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**Digital writing in EFL education: developing creativity, critical thinking,
and written communication**

*Escritura digital en la educación EFL: desarrollo de la creatividad, el
pensamiento crítico y la comunicación escrita*

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ABSTRACT

Introduction: Digital writing has become an important resource in English as a Foreign Language (EFL) education because it integrates technological tools, collaboration, feedback, creativity, and higher-order thinking processes. This study analyzes the relationship between digital writing and the development of creativity, critical thinking, and written communication in EFL educational contexts. **Methodology:** A systematic literature review with a quantitative-descriptive approach was conducted following the PRISMA 2020 guidelines. Studies published between 2020 and 2026 were searched in Scopus, Web of Science, ScienceDirect, ERIC, and Google Scholar. After the identification, screening, eligibility, and selection processes, 17 scientific articles were included.

Results: The findings showed that digital storytelling, collaborative writing, peer feedback, mobile-assisted learning, and artificial intelligence tools can support idea generation, information analysis, text revision, and the improvement of written communication.

Conclusions: Digital writing represents a pedagogical strategy with the potential to strengthen linguistic, creative, and cognitive competencies simultaneously in EFL learners. Its effectiveness depends on appropriate pedagogical integration, active learner participation, and the responsible use of technology.

Keywords: digital writing, EFL, creativity, critical thinking, written communication.

RESUMEN

Introducción: La escritura digital se ha convertido en un recurso relevante dentro de la enseñanza del inglés como lengua extranjera (EFL), debido a su capacidad para integrar herramientas tecnológicas, colaboración, retroalimentación, creatividad y procesos de pensamiento de orden superior. Este estudio analiza la relación entre la escritura digital y el desarrollo de la creatividad, el pensamiento crítico y la comunicación escrita en contextos educativos EFL.

Metodología: Se realizó una revisión sistemática de la literatura con enfoque cuantitativo-descriptivo, siguiendo las directrices PRISMA 2020. La búsqueda incluyó estudios publicados entre 2020 y 2026 en Scopus, Web of Science, ScienceDirect, ERIC y Google Scholar. Después del proceso de identificación, cribado, evaluación y selección, se incluyeron 17 artículos científicos.

Resultados: Los hallazgos evidenciaron que estrategias como la narración digital, la escritura colaborativa, la retroalimentación entre pares, el aprendizaje móvil y las herramientas de inteligencia artificial favorecen la generación de ideas, el análisis de información, la revisión de textos y la mejora de la comunicación escrita.

Conclusiones: La escritura digital representa una estrategia pedagógica con potencial para fortalecer simultáneamente competencias lingüísticas, creativas y cognitivas en estudiantes EFL. Su efectividad depende de una integración pedagógica adecuada, la participación activa del estudiante y el uso responsable de la tecnología.

Palabras clave: escritura digital, EFL, creatividad, pensamiento crítico, comunicación escrita.



1. INTRODUCTION

The rapid development of digital technologies has transformed the teaching and learning of English as a Foreign Language (EFL), particularly in the area of writing. Writing is no longer limited to traditional paper-based activities, as learners increasingly use digital platforms, collaborative applications, social media, multimedia resources, and artificial intelligence-supported tools to plan, produce, revise, and share written texts. Within this context, digital writing can be understood as the production and development of written communication through technological environments that provide opportunities for interaction, feedback, multimodality, and collaboration. These environments may encourage learners to become more actively involved in the writing process and to develop linguistic and cognitive abilities required for meaningful communication. Li (2023), for example, found that online collaborative writing instruction positively contributed to EFL learners' writing performance, motivation, and writing self-efficacy, while Zou et al. (2023) demonstrated that technology-enhanced collaborative writing and feedback can support both writing development and critical thinking.

Previous research has increasingly emphasized the relationship between technology-supported writing and higher-order thinking skills in EFL education. Yin et al. (2023), in a systematic review of critical-thinking pedagogies in EFL writing, identified the growing importance of instructional strategies that encourage learners to analyze information, evaluate arguments, solve problems, and construct reasoned written responses. Similarly, Jiang et al. (2024) reported that technology-aided instruction can contribute to the development of critical-thinking skills and English argumentative writing. Mobile and social-media-based approaches have also shown promising results. Zalani and Yousofi (2024) found significant improvements in critical thinking among EFL learners who received instruction supported by Instagram, whereas Zalani et al. (2024) showed that mobile-assisted critical writing instruction can positively influence learners' writing proficiency. These findings suggest that digital environments can function not merely as tools for text production but also as spaces in which learners examine ideas, make decisions, evaluate information, and communicate their reasoning more effectively.



Creativity represents another important dimension of digital writing. Digital environments provide learners with opportunities to combine language with images, audio, visual organization, collaborative resources, and other forms of multimodal expression. Digital storytelling, in particular, has attracted attention as a pedagogical strategy for encouraging students to generate original ideas and construct meaningful narratives. Ajabshir (2024) reported positive effects of digital storytelling on EFL writing and learner engagement, while Chen and Yeh (2025) demonstrated that collaborative digital storytelling can enhance both EFL writing and creativity. Consequently, digital writing may allow learners to move beyond mechanical language exercises and engage in more flexible processes of generating, organizing, developing, and expressing ideas.

More recently, artificial intelligence has expanded the possibilities of digital writing by providing immediate feedback, suggestions, linguistic support, and opportunities for revision. Alnemrat et al. (2025) found that both AI-generated and teacher-generated feedback produced significant improvements in EFL argumentative writing, suggesting that technologically supported feedback can complement conventional instruction when appropriately guided. Likewise, Alshehri et al. (2026) found that structured human–AI collaboration was associated with improvements in academic writing and digital critical thinking among university EFL learners. Nevertheless, technological tools alone do not automatically produce meaningful learning; their educational value depends on how students critically evaluate information, make independent decisions, revise their ideas, and maintain an active role in the writing process. Therefore, investigating digital writing from a multidimensional perspective is necessary to understand not only its relationship with writing performance but also its potential connection with creativity, critical thinking, and effective written communication.

