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GENERATIVE AI TOOLS AND EFL LEARNER INDEPENDENCE: ARE THEY BUILDING INDEPENDENT LEARNING OR DEPENDENCE ON TOOLS

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ABSTRAK

Perkembangan pesat *generative artificial intelligence* (AI) telah mengubah praktik penulisan akademik *English as a Foreign Language* (EFL), sekaligus memunculkan perdebatan mengenai perannya dalam memperkuat kemandirian belajar atau justru meningkatkan ketergantungan kognitif mahasiswa. Berangkat dari isu tersebut, penelitian ini mensintesis bukti empiris untuk menjelaskan bagaimana AI generatif membentuk kedua kecenderungan tersebut dalam penulisan akademik EFL/ESL pada konteks pendidikan tinggi global. Kajian dilakukan menggunakan desain *Systematic Literature Review* dengan mengacu pada pedoman PRISMA 2020. Penelusuran literatur dilakukan melalui enam sumber informasi, dilanjutkan dengan proses identifikasi, seleksi, penilaian kelayakan, dan sintesis tematik terhadap 34 artikel *peer-reviewed* berakses terbuka yang diterbitkan pada periode 2022–2025. Sintesis menunjukkan bahwa AI mampu memperkuat efikasi diri, regulasi diri, kesadaran metakognitif, serta kemampuan menulis mandiri ketika dimanfaatkan sebagai *scaffolding* yang mendorong refleksi, evaluasi kritis, dan keterlibatan aktif mahasiswa dalam proses menulis. Sebaliknya, penggunaan AI sebagai pengganti penyusunan gagasan, pengambilan keputusan, dan revisi berpotensi memunculkan ketergantungan kognitif, perilaku, dan emosional yang mengurangi keterlibatan intelektual penulis. Kontribusi utama penelitian ini terletak pada perumusan kerangka *scaffold-to-dependency*, yang menunjukkan bahwa dampak AI tidak ditentukan oleh teknologinya, melainkan oleh desain pedagogis, literasi AI, keterlibatan kritis mahasiswa, dan pengaturan penggunaan AI selama proses pembelajaran. Temuan ini memberikan dasar konseptual bagi pengembangan kurikulum, asesmen, dan kebijakan pendidikan tinggi yang mengintegrasikan AI secara bertanggung jawab sekaligus menjaga perkembangan kemampuan menulis akademik secara mandiri.

Kata kunci: *Kecerdasan Artifisial Generatif, Penulisan Akademik EFL, Kemandirian Belajar, Ketergantungan AI, Systematic Literature Review*

ABSTRACT

The rapid advancement of generative artificial intelligence (AI) has transformed academic writing practices in English as a Foreign Language (EFL), while simultaneously raising pedagogical concerns about whether AI strengthens learner independence or promotes cognitive dependency. Addressing this issue, the present study synthesises empirical evidence to explain how generative AI shapes these contrasting outcomes in EFL/ESL academic writing within the global higher education context. The study employed a Systematic Literature Review guided by the PRISMA 2020 reporting framework. The literature search covered six information sources and involved systematic identification, screening, eligibility assessment, and thematic synthesis of 34 open-access, peer-reviewed articles published between 2022 and 2025. The synthesis revealed that AI enhances writing self-efficacy, self-regulated learning, metacognitive awareness, and independent writing performance when used as a form of

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scaffolding that encourages reflection, critical evaluation, and active learner engagement throughout the writing process. Conversely, using AI to replace idea generation, decision-making, and revision may foster cognitive, behavioural, and emotional dependency by reducing learners' intellectual involvement in writing. The principal contribution of this review is the development of the scaffold-to-dependency framework, demonstrating that the educational impact of AI is shaped not by the technology itself but by pedagogical design, AI literacy, learners' critical engagement, and the regulation of AI use during learning. These findings provide a conceptual foundation for developing curricula, assessment practices, and institutional policies that integrate AI responsibly while sustaining the development of independent academic writing.

