page et al., 2020](#)). Each phase was systematically conducted to refine the selection of relevant studies.

2.1. Identification Phase

To gather literature pertaining to AI-assisted writing in ESL classrooms, a systematic search was conducted across peer-reviewed journals, conference proceedings, and reputable academic sources. Five databases, namely Scopus, Web of Science, Education Resource and Information Centre (ERIC), ScienceDirect and Google Scholar, were selected for their broad coverage of peer-reviewed publications across the domains of education, technology-enhanced learning, applied linguistics, and second-language acquisition. Such extensive coverage allows for retrieving comprehensive and high-quality literature. To capture the recent developments in AI-assisted writing technologies, this search included publications spanning between 2018 and 2025. The research queries outlined in Table 1 served to identify relevant publications. Boolean operators such as "AND" ("AI-assisted writing" AND "student autonomy") and "OR" ("Artificial Intelligence" OR "AI tools") were used to combine major concepts and expand the search to include synonyms, respectively. [Table 1](#) presents the search strings.

Table 1: Search String

Database	Search String
Scopus	(TITLE-ABS-KEY("AI-assisted writing" OR "artificial intelligence in writing" OR "AI writing tools" OR "ChatGPT" OR "Grammarly" OR "QuillBot" OR "Wordtune") AND TITLE-ABS-KEY("ESL students" OR "English language learners" OR "second language writing") AND TITLE-ABS-KEY("learner autonomy" OR "writing independence" OR "self-regulated learning" OR "critical thinking")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English")) AND (PUBYEAR > 2017)
Web of Science	TS=("AI-assisted writing" OR "AI in academic writing" OR "ChatGPT" OR "Grammarly" OR "QuillBot" OR "Wordtune") AND TS=("ESL students" OR "English as a second language" OR "EFL learners" OR "language learning") AND TS=("learner autonomy" OR "writing skills development" OR "self-regulated learning" OR "critical thinking") AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) AND PUBLICATION YEARS: (2018–2025)
ERIC	("AI-assisted writing" OR "artificial intelligence in writing" OR "AI tools in ESL writing") AND ("English language learners" OR "ESL students" OR "EFL learners" OR "academic writing") AND ("learner autonomy" OR "self-regulated learning" OR "writing independence" OR "critical thinking") AND (peer-reviewed: yes) AND (publication date: 2018–2025)
ScienceDirect	("AI-assisted writing" OR "AI tools in education" OR "ChatGPT for writing" OR "Grammarly" OR "QuillBot") AND ("ESL students" OR "EFL learners" OR "English language learners") AND ("learner autonomy" OR "writing self-regulation" OR "independent learning") AND (LIMIT-TO (pubyear, 2018–2025)) AND (LIMIT-TO (language, "English"))
Google Scholar	"AI-assisted writing" OR "artificial intelligence in ESL writing" OR "ChatGPT in education" OR "AI writing tools" AND "ESL students" OR "English as a second language" OR "EFL learners" AND "learner

autonomy" OR "self-regulated learning" OR "critical thinking" AND
site:.edu OR site:.ac.uk OR site:*.org

2.2. Inclusion and Exclusion Criteria

Both the inclusion and exclusion criteria were established to identify studies aligning with the objectives of this systematic literature review and ensure a detailed selection of literature. The inclusion criteria focused on studies examining the impact of AI-assisted writing tools on student autonomy in ESL writing. Only peer-reviewed journal articles, conference papers, and book chapters published between 2018 and 2024 were deemed relevant to current AI advancements. Studies on AI tools such as ChatGPT, Grammarly, QuillBot, and similar technologies within ESL or second-language writing contexts were also included. Meanwhile, papers involving general AI applications in education without specific reference to writing skills or student autonomy, non-peer-reviewed articles, opinion pieces, blog posts, and grey literature, studies published in languages other than English, and those primarily examining AI-assisted writing in non-ESL settings were duly excluded. [Table 2](#) presents a summary of the inclusion and exclusion criteria applied in the current selection process.

Table 2: Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Publication Type	Peer-reviewed journal articles, conference papers, book chapters	Non-peer-reviewed articles, blog posts, grey literature
Timeframe	2018-2024	Studies published before 2018 unless foundational
Language	English	Non-English publications
Context	ESL or second-language writing settings	Studies focusing on native English speakers
Focus Area	AI-assisted writing tools and their impact on student autonomy	General AI applications in education without a focus on writing
AI Tools	Studies investigating AI tools like ChatGPT, Grammarly, QuillBot, Wordtune, etc	Studies on AI tools unrelated to writing

Source: Adapted from [Kitchenham and Charters \(2007\)](#) to suit the context of ESL and AI-assisted writing research.