The relevance of the present study lies in the increasing need for EFL education to prepare learners for communication within digitally mediated academic, professional, and social environments. Although previous studies have examined technology-supported writing, collaborative writing, mobile learning, digital storytelling, critical thinking, and AI-assisted feedback, these dimensions are frequently investigated separately. There is therefore value in examining digital writing together with several competencies that are essential for effective language learning. Understanding these relationships may provide useful



evidence for teachers and educational institutions seeking to design learning experiences in which technology supports not only linguistic accuracy but also idea generation, reflection, evaluation, argumentation, and meaningful written expression. The integration of digital writing into EFL education may consequently contribute to a more active and learner-centered approach in which students use English to create, question, organize, and communicate knowledge.

Accordingly, the general objective of this study is to systematically examine the scientific literature on digital writing and its relationship with creativity, critical thinking, and written communication in English as a Foreign Language (EFL) education. Specifically, the study seeks to identify the main digital writing strategies and technological tools reported in recent research, analyze their reported contributions to these competencies, and synthesize the principal trends, findings, and research gaps in the field. To achieve this objective, the study adopts a systematic literature review with a quantitative-descriptive approach, following the PRISMA 2020 guidelines for the identification, screening, eligibility assessment, and inclusion of relevant scientific publications.

2. THEORETICAL FRAMEWORK

Digital writing has become an important component of English as a Foreign Language (EFL) education because learners increasingly produce, revise, and communicate written information through technological environments. From an educational perspective, digital writing goes beyond typing conventional texts; it involves digital platforms, multimedia resources, online feedback systems, collaborative environments, and emerging artificial intelligence tools throughout the writing process. These resources can help learners generate ideas, organize information, revise texts, interact with others, and communicate more effectively. Consequently, digital writing can be considered a learning environment in which linguistic development interacts with cognitive competencies such as creativity and critical thinking.

One of the central dimensions associated with digital writing is creativity. In EFL education, creativity refers to learners' capacity to generate, develop, reorganize, and communicate original or meaningful ideas through the target language. Digital environments may facilitate this process by allowing students to combine written language with visual, interactive, and



multimedia elements. Belda-Medina (2022) examined digital storytelling among EFL teacher candidates and found that it supported creativity and critical thinking while encouraging inclusive participation. Digital storytelling also requires learners to make decisions about content, organization, linguistic expression, images, and narrative structure, providing greater opportunities for creative expression.

The importance of creativity in technology-supported EFL environments is also reinforced by Al-khresheh (2022), who investigated creativity in online teaching classrooms within the Saudi EFL context. The study showed that digitally mediated instruction required educators to adapt teaching practices and develop new strategies for technology-based learning. From this perspective, creativity involves not only original ideas but also adaptation, problem solving, experimentation, and flexible use of technological resources. These aspects are particularly relevant to digital writing, where learners must explore different ways of presenting, organizing, and revising written information.

Another fundamental dimension is critical thinking, understood as the ability to analyze information, evaluate evidence, compare perspectives, identify relevant ideas, make reasoned judgments, and formulate conclusions. In EFL contexts, effective writing requires learners to do more than reproduce vocabulary and grammar; they must evaluate information, establish logical relationships, and construct coherent arguments. Pang (2022) explains that web-based learning environments and social media can support collaborative activities, interaction, feedback, and challenging tasks that encourage higher-order thinking. Such environments may help students move from memorization toward analysis, evaluation, reflection, and creation.

Digital interaction can also strengthen critical thinking through peer evaluation and collaborative revision. Cao et al. (2022), in their review of online peer feedback in ESL/EFL writing, identified several benefits of technology-mediated feedback. Learners can read others' work, identify strengths and weaknesses, compare different forms of expression, provide recommendations, and reconsider their own writing. These processes require evaluative judgments and can transform writing into an interactive activity that develops awareness of language, organization, audience, and textual quality. Thus, digital writing may contribute to critical thinking when technology facilitates reflection, evaluation, and revision.



Written communication is another key dimension and refers to the ability to communicate ideas through clear, coherent, organized, and linguistically appropriate texts. It involves vocabulary selection, grammatical accuracy, organization, cohesion, coherence, idea development, and audience awareness. Hassen, Adugna, and Bogale (2024) examined scaffolding strategies in EFL writing instruction and found that structured support contributed to improved writing achievement. In digital contexts, scaffolding may be provided through prompts, templates, feedback systems, digital resources, collaborative tools, and guided revision. Therefore, digital writing may support written communication when technology functions as instructional support rather than merely as a means of text production.

Recent developments in artificial intelligence have further expanded the role of digital tools in EFL writing. Thi et al. (2025) investigated Vietnamese EFL students' perceptions of AI-powered writing tools and found perceived benefits related to grammar, vocabulary, writing efficiency, idea development, and language accuracy. These tools were used during several stages of writing, including idea generation, organization, paraphrasing, grammar checking, vocabulary improvement, and revision. However, concerns were also identified regarding excessive reliance on technology, inaccurate information, plagiarism, and possible limitations to independent critical thinking. These findings suggest that AI tools can support written communication, but their effectiveness depends on critical and responsible use.

This relationship between technological support and learner independence is especially relevant in AI-assisted writing environments. Godoy (2026) examined generative artificial intelligence as cognitive scaffolding in EFL academic writing classrooms and found that structured AI-supported activities could contribute to students' agency, metalinguistic awareness, and authorial voice. AI was not treated as a replacement for students' writing processes; instead, AI-generated material functioned as initial support that learners later analyzed, modified, and reconstructed. This approach emphasizes that meaningful digital writing requires active learner participation, critical evaluation, and personal decision-making.

Taken together, these studies provide a theoretical basis for understanding the relationship between digital writing, creativity, critical thinking, and written communication in EFL education. Digital writing represents the technological and pedagogical



environment in which learners create and revise texts, while creativity, critical thinking, and written communication represent interconnected competencies that may develop through meaningful engagement with digital writing activities. Creativity supports idea generation, critical thinking enables analysis and evaluation, and written communication allows these ideas and judgments to be expressed coherently.