Keywords: *Generative Artificial Intelligence, EFL Academic Writing, Learner Independence, AI Dependency, Systematic Literature Review*

INTRODUCTION

The integration of generative artificial intelligence (AI) into English as a Foreign Language (EFL) academic writing has redefined how university students construct, revise, and refine written work. Applications such as ChatGPT, Grammarly, QuillBot, and other AI-powered conversational systems no longer function merely as language-correction tools but increasingly participate in idea generation, argument development, linguistic refinement, and text revision throughout the writing process. This transformation is particularly relevant in Indonesian higher education, where many EFL students continue to experience difficulties in generating ideas, organising coherent arguments, applying academic language accurately, and producing independent academic texts (Batubara & Fithriani, 2023). As AI becomes embedded within everyday writing practices, the central educational concern shifts from technological adoption itself toward its implications for students' cognitive engagement and writing development.

Educationally, AI is expected to operate as cognitive scaffolding that strengthens rather than replaces students' writing competence. Interactive feedback, alternative lexical choices, structural suggestions, and iterative dialogue can facilitate planning, drafting, editing, and revision while leaving learners responsible for evaluating and improving their own work. Such conditions have been associated with higher writing motivation, confidence, and engagement when students remain actively involved throughout the composing process (Song & Song, 2023; Apriani et al., 2024), whereas EFL postgraduate students have also demonstrated strategic use of ChatGPT for brainstorming, vocabulary support, and revision without relinquishing ownership of their arguments (Werdiningsih et al., 2024). Accordingly, the educational contribution of AI depends less on its technical capabilities than on how critically learners interact with the support it provides.

This perspective highlights learner independence as a key dimension for understanding AI-supported writing. In the present study, learner independence refers to students' capacity to establish writing goals, regulate learning activities, interpret feedback, and make revision decisions through their own informed judgement despite receiving technological assistance. Although conceptually related to learner autonomy, self-regulated learning, and writing self-efficacy, the construct places stronger emphasis on learners' sustained control over cognitive and metacognitive processes during writing. Evidence indicates that AI-powered chatbots can reinforce self-efficacy and self-regulation when learners critically evaluate AI-generated feedback (Apriani et al., 2024), while ChatGPT supports deeper engagement when it serves as

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a dialogic partner for exploring and refining ideas instead of producing completed texts (Zare et al., 2025).

Alongside these educational opportunities, the increasing reliance on AI introduces a contrasting concern regarding cognitive dependency. Delegating idea generation, argument construction, language selection, and revision to AI without reflective evaluation reflects a process of cognitive offloading, whereby intellectual tasks are transferred to external technologies in ways that may gradually reduce learner agency (Shum, 2024). A systematic review by Zhai et al. (2024) similarly reported that habitual acceptance of AI-generated responses without sufficient reflection may weaken cognitive performance over time, particularly when users no longer question or verify AI output. Within EFL academic writing, such tendencies may ultimately limit opportunities for developing independent reasoning, critical evaluation, and argumentative competence despite apparent improvements in writing quality.

The possibility of dependency is especially relevant in EFL academic writing because AI-generated texts often appear more fluent and linguistically sophisticated than students' own developing English proficiency. Consequently, improvements in writing confidence do not automatically indicate stronger learner independence, as technological dependence may emerge simultaneously with increased reliance on AI-assisted writing (Bouzar et al., 2024). Evidence from Indonesian higher education likewise suggests that intensive use of ChatGPT can reduce students' capacity to compose academic texts independently (Marisa et al., 2025), while longer-term observations indicate potential consequences for the gradual development of autonomous writing skills (Budiyono et al., 2025). The critical issue therefore concerns not whether AI is used, but whether it expands learners' intellectual engagement or progressively substitutes the cognitive effort required for academic writing.