2.3. Screening Phase

Duplicate records (n = 36) were removed following the initial identification process. The remaining counterparts (n = 99) were screened against the inclusion and exclusion criteria presented in [Table 2](#). Due the absence of primary empirical data, lack of focus on AI-assisted writing in ESL classrooms, or being published in languages other than English, 11 studies were excluded. A full-text review was conducted on the remaining articles (n = 88) to assess their eligibility. Seven of them could not be retrieved owing to limited accessibility, hence reducing the dataset to 81 records. Further exclusions were

made based on specific criteria. Specifically, eight studies unrelated to ESL or second-language writing contexts, 10 published before 2020 (less relevant to current AI advancements), 32 with lack of empirical research or conceptual/theoretical discussions without data-driven findings, and 21 prioritising key AI functions without addressing student autonomy in writing were duly omitted. Only 10 studies met the stipulated conditions and were included in the final review. Each selected study is required to address the research questions and provide reliable evidence to ensure credibility and relevance.

2.4. Data Extraction and Analysis

Key findings from the selected studies were identified and categorised using [Braun and Clarke's \(2006\)](#) thematic analysis approach. Empirical data were extracted based on the study details, AI tools examined, research focus, methodology, and key findings. This study systematically identified patterns and relationships across the selected studies to address the research questions based on [Braun and Clarke's \(2006\)](#) six-phase framework for thematic analysis. All the selected studies were read and re-read in the first phase to gain familiarity with the content and overall context. In the second phase, initial codes that captured key concepts and recurring ideas relevant to the review focus were generated. Similar codes were grouped together in the third phase to begin developing potential themes. To ensure coherence and consistency within and across themes, these groupings were reviewed and refined in the fourth phase. Themes were defined and named in the fifth phase based on their distinctive features and relevance to the research objectives. Finally, the most representative and meaningful themes were selected and structured in the sixth phase to guide the reporting of the findings.

3. Findings And Discussion

This section integrates the findings from the 10 selected studies ([Table 3](#)) and discusses them in alignment with the research questions.

Table 3: List of Reviewed Studies with Assigned Study IDs

Authors & Year	Title
Aljuaid (2024)	The Impact of Artificial Intelligence Tools on Academic Writing Instruction in Higher Education
Alm (2024)	Exploring Autonomy in the AI Wilderness: Learner Challenges and Choices.
Chen & Gong (2025)	The Role of AI-Assisted Learning in Academic Writing: A Mixed-Methods Study on Chinese as a Second Language Students.
Iskender (2023)	Holy or unholy? Interview with open AI's ChatGPT.
Jamshed et al. (2024)	The Impact of ChatGPT on English Language Learners' Writing Skills: An Assessment of AI Feedback on Mobile
Li, Bonk & Kou (2023)	Exploring the multilingual applications of ChatGPT: Uncovering language learning affordances in YouTuber videos.
Nazari et al. (2021)	Application of Artificial Intelligence powered Digital Writing

	Assistant in higher education: randomized controlled trial
Teng & Wang (2023)	“ChatGPT is the companion, not enemies”: EFL learners’ perceptions and experiences in using ChatGPT for feedback in writing.
Xi (2024)	The Role and Impact of Artificial Intelligence in The Learning of English Writing Skills in Second Language Acquisition
Zhao, Liu & Chen (2023)	Evaluating AI-based writing assistants: A study on their effectiveness in higher education.

3.1 To what extent do AI-assisted writing tools influence student autonomy in ESL writing?

The diverse opportunities resulting from the integration of AI-assisted writing tools has increased student autonomy in ESL writing. Tools akin to ChatGPT, Grammarly, QuillBot, and Wordtune support various stages of writing planning, drafting, editing, and revising, all of which lower the dependence on teachers ([Aljuaid, 2024](#); [Teng & Wang, 2023](#)). Guided by [Zimmerman’s \(2002\)](#) SRL Theory, which categorises autonomy into forethought, performance, and self-reflection phases, this review identified six core dimensions of autonomy supported by AI: goal setting and planning, independent editing, decision-making, motivation and confidence, critical thinking, and reflection and monitoring.