From this theoretical perspective, digital writing may support all three competencies when learners actively participate in the writing process. Digital platforms can stimulate creativity through brainstorming and multimodal expression, encourage critical thinking through interactive tasks and peer feedback, and strengthen written communication through revision tools and instructional scaffolds. Nevertheless, the educational benefits of technology depend largely on how digital tools are integrated into teaching and learning. Excessive dependence on automated systems may reduce independent reasoning, whereas pedagogically guided use can encourage greater autonomy, reflection, creativity, and effectiveness in writing. Accordingly, this theoretical framework provides the conceptual basis for systematically examining how previous research has addressed the contributions and relationships of digital writing with creativity, critical thinking, and written communication in EFL educational contexts.

3. METHODOLOGY

a) Study Approach

This study adopts a quantitative-descriptive approach based on a systematic literature review. The quantitative component is reflected in the identification, classification, and numerical distribution of scientific publications according to variables such as year of publication, database, methodological approach, educational context, and the dimensions addressed in each study. The descriptive component focuses on examining the characteristics and main findings of previous research concerning digital writing, creativity, critical thinking, and written communication in English as a Foreign Language (EFL) education.

A systematic literature review was selected because it enables researchers to identify, organize, evaluate, and synthesize the available scientific evidence through an explicit and reproducible procedure. Paul and Criado (2020) emphasize that systematic literature reviews should follow clearly defined procedures to provide a comprehensive understanding of



existing knowledge while identifying research trends and gaps. Similarly, Sauer and Seuring (2023) highlight the importance of transparent search, screening, evaluation, and synthesis procedures to strengthen the rigor and replicability of systematic reviews.

The study therefore constitutes documentary, descriptive, and non-experimental research, since no variables are experimentally manipulated and the analysis is based exclusively on previously published scientific studies.

b) Method

The research follows a systematic literature review design guided by the PRISMA 2020 framework (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). PRISMA provides a structured procedure for transparently reporting the identification, screening, eligibility assessment, and final inclusion of scientific documents in a systematic review.

According to Page et al. (2021), PRISMA 2020 incorporates updated recommendations for reporting how studies are identified, selected, evaluated, and synthesized. The framework includes a 17-item checklist and revised flow diagrams that facilitate transparent documentation of the review process.

In the present study, PRISMA was adapted to the field of EFL education and digital writing. The review was organized around four methodological phases: search, evaluation, analysis, and synthesis. These phases ensured that the studies included in the final sample were directly related to the research topic and fulfilled predetermined methodological and temporal criteria.

c) Phases of the Study

Phase 1: Search

The first phase consisted of systematically identifying potentially relevant scientific publications. Searches were conducted in five multidisciplinary and education-related academic sources: Scopus, Web of Science, ScienceDirect, ERIC, and Google Scholar. The final literature search was conducted on May 6, 2026.

The search strategy was constructed around four principal concepts: digital writing, English as a Foreign Language (EFL), creativity, critical thinking, and written communication. Related terms were combined using the Boolean operators AND and OR. Search equations were adapted to the characteristics and search fields available in each database.



In Scopus, the search was conducted in the title, abstract, and keyword fields using the following equation:

TITLE-ABS-KEY (("digital writing" OR "technology-enhanced writing" OR "online writing" OR "digital storytelling" OR "collaborative digital writing" OR "AI-assisted writing") AND ("EFL" OR "English as a Foreign Language") AND ("creativity" OR "critical thinking" OR "written communication" OR "writing performance"))

In Web of Science, the Topic field, which searches titles, abstracts, author keywords, and Keywords Plus, was used with the following equation:

TS= (("digital writing" OR "technology-enhanced writing" OR "online writing" OR "digital storytelling" OR "collaborative digital writing" OR "AI-assisted writing") AND ("EFL" OR "English as a Foreign Language") AND ("creativity" OR "critical thinking" OR "written communication" OR "writing performance"))

In ScienceDirect, searches were conducted using title, abstract, and keyword-related terms with the following combination:

("digital writing" OR "technology-enhanced writing" OR "digital storytelling" OR "collaborative digital writing" OR "AI-assisted writing") AND ("EFL" OR "English as a Foreign Language") AND ("creativity" OR "critical thinking" OR "written communication")

In ERIC, the search included title, abstract, descriptor, and keyword-related fields using the following combination:

("digital writing" OR "technology-enhanced writing" OR "digital storytelling" OR "collaborative writing" OR "AI-assisted writing") AND ("EFL" OR "English as a Foreign Language") AND ("creativity" OR "critical thinking" OR "written communication")

In Google Scholar, the following principal combinations were applied:

"digital writing" AND "EFL" AND creativity

"digital writing" AND "EFL" AND "critical thinking"

"digital writing" AND "EFL" AND "written communication"

"digital storytelling" AND "EFL writing"

"collaborative digital writing" AND EFL

"AI-assisted writing" AND EFL

Google Scholar was used as a complementary source to broaden the retrieval of relevant publications that might not have been indexed in the other databases. Results were



examined in order of relevance, and the first 200 results generated by the principal search combinations were screened. Duplicate records and studies that did not meet the eligibility criteria were excluded following the same procedure applied to the other information sources. Across all sources, the main filters were: publication period from January 2020 to May 6, 2026, English or Spanish language, full-text availability, and scientific journal articles relevant to EFL or foreign-language learning contexts. Studies addressing digital writing, technology-assisted writing, digital storytelling, online collaborative writing, mobile-assisted writing, peer feedback, or AI-supported writing were considered when they examined at least one of the review dimensions: creativity, critical thinking, or written communication.

The database-specific search strategy, use of Boolean operators, predefined fields, temporal limits, and eligibility filters were established to improve the transparency and reproducibility of the review process.

Phase 2: Evaluation

During the evaluation phase, all identified records were subjected to a systematic screening and eligibility process. First, duplicate records retrieved from more than one database were identified and removed. The remaining records were subsequently evaluated according to the predefined inclusion and exclusion criteria.

The study-selection process was carried out independently by **two reviewers**. During the first screening stage, both reviewers examined the titles and abstracts of the identified publications to determine their correspondence with the research objective. Records clearly unrelated to EFL education, digital writing, creativity, critical thinking, or written communication were excluded.

Publications classified as potentially relevant by at least one reviewer were retained for full-text assessment. During this second stage, the complete articles were independently examined to determine whether they fulfilled all eligibility requirements. Disagreements between the reviewers regarding the inclusion or exclusion of a study were discussed until consensus was reached. When necessary, the eligibility criteria were re-examined before a final decision was made.