Different learning outcomes also reflect differences in how AI is positioned within classroom practice rather than in the technology itself. When AI is integrated through guided prompting, reflective revision, and critical evaluation, it can enrich students' writing development; conversely, using AI primarily to generate polished final texts risks reducing meaningful learner participation. Research has shown that AI writing tools influence both the organisation and content of students' writing, while teachers consistently emphasise the importance of pedagogical guidance in AI-supported instruction (Marzuki et al., 2023), and classroom practices are shaped by teachers' professional cognition regarding AI integration (Zaimoğlu & Dağtaş, 2025). Equally important, students require adequate AI literacy including awareness of AI capabilities, limitations, and ethical responsibilities to distinguish productive learning support from uncritical dependence on AI-generated content (Hossain et al., 2025).

Despite the rapid expansion of research on generative AI in EFL writing, current evidence remains fragmented across separate discussions of benefits and risks. Many studies emphasise improvements in writing quality, motivation, self-efficacy, engagement, and self-regulated learning, whereas others focus on technological dependence, cognitive offloading, and declining independent writing ability without examining how these outcomes interact. Although Balcı (2024) comprehensively reviewed the opportunities and challenges of ChatGPT in EFL education, the positive and negative dimensions were largely presented as parallel issues rather than interconnected processes, while evidence from AI-assisted discourse demonstrates that students continuously negotiate, revise, accept, question, or reject AI-generated suggestions during writing (Jacob et al., 2025). This conceptual separation reveals a clear research gap, as the relationship between AI-supported learner independence and AI-induced learner dependency has not yet been synthesised within a unified analytical framework.

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To address this gap, the present study conducts a Systematic Literature Review (SLR) of empirical studies published between 2022 and 2025 concerning the role of generative AI in EFL academic writing. Unlike previous reviews, including Balcı (2024), this study integrates evidence on AI-supported learner independence and AI-induced learner dependency within a single conceptual framework while identifying pedagogical structure, critical engagement with AI output, AI literacy, and the gradual reduction of AI assistance as mediating factors influencing writing development. By focusing on higher education, particularly its relevance to Indonesian EFL contexts, the review seeks to provide evidence-based implications for writing instruction, assessment practices, and institutional AI policy. Accordingly, the review addresses three research questions: (1) How do generative AI tools support learner independence in EFL writing contexts? (2) How do generative AI tools foster learner dependency in EFL writing contexts? and (3) What pedagogical and learner-related factors mediate the relationship between AI-supported writing and learner dependency in EFL writing contexts?

RESEARCH METHOD

This study employed a Systematic Literature Review (SLR) guided by the PRISMA 2020 reporting framework (Page et al., 2021) to synthesise empirical evidence on the role of generative artificial intelligence (AI) in fostering learner independence and learner dependency in EFL/ESL academic writing. The literature search was completed on 30 March 2025 across six sources: ERIC via EBSCOhost, Google Scholar, the Frontiers Psychology and Education collections, MDPI journals in Education and Humanities, Cogent Education, and EFL-related journals indexed in the Directory of Open Access Journals (DOAJ). Boolean search strategies combined terms related to generative AI, ChatGPT, AI writing tools, EFL/ESL writing, learner autonomy, learner independence, self-regulated learning, dependency, and over-reliance, complemented by the keywords Indonesia OR Indonesian as well as backward and forward citation searching. Only peer-reviewed, fully open-access English journal articles published between January 2022 and March 2025 and reporting learner-related outcomes in EFL/ESL academic writing were retained, whereas publications outside these criteria were excluded.

All retrieved records were organised in Zotero for duplicate removal before title, abstract, and full-text screening were conducted according to the predefined eligibility criteria. As presented in Figure 1, 344 records were initially identified, consisting of 330 records from database searches and 14 additional records from citation chaining; after removing 47 duplicates, 297 studies were screened, 112 full-text articles were assessed for eligibility, and 34 empirical studies satisfied all inclusion criteria for the final synthesis. Presenting these procedures in the PRISMA flow diagram avoids unnecessary repetition while providing transparent documentation of the selection process. The sequence of identification, screening, eligibility assessment, and study inclusion is illustrated in Figure 1.