[Table 4](#) presents the core dimensions adapted from [Zimmerman’s \(2002\)](#) SRL model and mapped across 10 reviewed studies. Most of the studies revealed a positive influence across multiple autonomy dimensions, particularly in editing, motivation, and goal setting. Regardless, the depth of engagement varied by learner proficiency and pedagogical support.

Table 4: Themes of Student Autonomy Supported by AI-Assisted Writing Tools

Authors & Year	Goal Setting & Planning	Independent Editing	Decision-Making	Motivation & Confidence	Critical Thinking	Reflection & Monitoring
Aljuaid (2024)	✓	✓	✓	✓		
Alm (2024)		✓	✓	✓	✓	
Chen & Gong (2025)	✓		✓		✓	✓
Iskender (2023)						
Jamshed et al. (2024)	✓	✓		✓		✓

Li, Bonk & Kou (2023)	✓					✓
Nazari et al. (2021)	✓	✓	✓			
Teng & Wang (2023)	✓	✓	✓	✓	✓	✓
Xi (2024)	✓					
Zhao, Liu & Chen (2023)		✓	✓	✓	✓	✓

3.1.1 Forethought Phase: Goal Setting and Motivation

Learners frequently generate thesis statements, organise content, and initiate tasks using AI (Aljuaid, 2024; Jamshed et al., 2024; Teng & Wang, 2023). This corroborates Zimmerman's (2002) forethought phase, which includes goal-setting and motivational beliefs. Teng and Wang (2023) claimed that AI enables students to begin writing with more confidence by mitigating their task anxiety. Aljuaid (2024) also reported an increase in the willingness to write when learners had AI-generated outlines to follow. Nevertheless, Chen and Gong (2025) observed that students struggle to plan independently beyond AI recommendations without explicit training.

3.1.2 Performance Phase: Independent Editing and Critical Decision-Making

The performance phase includes strategies during the task editing, choosing language, and applying feedback. Tools entailing Grammarly and QuillBot were found to support surface-level autonomy (Alm, 2024; Jamshed et al., 2024; Nazari et al., 2021), while ChatGPT prompted deeper reflection (Teng & Wang, 2023). In line with Nazari et al. (2021), learners became more confident in revising their work after interpreting AI feedback. Conversely, Zhao et al. (2023) and Alm (2024) revealed that students often accept AI suggestions without critically evaluating them. This finding indicates passive rather than active autonomy. Decision-making and critical engagement were evident, but inconsistent, across users.

3.1.3 Self-Reflection Phase: Monitoring and Evaluation

Reflection and monitoring are crucial for long-term autonomy. A limited number of studies in this review extensively examined this phase. Learners who revisited drafts, compared AI versions, and tracked patterns of improvement (Chen & Gong, 2025; Jamshed et al., 2024; Li, Bonk, & Kou, 2023; Teng & Wang, 2023) exhibited signs of self-regulated growth. Based on Chen and Gong (2025), learners with metacognitive strategies used AI to refine future writing. Others bypassed this step, suggesting that true reflective autonomy without guided support is limited.

Overall, AI-assisted writing tools support various dimensions of student autonomy in ESL writing. The level of support is highest in planning, editing, and motivation following Zimmerman's (2002) SRL framework. Regardless, areas such as decision-making and

reflection required more instructional scaffolding to ensure deeper, lasting autonomy. While AI can be an effective scaffold, its ability to develop true independence depends on how critically and consciously learners engage with the tools.

3.2. What are the key benefits and challenges associated with the use of AI in ESL writing classrooms?

The integration of AI-assisted writing tools in ESL classrooms is advantageous in terms of improved fluency, motivation, and revision strategies. Nonetheless, critical challenges involving over-reliance, reduced critical engagement, and digital literacy gaps presents a complex pedagogical landscape. This section synthesises the findings from all 10 reviewed studies, which are categorised into two domains of benefits and challenges following RQ2. Table 5 presents a summary of the reviewed studies and maps the presence of benefits and challenges across key thematic dimensions.