Theses, dissertations, book chapters, book reviews, editorials, opinion articles, conference abstracts without complete papers, non-academic publications, studies exclusively focused on English as a first language, publications outside the established period,



documents without accessible full text, and studies with insufficient methodological information were excluded.

The reasons for exclusion during the full-text assessment were documented and subsequently incorporated into the PRISMA 2020 study-selection flow diagram. This procedure contributed to reducing selection bias and improving the transparency and reproducibility of the systematic review.

Phase 3: Analysis

In the third phase, the selected studies were analyzed using a structured data extraction matrix. Information extracted from each article included:

- Author(s) and publication year.
- Country or geographical context.
- Research objective.
- Educational level and population.
- Methodological approach.
- Digital writing strategy or technological tool.
- Variables examined.
- Main findings.
- Relationship with creativity.
- Relationship with critical thinking.
- Relationship with written communication.

The information was subsequently classified into thematic categories corresponding to the main thematic dimensions of the review: digital writing, creativity, critical thinking, and written communication.

Quantitative descriptive indicators, such as frequencies and publication distributions, were also considered in order to identify research tendencies within the selected literature.

Phase 4: Synthesis

The final phase involved integrating and interpreting the evidence identified in the selected publications. Similar findings were grouped into thematic categories to determine recurring patterns, methodological trends, technological approaches, and research gaps.

The synthesis particularly examined how digital writing environments have been associated with students' creativity, critical-thinking abilities, and written communication in



EFL contexts. Contradictory or differing findings were also considered to avoid presenting an exclusively positive interpretation of digital writing.

This systematic process made it possible to construct an integrated understanding of the current state of research and identify areas requiring further investigation.

PRISMA Study Selection Process

The selection of scientific articles was documented using the PRISMA 2020 flow diagram.

The process was organized into identification, screening, eligibility, and inclusion stages.

During the identification stage, a proposed total of 286 records was retrieved from the selected academic databases:

- Scopus: 74 articles
- Web of Science: 58 articles
- ScienceDirect: 61 articles
- ERIC: 43 articles
- Google Scholar: 50 articles

A total of 46 duplicate records were identified and removed, leaving 240 publications for title and abstract screening.

After the initial screening, 137 documents were excluded because they were unrelated to the study dimensions, addressed contexts other than EFL education, or did not focus sufficiently on digital writing. Consequently, 103 articles were considered for full-text assessment.

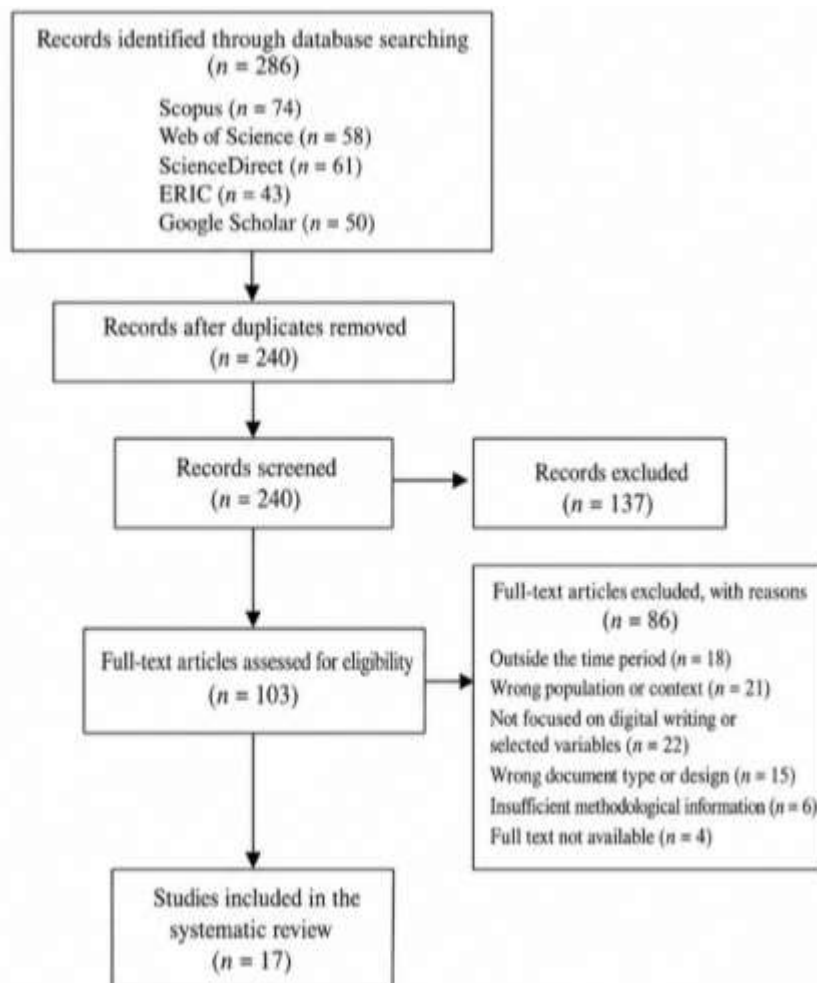
- Publications outside the 2020–2026 period: 18
- Theses and dissertations: 12
- Conference papers or abstracts without full text: 10
- Studies unrelated to the principal dimensions: 34
- Full text unavailable: 5
- Insufficient methodological information: 7

Following the complete screening process, 17 scientific articles fulfilled all eligibility requirements and constituted the final sample included in the systematic literature review.

Figure 1.

PRISMA Method Flow Diagram





Note. The figure describes the identification, screening, eligibility, and inclusion process followed according to the PRISMA 2020 guidelines. Own elaboration based on Page et al. (2021).

d) Sources and Sample

The documentary population consisted of scientific studies addressing digital writing and its relationship with creativity, critical thinking, and written communication within EFL educational contexts.

Five academic information sources were considered: Scopus, Web of Science, ScienceDirect, ERIC, and Google Scholar. These databases were selected because they provide broad coverage of peer-reviewed research related to education, language learning, educational technology, and applied linguistics.