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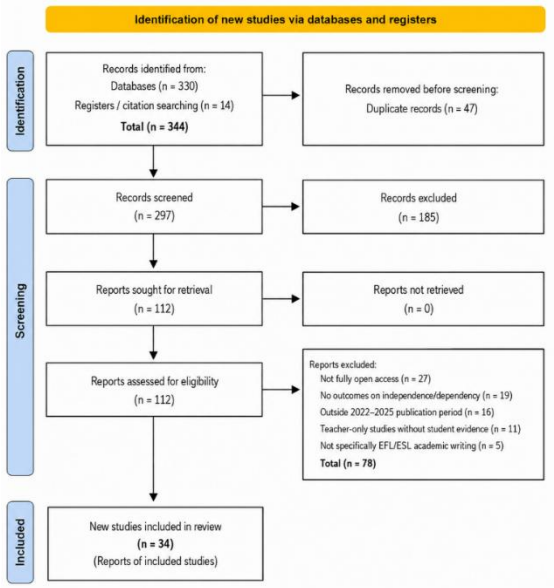

Figure 1. PRISMA 2020 Flow Diagram of the Study Selection Process

Information from the 34 included studies was extracted using a standardised form covering publication characteristics, educational context, research design, participant profile, AI tools, theoretical framework, and findings related to learner independence or learner dependency. The extraction form was piloted on five eligible articles before full implementation, after which the evidence was synthesised through a hybrid thematic analysis that combined inductive coding with deductive categorisation into two overarching themes: AI-supported learner independence and AI-related learner dependency. Coding reliability was examined by two reviewers who independently analysed 25% of the included studies (nine articles), yielding a Cohen's kappa coefficient of 0.83. The remaining articles were subsequently coded using the agreed framework, and differences in interpretation were resolved through discussion until consensus was achieved.

RESULTS AND DISCUSSION

Result

Characteristics of Included Publications

The final synthesis incorporated 34 publications published between 2022 and 2025 that met all eligibility criteria established during the review process. These publications represented diverse forms of evidence, including learner-focused empirical studies, teacher-perspective studies, systematic and narrative reviews, a meta-analysis, conceptual and ethical analyses, one scholarly conference publication, and one contextual study on EFL academic writing. The evidence originated from higher-education contexts in Indonesia, China, Japan, Saudi Arabia, Malaysia, Türkiye, and several other countries, while ChatGPT emerged as the most frequently examined AI tool alongside Grammarly, QuillBot, AI chatbots, automated writing evaluation systems, and other AI-supported writing applications. The distribution of these publications according to evidence type and their respective contributions to the synthesis is presented in Table 1.

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Table 1. Distribution of Included Publications by Evidence Type (N = 34)

Evidence type	Number of publications	Function in the synthesis
Learner-focused empirical studies	17	Reported learner outcomes related to writing performance, self-efficacy, self-regulation, engagement, anxiety, autonomy, and dependency
Teacher-perspective and teacher-focused studies	4	Reported teacher observations, instructional practices, and classroom responses
Systematic reviews, narrative reviews, and meta-analysis	4	Reported broader trends and recurring patterns across previous studies
Conceptual, ethical, and pedagogical analyses	7	Reported issues related to cognitive offloading, authorship, academic integrity, learner agency, and responsible AI use
Scholarly conference publication	1	Reported comparative evidence on AI-supported EFL writing
Contextual EFL writing study	1	Reported baseline challenges in EFL academic writing
Total	34	Integrated evidence base

As shown in Table 1, learner-focused empirical studies accounted for half of the included publications (17 of 34), making them the largest source of evidence within the review. The remaining publications contributed complementary evidence from teacher-based, review, conceptual, ethical, pedagogical, conference, and contextual perspectives. This composition ensured that the synthesis incorporated both direct learner findings and supporting evidence from broader educational and conceptual discussions. The evidence profile presented in Table 1 served as the foundation for the thematic synthesis reported in the subsequent sections.