Table 5: Summary of Benefits and Challenges of AI-Assisted Writing Tools in ESL Classrooms

Authors & Year	Improved Fluency & Accuracy	Motivation & Engagement	Revision Support	Authentic Input	Over-Reliance	Reduced Critical Thinking	Digital Literacy Issue
Aljuaid (2024)	✓	✓	✓		✓		
Alm (2024)		✓	✓		✓	✓	
Chen & Gong (2025)	✓		✓		✓	✓	✓
Iskender (2023)							
Jamshed et al. (2024)	✓	✓	✓	✓			
Li, Bonk & Kou (2023)	✓			✓			✓
Nazari et al. (2021)	✓		✓				✓
Teng & Wang (2023)	✓	✓	✓	✓		✓	
Xi (2024)	✓			✓	✓		
Zhao, Liu & Chen	✓	✓	✓	✓	✓	✓	

(2023)

3.2.1. Pedagogical Benefits of AI Tools

Several studies highlighted the pedagogical value of AI tools in supporting ESL writing. With regard to fluency and accuracy, AI tools such as Grammarly, QuillBot and ChatGPT assisted learners in correcting grammar, expanding vocabulary, and constructing syntactically appropriate sentences (Aljuaid, 2024; Chen & Gong, 2025; Jamshed et al., 2024; Nazari et al., 2021; Zhao, Liu, & Chen, 2023). Both motivation and engagement also played a pivotal role. Owing to real-time feedback, error-free outputs, and a reduced fear of failure, the students reported an increase in motivation (Aljuaid, 2024; Alm, 2024; Jamshed et al., 2024; Teng & Wang, 2023; Zhao, Liu, & Chen, 2023). Teng and Wang (2023) described AI as a “non-judgemental writing partner,” which proves useful for anxious or low-proficiency learners. In this vein, AI tools serve as revision support. Learners frequently used AI to rephrase sentences and iteratively revise drafts, reinforcing the concept of writing as a process (Aljuaid, 2024; Chen & Gong, 2025; Jamshed et al., 2024; Nazari et al., 2021; Teng & Wang, 2023; Zhao, Liu, & Chen, 2023). The authentic input response generated from tools such as ChatGPT exposes learners to native-like sentence structures, task models, and contextual vocabulary (Jamshed et al., 2024; Li, Bonk, & Kou, 2023; Teng & Wang, 2023; Xi, 2024; Zhao, Liu, & Chen, 2023), hence supporting incidental learning and stylistic awareness. When used intentionally, AI tools can complement teacher feedback and promote more active learner involvement in the writing process.

3.2.2. Pedagogical Challenges of AI Tools

Despite the potential benefits of AI-assisted writing tools, relevant literature underscores key pedagogical concerns related to their uncritical or unstructured use. A recurring issue is student over-reliance on AI-generated suggestions. Following past works (Aljuaid, 2024; Alm, 2024; Chen & Gong, 2025; Xi, 2024; Zhao, Liu, & Chen, 2023), learners (particularly those with lower English proficiency) tended to accept AI feedback without critical reflection. Alm (2024) coined this phenomenon the “autonomy paradox,” where the tools intended to promote learner independence may inadvertently diminish it.

Reduced critical engagement was another frequently cited concern. Learners encountered difficulties in evaluating the tone, appropriateness, or contextual relevance of AI-generated content (Alm, 2024; Chen & Gong, 2025; Zhao, Liu, & Chen, 2023). As reported by Zhao et al. (2023), many students bypassed opportunities for self-evaluation and critical revision when AI outputs are perceived as definitive answers.

These challenges were exacerbated by digital literacy gaps. Students with limited technological proficiency were more prone to misinterpreting or misapplying AI feedback (Chen & Gong, 2025; Li, Bonk, & Kou, 2023; Nazari et al., 2021). Based on several studies, some AI tools produced generic or overly formal outputs (Aljuaid, 2024; Iskender, 2023; Zhao, Liu, & Chen, 2023) when users provided vague prompts or minimal contextual information.

These findings call for embedding direct instruction in digital literacy, feedback interpretation, and reflective writing practices. Such scaffolding is key to ensuring that AI functions as a support for autonomy rather than a substitute for learner agency.

3.3. How do AI-assisted writing tools affect students' independent learning and writing development?

This section details how AI-assisted writing tools influence the development of independent learning behaviours and writing competence among ESL learners based on research question 3. The selected studies provide insights into learners' abilities to self-regulate their writing processes, transfer skills across tasks, and engage in reflective learning. The findings are examined in terms of planning, monitoring, and evaluating behaviours based on [Zimmerman's \(2002\)](#) SRL Theory. These are key indicators of writing autonomy and independent learning.

This review synthesises existing literature rather than assessing outcomes from a single empirical dataset to highlight recurring patterns and differences in how AI tools support or hinder learner development. [Table 6](#) details how the 10 studies addressed long-term writing improvement, reflective practice, and skill transfer.