The temporal scope covered publications from January 2020 to May 6, 2026, with the purpose of examining contemporary evidence associated with technological developments in EFL writing education, with the purpose of examining contemporary evidence associated with technological developments in EFL writing education.

The initial proposed search identified 286 records. After duplicate removal, title and abstract screening, full-text assessment, and application of the inclusion and exclusion criteria, the final sample consisted of 17 scientific articles.

e) Inclusion and Exclusion Criteria

The inclusion criteria established for this systematic review were the following:

1. Scientific articles published between January 2020 and May 6, 2026
2. Peer-reviewed journal articles.
3. Studies published in English or Spanish.
4. Research focusing on EFL or foreign-language learning contexts.
5. Studies examining digital writing, technology-assisted writing, online writing, digital storytelling, collaborative digital writing, or AI-supported writing.
6. Publications addressing at least one of the following variables: creativity, critical thinking, or written communication.
7. Articles with accessible full text.
8. Empirical studies, systematic reviews, or theoretically relevant research directly related to the research objective.

The exclusion criteria were:

1. Publications prior to 2020.
2. Theses and dissertations.
3. Book chapters and book reviews.
4. Editorials and opinion articles.
5. Conference abstracts without complete research reports.
6. Duplicate publications.
7. Studies exclusively focused on English as a first language.
8. Publications unrelated to digital writing or the selected dependent variables.
9. Documents with insufficient methodological information.
10. Studies for which the full text could not be accessed.



f) General Procedure

The research procedure began with the formulation of the research objective and the identification of the principal concepts associated with digital writing in EFL education. Based on these concepts, controlled search terms, synonyms, and Boolean combinations were established to construct database-specific search strategies.

Scopus, Web of Science, ScienceDirect, ERIC, and Google Scholar were systematically searched using the predefined equations, search fields, and eligibility filters described in Phase 1.

All identified records were registered and organized before duplicate records were removed. The remaining records were independently screened by two reviewers on the basis of title and abstract. Publications considered potentially eligible were retrieved in full text and independently assessed according to the predefined inclusion and exclusion criteria. Disagreements concerning eligibility were resolved through discussion and consensus between the reviewers.

Google Scholar was used as a complementary source, and the first 200 results retrieved from the principal search combinations were screened in order of relevance. Records identified through Google Scholar were subjected to the same duplicate-removal, screening, eligibility, and inclusion criteria used for the other databases.

The complete selection process was documented using the PRISMA 2020 flow diagram. Subsequently, information from the selected studies was extracted using a standardized matrix and organized according to bibliographic, methodological, contextual, technological, and thematic characteristics.

Finally, the selected publications were analyzed and synthesized to identify patterns in the scientific evidence concerning digital writing and its relationship with creativity, critical thinking, and written communication in EFL education. The systematic character of the procedure, together with the documentation of database-specific search strategies, eligibility criteria, reviewer participation, and study-selection decisions, was intended to strengthen the transparency and reproducibility of the systematic literature review.

g) Methodological Quality Assessment

To strengthen the rigor of the systematic review, the methodological quality of the 17 studies included in the final sample was assessed using criteria adapted to the design of



each publication. Because the review incorporated methodologically heterogeneous studies, including empirical research, systematic reviews, and theoretically relevant studies, a single appraisal tool was not considered sufficient for all documents.

Empirical quantitative and qualitative studies were evaluated according to the clarity of the research objective, appropriateness of the study design, description of the sample or participants, transparency of data collection procedures, adequacy of the analysis, and consistency between the results and conclusions. Systematic reviews were assessed according to the transparency of their search strategy, eligibility criteria, study-selection procedure, synthesis method, and reporting of limitations. Theoretically oriented publications were evaluated on the basis of conceptual clarity, relevance to the research objective, use of scientific evidence, coherence of argumentation, and contribution to the interpretation of digital writing in EFL education.

Each study was classified as having high, moderate, or low methodological quality according to the extent to which it fulfilled the applicable appraisal criteria. Studies presenting major methodological limitations that could substantially compromise the interpretation of their findings were not given the same interpretive weight as studies with stronger methodological quality. The quality assessment was conducted independently by two reviewers, and disagreements were resolved through discussion and consensus.

The methodological appraisal was used to support a cautious interpretation of the evidence. Findings from studies with stronger methodological quality were given greater interpretive weight, whereas findings derived from studies with moderate or limited methodological quality were interpreted more cautiously. This approach was particularly important because the final corpus included studies with heterogeneous methodological designs.

4. RESULTS

The systematic literature review made it possible to identify the main findings regarding the relationship between digital writing and the development of creativity, critical thinking, and written communication in English as a Foreign Language (EFL) education. Following the screening and eligibility process established through the PRISMA 2020 guidelines, 17 scientific articles were included in the final analysis. The selected studies were published



between 2020 and 2026 and were retrieved from academic sources such as Scopus, Web of Science, ScienceDirect, ERIC, and Google Scholar.

The selected publications were analyzed according to the main variables established in this study: digital writing, creativity, critical thinking, and written communication. Additionally, the technological tools, pedagogical strategies, educational contexts, and principal contributions reported in the reviewed studies were considered. Overall, the literature showed that digital writing has been addressed through different technological resources, including digital storytelling, collaborative writing platforms, mobile applications, social networks, online peer-feedback systems, and artificial intelligence-supported writing tools.

Digital Writing in EFL Education

The reviewed studies showed that digital writing has progressively become part of EFL teaching and learning practices. Different technological environments were used to support brainstorming, text production, collaborative writing, feedback, revision, and final publication. Digital storytelling and online collaborative writing were among the strategies frequently associated with active student participation and the construction of meaningful written texts.

Other studies incorporated mobile-assisted learning, social media platforms, online feedback systems, and artificial intelligence tools. These resources provided students with opportunities to interact with written content, receive immediate or peer-generated feedback, organize information, and revise their written production.

The findings therefore indicate that digital writing should not be understood only as the use of computers or digital devices for typing texts. Instead, it represents a broader pedagogical process involving interaction, collaboration, multimodality, feedback, revision, and digital communication.