Theme 1: Generative AI Support for Learner Independence

The first theme comprises publications reporting outcomes associated with AI-supported learner independence in EFL and ESL writing. Across the selected studies, AI-assisted writing activities included idea generation, vocabulary support, grammar checking, drafting, editing, revision, feedback processing, and task completion, while additional findings described improvements in writing confidence, self-efficacy, motivation, engagement, self-regulation, and reduced writing anxiety. Several publications also documented learners' selective use of AI through reviewing, comparing, verifying, accepting, revising, or rejecting AI-generated suggestions during different stages of academic writing. A synthesis of these reported outcomes and the publications contributing to each category is presented in Table 2.

The categories of AI-supported learner independence identified across the reviewed studies are summarised in Table 2. The reported findings were organised into six outcome areas comprising cognitive scaffolding and writing support, writing self-efficacy, motivation and engagement, self-regulation and reflective learning, strategic AI use, instructional support, and baseline EFL academic writing challenges. Each category represents recurring evidence

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identified across the included publications rather than isolated findings from individual studies. The supporting publications associated with each outcome category are presented in Table 2.

Table 2. Synthesis of Publications Reporting AI-Supported Learner Independence in EFL/ESL Writing

Reported outcome area	Summary of reported findings	Supporting publications
Cognitive scaffolding and writing support	AI was used for idea generation, vocabulary support, grammar checking, feedback access, drafting assistance, editing, and revision support.	Song and Song (2023); Waziana et al. (2024); Darwin et al. (2024); Werdiningsih et al. (2024); Apriani et al. (2024); Jacob et al. (2025); Zare et al. (2025); Wei et al. (2025)
Writing self-efficacy, motivation, and engagement	Studies reported writing confidence, motivation, persistence, task engagement, reduced anxiety, and emotional resilience during AI-supported writing activities.	Song and Song (2023); Sari and Han (2024); Waziana et al. (2024); Bouzar et al. (2024); He et al. (2025); Zare et al. (2025)
Self-regulation and reflective learning	Studies reported monitoring, verification, revision, feedback evaluation, self-reflection, and reflective use of AI-generated suggestions.	Apriani et al. (2024); Hapsari and Rizky (2025); Sari and Han (2024); Sarıca and Deneme Gençoğlu (2025); Hossain et al. (2025); He et al. (2025)
Strategic AI use in EFL writing	Publications documented selective AI use for lexical assistance, idea exploration, editing, proofreading, drafting, and language support.	Werdiningsih et al. (2024); Werdiningsih, Marzuki, and Rusdin (2024); Jacob et al. (2025); Balcı (2024)
Instructional support for AI-assisted writing	Studies reported guided prompting, AI-output comparison, source checking, revision activities, teacher guidance, and AI competence development.	Marzuki et al. (2023); Rahma and Fithriani (2024); Moorhouse et al. (2024); Zaimoğlu and Dağtaş (2025); Alafnan et al. (2023)
Baseline EFL academic writing challenges	The contextual study reported academic writing difficulties that formed the background for students' use of AI-supported writing tools.	Batubara and Fithriani (2023)

As indicated in Table 2, the reviewed publications consistently documented AI-supported writing activities across planning, drafting, editing, feedback processing, and revision stages. Learner-related outcomes were reported alongside evidence on self-efficacy, engagement, self-regulation, strategic AI use, and instructional support, while one contextual study described the academic writing challenges underlying students' use of AI. Together, these findings constitute the first thematic category synthesised in this review. The outcome categories presented in Table 2 provide the basis for the next theme concerning AI-related dependency.