Table 6: Indicators of Writing Development and Independent Learning Reported in Reviewed Studies

Authors & Year	Study ID	Writing Improvement	Self Regulated Learning behaviour	Skill Transfer without AI	Authentic Input
Aljuaid (2024)	S1	✓	✓		
Alm (2024)	S2		✓		✓
Chen & Gong (2025)	S3	✓	✓	✓	✓
Iskender (2023)	S4				
Jamshed et al. (2024)	S5	✓	✓	✓	✓
Li, Bonk & Kou (2023)	S6		✓		✓
Nazari et al. (2021)	S7	✓	✓		
Teng & Wang (2023)	S8	✓	✓		✓
Xi	S9				

(2024)

Zhao,
Liu &
Chen
(2023)

S10



3.3.1. Writing Development and Skill Growth

Five studies ([Aljuaid, 2024](#); [Chen & Gong, 2025](#); [Jamshed et al., 2024](#); [Nazari et al., 2021](#); [Zhao, Liu, & Chen, 2023](#)) evidenced measurable improvements in learners' writing quality over time, particularly in relation to grammar accuracy, coherence, and structure. Repeated use of AI tools such as Grammarly and ChatGPT during drafting and revision stages primarily contributed to these improvements. Following [Teng and Wang \(2023\)](#), learners exhibited more sophisticated sentence structures and improved logical flow after prolonged engagement with AI-supported revisions.

As some students produced syntactically fluent, but semantically weak, content due to the overuse of automated suggestions, [Zhao et al. \(2023\)](#) cautioned that some improvements were superficial. While AI tools may accelerate surface-level writing growth, further development depends on the learner's critical engagement.

3.3.2 Self-Regulated Learning Practices

Studies such as [Chen and Gong \(2025\)](#), [Jamshed et al. \(2024\)](#), [Nazari et al. \(2021\)](#), and [Teng & Wang \(2023\)](#) highlighted an increase in learner autonomy in planning, monitoring, and revising writing independently based on the SRL performance and self-reflection phases ([Zimmerman, 2002](#)). Learners took greater initiative in identifying errors, revising drafts, and setting writing goals. Based on [Chen and Gong \(2025\)](#), students used feedback from Grammarly to create personalised editing checklists. [Jamshed et al. \(2024\)](#) revealed that learners actively revise drafts based on AI suggestions without relying on teacher correction.

Overall, AI tools can support learners' development of autonomous behaviours when they are trained to use them purposefully and reflectively.

3.3.3. Metacognitive Engagement and Skill Transfer

Four studies ([Chen & Gong, 2025](#); [Jamshed et al., 2024](#); [Li, Bonk, & Kou, 2023](#); [Teng & Wang, 2023](#)) reported that learners engaged in reflection on their writing processes, particularly by comparing AI-generated feedback with their initial drafts. [Teng and Wang \(2023\)](#) claimed that students use these comparisons to identify recurring weaknesses, while [Li et al. \(2023\)](#) denoted that multilingual learners track their use of cohesive devices and vocabulary improvements over time.

Only two studies ([Chen & Gong, 2025](#); [Jamshed et al., 2024](#)) evidenced that students could apply these improvements without continued AI assistance. This highlights a gap in the current literature on the transferability of skills. While AI can scaffold writing, it does not guarantee sustainable learning unless paired with reflection and strategy instruction.

Based on the literature review, AI-assisted writing tools can support the development of independent learning and writing competence among ESL learners in areas of revision, planning, and reflection. Regardless, the long-term impact on writing autonomy is limited when learners engage with AI tools passively or without metacognitive support. These findings call for pedagogical scaffolding and feedback literacy to maximise the benefits of AI integration.

4. Conclusion

This review synthesised relevant literature on the role of AI-assisted writing tools in shaping learner autonomy in the context of ESL writing. Based on the findings, AI tools can promote self-editing, feedback interpretation, and writing fluency by increasing autonomy. Key challenges involving learner over-reliance, reduced critical engagement, and mixed perceptions regarding pedagogical value were also identified. The dual nature of AI-assisted tools requires a careful and strategic approach to their adoption in ESL classrooms. Future studies could consider exploring the long-term effects of AI-assisted writing tools on autonomy, particularly in diverse educational settings and across proficiency levels. Experimental or longitudinal designs could delineate how sustained AI use influences writing development and self-regulation.

Ethics Approval and Consent to Participate

This study did not involve human participants; therefore, ethics approval and informed consent were not required.

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Conflict of Interest

The authors reported no conflicts of interest for this work and declare that there is no potential conflict of interest for the research, authorship, or publication of this article.

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