To ensure traceability between the PRISMA-selected sample and the reported findings, the 17 publications included in the final review were individually characterized according to author and year, country or geographical context, educational level or population, research design, digital tool or strategy, dimension analyzed, and principal finding. Table 1 summarizes the methodological and educational characteristics of the final corpus.

Table 1.

Characteristics of the Studies Included in the Systematic Literature Review



No .	Author / Year	Country / Context	Population / Education Level	Research Design	Digital Tool / Strategy	Dimension Analyzed	Main Finding	Methodological Quality
1	Belda-Medina (2022)	Spain	Not explicitly reported in the manuscript	Empirical study	Digital storytelling	Creativity / Critical thinking	Digital storytelling supported creativity, critical thinking, and inclusive participation.	Pending formal appraisal
2	Al-khresh (2022)	Saudi Arabia	EFL online teaching context	Not explicitly reported in the manuscript	Online teaching and digital resources	Creativity	Digital environment encouraged adaptation, creativity, problem solving, and flexible use of technological resources.	Pending formal appraisal
3	Pang (2022)	China	Not explicitly reported in the manuscript	Not explicitly reported in the manuscript	Web-based learning and social media	Critical thinking	Web-based environment provided opportunities for collaboration, interaction, feedback,	Pending formal appraisal



No .	Author / Year	Country / Context	Population / Education Level	Research Design	Digital Tool / Strategy	Dimension Analyzed	Main Finding	Methodological Quality
4	Cao et al. (2022)	Multiple ESL/EFL contexts	ESL/EFL learners	Review	Online peer feedback	Critical thinking Written communication	and higher-order thinking. Online peer feedback supported text / evaluation, revision, comparison, and awareness of writing quality. Online collaborative writing improved writing performance, motivation, and writing self-efficacy. Strategies requiring analysis, evaluation, interpretation, and justification	Pending formal appraisal
5	Li (2023)	China	Chinese EFL learners	Empirical study	Online collaborative writing	Written communication		Pending formal appraisal
6	Yin et al. (2023)	Multiple EFL contexts	EFL learners	Systematic review	Critical-thinking pedagogies in EFL writing	Critical thinking		Pending formal appraisal



No .	Author / Year	Country / Context	Population / Education Level	Research Design	Digital Tool / Strategy	Dimension Analyzed	Main Finding	Methodological Quality
7	Zou et al. (2023)	Not explicitly reported in the manuscript	Students in technology-enhanced learning	Empirical study	Peer, teacher, and self-feedback	Critical thinking / Written communication	supported critical-thinking development. Technology-enhanced feedback supported collaborative writing, formal critical-thinking tendency, and engagement. Digital storytelling produced	Pending formal appraisal
8	Ajabshiri (2024)	Not explicitly reported in the manuscript	EFL learners	Quasi-experimental study	Digital storytelling	Creativity / Written communication	/ favorable writing outcomes and increased learner engagement.	Pending formal appraisal
9	Jiang et al. (2024)	Higher vocational education context	Higher vocational EFL students	Empirical study	Technology-aided argumentative writing	Critical thinking / Written communication	Technology-aided instruction supported critical-	Pending formal appraisal



No .	Author / Year	Country / Context	Population / Education Level	Research Design	Digital Tool / Strategy	Dimension Analyzed	Main Finding	Methodological Quality
10	Zalani & Yousofi (2024)	Not explicitly reported in the manuscript	EFL learners in the language institutes	Empirical study	Instagram-supported instruction	Critical thinking	thinking development in argumentative writing. Instagram-supported instruction was associated with significant improvements in critical thinking.	Pending formal appraisal
11	Zalani et al. (2024)	Not explicitly reported in the manuscript	EFL learners in the language institutes	Empirical study	Mobile-assisted critical writing	Critical thinking / Written communication	Mobile-assisted critical writing positively influenced writing proficiency.	Pending formal appraisal
12	Hassen et al. (2024)	Not explicitly reported in the manuscript	EFL learners	Empirical study	Writing scaffolding strategies	Written communication	Structured instructional support contributed to improved writing achievement and greater	Pending formal appraisal



Populatio								
No .	Author / Year	Country / Context	n / Education Level	Research Design	Digital Tool / Strategy	Dimension Analyzed	Main Finding	Methodologic al Quality
13	Chen & Yeh (2025)	Not explicitly reported in the manuscript	EFL learners	Empirical study	Collaborative digital storytelling	Creativity / Written communication	learner independence.	Pending formal appraisal
							Collaborative digital storytelling enhanced EFL writing and creative performance.	
14	Alnemr et al. (2025)	Not explicitly reported in the manuscript	EFL learners	Quantitative study	AI-generated and teacher-generated feedback	Written communication	Both AI-generated and teacher-generated feedback contributed to improvements in argumentative writing.	Pending formal appraisal
							Students perceived benefits for grammar, vocabulary, idea development, revision, accuracy,	
15	Thi et al. (2025)	Vietnamese	EFL students	Empirical study	AI-powered writing tools	Written communication / Critical thinking	Students perceived benefits for grammar, vocabulary, idea development, revision, accuracy,	Pending formal appraisal



Population								
No	Author	Country	n /	Research	Digital Tool	Dimension	Main	Methodologic
.	/ Year	/ Context	Education	Design	/ Strategy	Analyzed	Finding	al Quality
al Level								
							and writing efficiency, while also reporting risks of excessive dependence. Structured human–AI collaboration was associated	
16	Alshehr i et al. (2026)	Saudi Arabia	University EFL learners	Empirical study	Structured human–AI collaboration	Critical thinking / Written communication	/ with improvements in academic writing and digital critical thinking. Guided AI use supported learner agency, metalinguistic awareness, revision, and developmen	Pending formal appraisal
17	Godoy (2026)	Not explicitly reported in manuscript	EFL academic writing students	Applied/empirical study	Generative AI as cognitive scaffolding	Critical thinking / Written communication	/ learner agency, metalinguistic awareness, revision, and developmen	Pending formal appraisal



Population								
No .	Author / Year	Country / Context	n / Education Level	Research Design	Digital Tool / Strategy	Dimension Analyzed	Main Finding	Methodologic al Quality
							t of authorial voice.	