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Theme 2: Generative AI and Learner Dependency

The second theme summarises publications reporting forms of learner dependency associated with AI-supported EFL and ESL writing. The reviewed studies documented cognitive over-reliance, habitual AI consultation, reduced independent writing activity, emotional reliance on AI availability, authorship concerns, academic integrity issues, and long-term writing development. These findings were organised into five recurring categories identified across the included evidence base. A complete summary of the reported dependency-related outcomes and their supporting publications is presented in Table 3.

Table 3. Synthesis of Publications Reporting Learner Dependency and Related Risks in EFL/ESL Writing

Reported risk area	Summary of reported findings	Supporting publications
Cognitive over-reliance and cognitive offloading	Publications reported delegation of planning, evaluating, monitoring, composing, and critical-thinking activities to AI systems.	Zhai et al. (2024); Shum (2024); Zhao et al. (2025); Deep and Chen (2025); Darwin et al. (2024); Arif and Naeem (2025)
Behavioural dependency and habitual AI substitution	Publications reported repeated AI consultation, expansion of AI use across writing stages, and reduced willingness to complete writing tasks independently.	Marisa et al. (2025); Budiyono et al. (2025); Werdiningsih, Marzuki, and Rusdin (2024); Farhi et al. (2023); Bouzar et al. (2024)
Emotional dependency and confidence erosion	Publications reported anxiety, hesitation, reduced confidence, emotional reliance, and difficulty writing when AI access was restricted.	Marisa et al. (2025); Budiyono et al. (2025); Bouzar et al. (2024); He et al. (2025); Rahma and Fithriani (2024)
Academic integrity, authorship, and ethical concerns	Publications reported concerns related to authorship, outsourcing, transparency, verification, responsible use, and accountability for AI-generated content.	Eke (2023); Cotton et al. (2024); Farhi et al. (2023); Alafnan et al. (2023); Hossain et al. (2025); Moorhouse et al. (2024)
Long-term independent writing development	Publications reported differences between AI-assisted writing performance and independent writing performance, including concerns about reduced independent writing practice.	Budiyono et al. (2025); Marisa et al. (2025); Marzuki et al. (2023); Zhao et al. (2025); Deep and Chen (2025); Wei et al. (2025)

As shown in Table 3, dependency-related findings were distributed across cognitive, behavioural, emotional, ethical, and long-term writing-development dimensions. The reviewed studies reported these categories using evidence derived from learner-focused investigations, teacher perspectives, and broader conceptual analyses. Each category reflects recurring patterns identified during the thematic synthesis rather than isolated observations from individual publications. The evidence summarised in Table 3 forms the second thematic area of the review and is followed by the synthesis of conditions associated with the reported outcomes.

Theme 3: Reported Conditions Associated with AI Use Outcomes

The third theme synthesises the conditions reported alongside AI-supported learner independence and AI-related learner dependency across the included publications. Four

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recurring conditions were consistently identified, namely pedagogical structure, critical engagement, AI literacy, and the progressive reduction of AI support, while several studies also reported contextual factors such as pre-existing writing difficulties, learner confidence, teacher guidance, and assessment conditions. These conditions were documented across learner-focused, teacher-focused, and conceptual publications included in the review. A summary of the relationships between the reported conditions and the identified outcome pathways is presented in Figure 2.