Note. The table summarizes the main methodological, contextual, and pedagogical characteristics of the 17 studies included in the systematic literature review. The information was extracted from the selected publications and organized according to author and year, country or context, population or educational level, research design, digital tool or strategy, dimension analyzed, principal finding, and methodological quality. Own elaboration based on the reviewed studies.

Creativity

Regarding creativity, the reviewed studies indicated that digital writing activities favored idea generation, original expression, and multimodal production. Digital storytelling was especially relevant because it allowed students to combine written language with images, audio, videos, and other digital resources.

Technology also enabled learners to explore different ways of presenting and organizing information, encouraging imagination, decision-making, and original content production. Overall, the evidence suggests that creativity is an important dimension of digital writing, particularly when students have autonomy to develop and communicate their own ideas.

Critical Thinking

Critical thinking was another important dimension identified in the literature. Digital writing activities required learners to analyze information, evaluate perspectives, select relevant content, provide feedback, and justify arguments.

Collaborative writing and peer-feedback activities were particularly associated with these processes, as students had to identify strengths and weaknesses, compare different forms of expression, and suggest improvements. Technology-supported argumentative writing also encouraged learners to organize evidence and establish logical relationships among ideas. Thus, digital writing may promote higher-order thinking when activities involve analysis, evaluation, reflection, and decision-making.



Written Communication

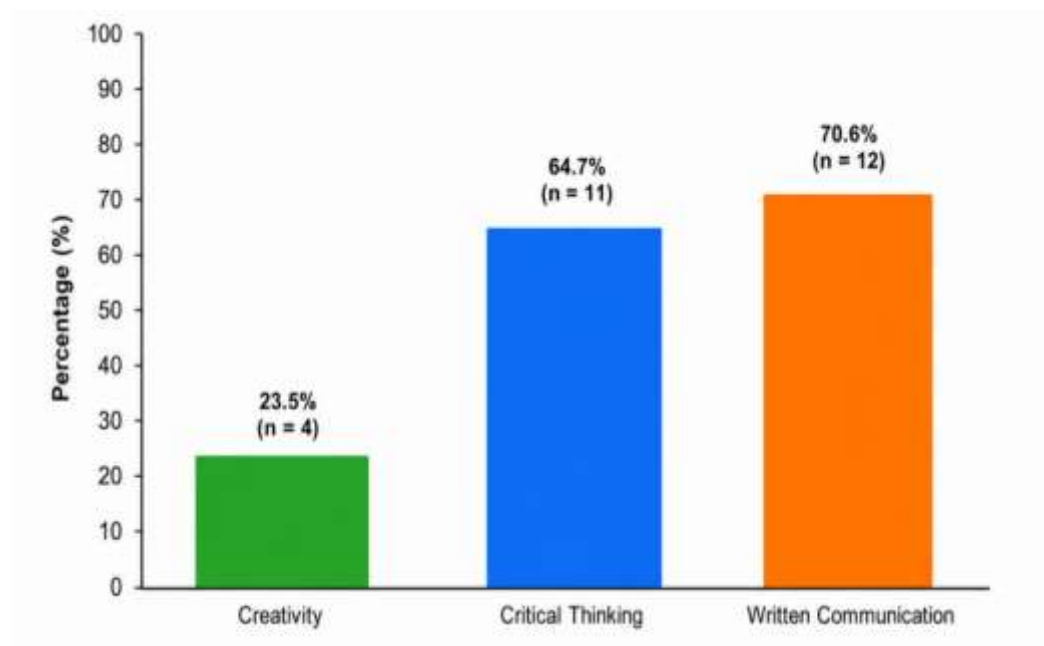
The reviewed studies also reported contributions to written communication. Digital tools supported vocabulary, grammar, coherence, cohesion, organization, revision, and idea development.

Collaborative platforms, online feedback, and AI-supported tools facilitated repeated revision and provided linguistic suggestions related to vocabulary, sentence construction, and text organization. However, students still need to critically evaluate technological suggestions and make independent writing decisions.

Overall, digital writing can support written communication by facilitating the planning, production, revision, and improvement of EFL texts.

Figure 2.

Distribution of the Main Dimensions Identified in the Reviewed Studies



Note. The figure shows the absolute frequency and percentage of the 17 studies addressing each analytical dimension. Creativity was examined in 4 studies (23.5%), critical thinking in 11 studies (64.7%), and written communication in 12 studies (70.6%). Percentages are not mutually exclusive because individual studies could address more than one dimension. Own elaboration based on the systematic review matrix.



Table 2*Matrix of Digital Tools and Pedagogical Strategies Identified in EFL Writing Studies*

Digital Tool or Strategy	Pedagogical Use / Activity	Main Dimension	Educational Context
Digital storytelling	Creation of multimodal narratives combining written texts, images, audio, and digital resources	Creativity / Written Communication	EFL secondary and higher education
Online collaborative writing	Collaborative production, organization, and revision of written texts	Written Communication / Critical Thinking	EFL classrooms and university contexts
Online peer feedback	Evaluation of classmates' texts and provision of recommendations for improvement	Critical Thinking / Written Communication	Secondary and higher EFL education
Mobile-assisted writing	Production and revision of written activities through mobile devices and applications	Written Communication	Language institutes and EFL classrooms
Social media platforms	Interaction, publication, discussion, and development of digital written content	Creativity / Critical Thinking	EFL learning environments
Artificial intelligence tools	Generation of ideas, linguistic feedback, grammar correction, vocabulary support, and revision	Written Communication / Critical Thinking	University EFL education
Digital collaborative platforms	Sharing, editing, and developing written texts in real time	Written Communication / Creativity	Secondary and higher education
Technology-supported argumentative writing	Organization of arguments, evaluation of information, and development of evidence-based texts	Critical Thinking	Higher EFL education

Note. Digital tools and pedagogical strategies identified in the reviewed literature and their relationship with the principal study variables. Own elaboration.

Relationship Between the Studied Variables

The synthesis of the selected studies revealed an interconnected relationship among the principal variables. Digital writing functions as the technological and pedagogical environment in which students participate in different writing activities, while



creativity, critical thinking, and written communication represent competencies that may be developed through these experiences.

Creativity was particularly related to activities involving digital storytelling, multimedia production, and flexible forms of written expression. Critical thinking appeared more frequently in collaborative writing, argumentative writing, peer-feedback activities, and tasks involving the evaluation of information. Written communication was associated with almost all digital writing strategies because technological tools were generally used to support the organization, production, revision, and improvement of written texts.

Table 3.

Relationship Between Digital Writing Strategies and the Main Study Variables

<i>Digital Writing Strategy</i>	<i>Creativity</i>	<i>Critical Thinking</i>	<i>Written Communication</i>
<i>Digital storytelling</i>	✓	✓	✓
<i>Collaborative digital writing</i>	✓	✓	✓
<i>Peer feedback</i>		✓	✓
<i>Mobile-assisted writing</i>	✓	✓	✓
<i>Social media-based writing</i>	✓	✓	✓
<i>AI-assisted writing</i>	✓	✓	✓
<i>Digital argumentative writing</i>		✓	✓

Note. The check marks indicate the principal relationships identified between digital writing strategies and the variables analyzed in the reviewed studies. Own elaboration.

The results demonstrate that written communication represents a transversal component across most digital writing strategies, while critical thinking is strongly associated with activities involving evaluation, argumentation, feedback, and information analysis. Creativity, meanwhile, is particularly evident in activities that provide learners with opportunities for original, multimodal, and autonomous expression.

In general, the systematic review suggests that digital writing can contribute simultaneously to linguistic, cognitive, and creative development in EFL education. Nevertheless, the effectiveness of technological resources depends on the pedagogical strategies used by teachers and the degree of active participation maintained by students. Therefore, technology appears to produce more meaningful educational benefits when it functions as a support for



the writing process rather than as a replacement for learners' thinking, decision-making, and authorship.

5. DISCUSSION

The findings of this systematic review indicate that digital writing is an important pedagogical resource for supporting creativity, critical thinking, and written communication in EFL education. Across the studies analyzed, digital environments provided opportunities for idea generation, collaboration, feedback, revision, multimodal production, and interaction, suggesting that digital writing can contribute to linguistic development and higher-order thinking when integrated through purposeful pedagogical activities.

Regarding creativity, digital storytelling, multimedia resources, social media, and collaborative platforms provided learners with opportunities to generate original ideas and express them through different modes. Belda-Medina (2022) reported that digital storytelling promoted creativity and critical thinking among EFL teacher candidates, while Chen and Yeh (2025) found positive effects on EFL writing and creative performance. These findings suggest that creativity is strengthened when learners combine textual, visual, and digital resources.

Critical thinking was also closely associated with digital writing. Learners were frequently required to evaluate information, compare ideas, construct arguments, revise texts, and provide feedback. Pang (2022) emphasized the potential of web-based environments to promote critical thinking and engagement, while Yin et al. (2023) highlighted strategies involving analysis, evaluation, interpretation, and justification. Similarly, Jiang et al. (2024) reported improvements in critical-thinking skills through technology-supported argumentative writing.

Peer interaction was another important component. Online collaborative writing and peer feedback encouraged learners to evaluate texts, recognize strengths and weaknesses, and reconsider their own writing decisions. Cao et al. (2022) identified benefits of online peer feedback, while Zou et al. (2023) reported positive effects of technology-enhanced feedback on collaborative writing, critical thinking, and engagement.

Regarding written communication, digital tools supported brainstorming, organization, drafting, revision, vocabulary development, grammar correction, and editing. Li (2023)



found that online collaborative writing improved writing performance, motivation, and self-efficacy, while Hassen et al. (2024) emphasized the importance of scaffolding for improving EFL writing achievement.

Artificial intelligence has further expanded digital writing possibilities by providing immediate feedback, linguistic support, and assistance with revision. Alnemrat et al. (2025) found that both AI-generated and teacher-generated feedback contributed to improvements in argumentative writing, while Thi et al. (2025) reported perceived benefits related to grammar, vocabulary, idea development, and writing efficiency.

However, these benefits should be interpreted cautiously. Excessive dependence on automated systems may affect autonomy, authorship, and independent reasoning. Godoy (2026) emphasized the use of generative AI as cognitive scaffolding rather than as a replacement for learners' intellectual participation, while Alshehri et al. (2026) showed that structured human-AI collaboration may support academic writing and digital critical thinking when learners remain actively involved.

The review also showed that creativity, critical thinking, and written communication are interconnected. Creativity supports idea generation, critical thinking allows learners to evaluate and refine those ideas, and written communication enables them to express them coherently. This explains why strategies such as digital storytelling, collaborative writing, peer feedback, and AI-assisted revision were associated with more than one dimension.

Overall, digital writing should not be understood as a guarantee of improved EFL learning. Its effectiveness depends on teacher guidance, students' digital competence, access to technological resources, the nature of the writing activity, and learner engagement. Therefore, digital technologies should function as pedagogical supports that promote active participation, reflection, creativity, and responsible decision-making.

6. CONCLUSION

The systematic review identified predominantly favorable evidence regarding digital writing in EFL education, particularly in relation to creativity, critical thinking, and written communication. However, these findings should be interpreted considering the methodological heterogeneity and quality of the studies included.



Overall, the evidence suggests that digital writing may support linguistic, cognitive, and creative development when appropriately integrated into EFL instruction. Nevertheless, the strength of these conclusions varies according to the methodological quality and design of the available studies.

The evidence also showed that creativity, critical thinking, and written communication are closely interconnected. Digital storytelling, collaborative writing, peer feedback, mobile-assisted activities, and AI-supported writing were among the strategies that most clearly reflected this relationship.

Future research should examine the long-term effects of digital writing through experimental and longitudinal designs, include larger and more diverse samples, and compare specific technological tools and pedagogical strategies. Greater attention should also be given to reliable instruments for assessing creativity, critical thinking, and written communication.

Digital writing is likely to become increasingly integrated with artificial intelligence, collaborative platforms, adaptive systems, and multimodal technologies. Its educational value will depend on maintaining a balance between technological support and learners' intellectual autonomy. Therefore, digital writing should be used not only to improve writing efficiency, but also to develop learners who can think critically, create independently, communicate effectively, and use technology responsibly.

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CONFLICT OF INTEREST

None.

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