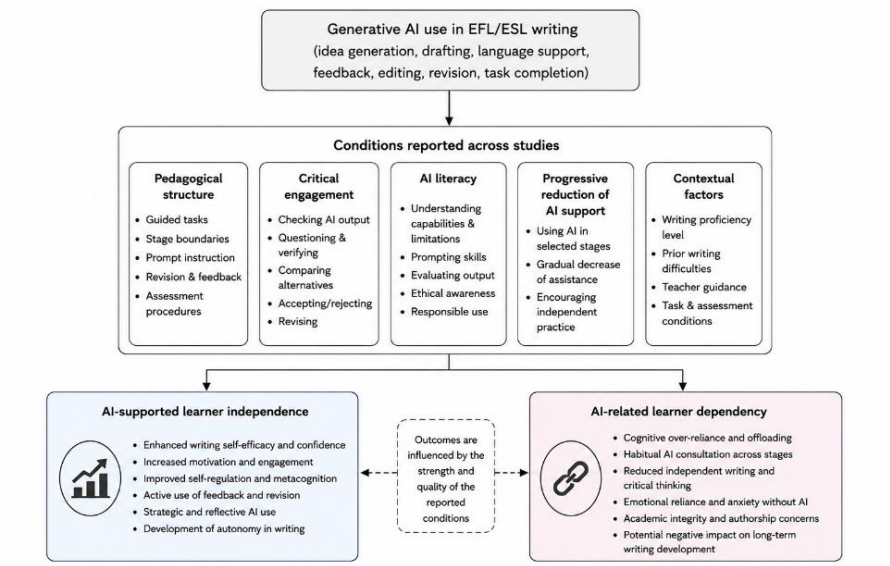

Figure 2. Reported Conditions and Outcome Pathways of Generative AI Use in EFL/ESL Writing

The information presented in Figure 2 organises the reported conditions into two outcome pathways, namely AI-supported learner independence and AI-related learner dependency. The figure also shows that pedagogical structure, critical engagement, AI literacy, and the gradual reduction of AI assistance appeared repeatedly across publications describing writing activities, feedback use, revision practices, AI verification, and classroom implementation. In addition, contextual conditions, including learner characteristics and instructional support, were reported alongside these recurring themes in several studies. The visual synthesis in Figure 2 complements the evidence summarised previously in Table 2 and Table 3 by presenting the distribution of the reported conditions within a single conceptual framework.

Overall, the synthesis identified three major thematic areas comprising AI-supported learner independence, AI-related learner dependency, and the reported conditions accompanying both outcomes. Across the included publications, AI was reported to support activities undertaken during planning, drafting, editing, feedback processing, revision, and task completion, while the evidence base combined learner-focused, teacher-focused, review-based, conceptual, ethical, and contextual publications. These findings were organised through thematic synthesis into the three themes presented in Table 2, Table 3, and Figure 2. The reported evidence presented in this section provides the basis for the discussion of the relationships among these themes in the following section.

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Discussion

From AI Scaffolding to Learner Dependency

The thematic synthesis indicates that the educational impact of generative AI cannot be reduced to a simple distinction between benefits and risks. As reflected in Table 2 and Table 3, learner independence and learner dependency represent interconnected outcomes shaped by how learners distribute cognitive responsibility during writing rather than by the technology itself. This pattern is consistent with the principles of learner autonomy, self-regulated learning, and cognitive offloading, which emphasise that meaningful learning depends on learners maintaining control over planning, monitoring, evaluation, and revision. Accordingly, AI functions as an educational resource only when cognitive ownership remains with the learner throughout the writing process.

From this perspective, AI scaffolding extends learners' capabilities without replacing their intellectual engagement. The studies synthesised in this review show that AI supports writing development when learners compare alternatives, verify AI-generated suggestions, and reflect before revising their texts, a pattern also reported by Hapsari and Rizky (2025) among Indonesian EFL students and by Arif and Naeem (2025) in relation to learner autonomy and critical thinking. Comparable findings from Sari and Han (2024) demonstrate that improvements in self-efficacy, self-regulation, writing anxiety, and writing performance are closely associated with how learners process AI-supported feedback rather than with AI use itself. Collectively, these studies reinforce the view that AI promotes independence only when it strengthens learners' capacity to regulate their own writing decisions.

A different pattern emerges when AI progressively replaces cognitive activities that should remain under learners' control. The synthesis suggests that dependency develops gradually as assistance expands from vocabulary support and grammar correction to idea generation, argument construction, and text production, reflecting the mechanism of cognitive offloading. Similar concerns were identified by Deep and Chen (2025), who associated intensive AI use with challenges related to writing competence, critical thinking, and academic integrity, while Zhao et al. (2025) reported that higher task performance does not necessarily indicate stronger higher-order thinking. Sarıca and Deneme Gençoğlu (2025) likewise found that learners perceived AI-assisted writing as simultaneously supportive and dependency-inducing, indicating that writing improvement and cognitive reliance may develop in parallel.

The findings further indicate that critical engagement distinguishes productive AI use from excessive reliance. Learners who questioned AI-generated responses, compared multiple alternatives, examined unsupported claims, and justified revision decisions remained actively involved in constructing their texts, whereas uncritical acceptance of AI output was consistently associated with dependency-related patterns. Similar observations were reported by Darwin et al. (2024), Werdiningsih et al. (2024), and Farhi et al. (2023), who collectively emphasised critical thinking, academic authenticity, ethical awareness, and evaluation of AI reliability during writing. Viewed together, these studies suggest that critical engagement constitutes the conceptual link through which learner autonomy, self-regulated learning, and cognitive offloading jointly explain why identical AI tools may either strengthen independent writing or foster learner dependency.

The synthesis further indicates that the influence of generative AI is inseparable from the instructional context in which it is used. Across Global EFL settings, AI frequently compensates for limited feedback opportunities, large class sizes, and restricted access to individual writing support, explaining why students often regard AI as an immediate learning resource rather than merely a technological tool. Comparable observations were reported by

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Alafnan et al. (2023) and Waziana et al. (2024), who highlighted the practical value of ChatGPT and AI chatbots for writing instruction while emphasising that sustained writing development still depends on instructional guidance. These findings suggest that AI becomes educationally meaningful when it complements teacher feedback and peer interaction instead of replacing the learning relationships that shape independent writing competence.

The patterns identified in this review also position assessment and AI literacy as interconnected mechanisms influencing students' engagement with AI-supported writing. Assessment that values planning, drafting, revision, and reflection is more likely to sustain learners' cognitive involvement than evaluation focused solely on polished final products, a tendency reflected in the findings of He et al. (2025) and Wei et al. (2025). At the same time, responsible AI use requires learners and teachers to understand the limitations, ethical implications, authorship issues, data privacy, and reliability of AI-generated content, as consistently emphasised by Rahma and Fithriani (2024), Moorhouse et al. (2024), Cotton et al. (2024), and Eke (2023). Considered together, these studies indicate that assessment practices and AI literacy operate as complementary conditions that shape whether AI supports reflective learning or reinforces dependency.

The present review extends previous discussions by synthesising learner independence and learner dependency within a single conceptual framework rather than treating them as separate educational outcomes. This contribution should be interpreted alongside several limitations, including the restriction to fully open-access English-language publications, variation in study characteristics and definitions, the rapidly evolving nature of generative AI, and the use of thematic synthesis instead of meta-analysis. These limitations suggest that the reported patterns represent conceptual relationships across the available evidence rather than precise estimates of effect size or causal influence. Future investigations employing longitudinal, experimental, and mixed-methods designs are therefore needed to examine how different patterns of AI use shape the long-term development of independent academic writing.

CONCLUSION

This Systematic Literature Review demonstrates that the educational impact of generative artificial intelligence in EFL/ESL academic writing is determined more by the pedagogical conditions governing its use than by the technology itself. The synthesis answers the research objective by showing that AI supports learner independence when it promotes critical engagement, self-regulated learning, reflective revision, and learner agency, but fosters learner dependency when it progressively replaces cognitive processes involved in planning, composing, and evaluating academic writing. The principal contribution of this review is the scaffold-to-dependency framework, which integrates learner independence and learner dependency within a single conceptual perspective and demonstrates that pedagogical design, AI literacy, and the regulation of AI assistance mediate movement between these two outcomes. These findings highlight the need for higher education institutions to integrate AI through responsible instructional design, assessment, and institutional policy while encouraging future longitudinal, experimental, and mixed-methods research to validate and extend this conceptual framework across diverse EFL contexts.

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