Foreign Language Instruction Probe
Vol. 4, No. 2, Nov 2025
https://jurnal.stit-buntetpesantren.ac.id/index

DOI: https://doi.org/10.54213/flip
p-ISSN: 2830-5949
e-ISSN: 2830-4837

Rethinking Web-Based Writing Instruction Pedagogy : A Critical Literature Review

Amin Basir[1]
English Language Teaching Department, Faculty of Tarbiyah and Teacher, UIN Siber Syekhnurjati Cirebon, Indonesia[1]
aminb@uinssc.ac.id[1]

Zakky Yavani[2]
English Language Teaching Department, Faculty of Tarbiyah and Teacher, UIN Siber Syekhnurjati Cirebon, Indonesia[2]
zakky@uinssc.ac.id[2]

Received: Sept 24, 2025
Revised: Oct 15, 2025
Accepted: Nov 2, 2025

***Corresponding author:**
Amin Basir, English Language Teaching Department, Faculty of Tarbiyah and Teacher, UIN Siber Syekhnurjati Cirebon, Indonesia

Abstract

This study aims to critically analyze the strategies, assessment practices, and challenges associated with web-based writing in EFL and ESL contexts, based on research published between 2015 and 2025. Using a Critical Literature Review (CLR) approach, the study systematically examined peer-reviewed journal articles, conference papers, and book chapters from reputable academic databases. The review identified key strategies that enhance learner engagement, such as collaborative writing tools, process-based approaches, and multimodal resources. Assessment practices have shifted toward formative, technology-enhanced methods, including peer feedback and digital portfolios, though issues related to validity and teacher readiness remain. Major challenges encountered include unequal access to digital tools, gaps in digital literacy, and academic integrity concerns. This review provides valuable insights for educators, learners, and researchers aiming to improve web-based writing instruction and assessment through informed, evidence-based practices.
Keywords: Web-based writing, instructional strategies, technology-enhanced assessment, digital literacy, academic integrity, EFL writing.

To cite this article (Gaya APA Edisi 7th): Yasin, A. A. (2026). Penguatan Pendidikan Karakter Melalui Media Game Online. *Foreign Language Instruction Probe.* https://doi.org/10.54213/flip

Introduction

The incorporation of digital technologies into education has revolutionized writing pedagogy with Web-Based Writing Instruction (WBWI), shifting from traditional practices to more autonomous, accessible, and feedback-rich learning. With the aid of tools like Automated Writing Evaluation (AWE) and collaborative platforms, WBWI has played a central role in English Language Teaching (ELT), especially in preparing second and foreign language learners for the prevailing demands of communication in modern times (Zhai & Ma, 2022; Yim & Warschauer, 2017). This transformation has made WBWI a promising pedagogical approach to improving the process and outcomes of writing instruction across various educational contexts.

One of WBWI's strengths is that it can offer immediate feedback, collaboration and learner autonomy. Some tools, including Grammarly, ChatGPT, and Google Docs, can improve writing performance by providing support in grammar, idea development, and real-time peer feedback (Jeong, 2016; Wahyuni & Arieffiani, 2022). In EFL contexts such as Indonesia, where individualized instruction is often lacking, WBWI provides inclusive and scalable learning opportunities (Fan & Ma, 2022; Miranty et al., 2023). These advantages indicate that WBWI can extend learning opportunities, though the value of its education will ultimately rely upon how well the technology supports the development of meaningful writing.

But there is still work to do. Technical limitations, a mismatch between AWE feedback and more profound rhetorical elements, and different student attitudes toward AI-based tools make implementation tricky (Li et al., 2015; Yang et al., 2024). Though many learners value the efficiency of automated tools, skepticism remains particularly when feedback does not address coherence, argumentation, and discourse-level quality (Wu & Chen, 2017; Gozali et al., 2024). These limitations demonstrate that technology alone is insufficient to meet the complex cognitive and rhetorical challenges of academic writing.

To tackle these issues, pedagogical approaches have focused on hybrid feedback models that combine machine and human input. Collaborative tools such as Google Docs and wikis foster peer learning, negotiation of meaning, and co-creation of authorship (Bikowski & Vithanage, 2016). Nevertheless, success depends not only on technology but also on careful instructional design, formative assessment, and teacher preparedness in digital pedagogy (Du & Zhou, 2019; Zhang & Hyland, 2022). Therefore, to benefit from the integration of WBWI pedagogy, it is necessary to balance the technological possibilities with effective teaching practices and the teachers' expertise.

WBWI should be seen as a pedagogical ecosystem beyond the affordances of technology. Instructional strategies, feedback practices, assessment mechanisms, and learner engagement do not operate independently but rather interact in a dynamic way . The effectiveness of digital writing environments is thus not only a matter of the availability of online platforms, but also a matter of the coherence with which these elements are integrated into the learning process. More recently, scholarship has been increasingly arguing that improvements in writing performance occur when technology is integrated into pedagogically meaningful activities that support iterative drafting, reflective revision, and dialogic feedback instead of just error correction (Ranalli, 2021; Zhang & Hyland, 2022; Barrot, 2023). This perspective reframes the conversation from assessing individual digital tools to understanding the instructional architecture for sustainable writing development.

However, the growing volume of WBWI research provides a patchy and at times contradictory picture. Although many studies show positive effects on writing accuracy, learner engagement, and self-regulated learning, others show limited gains in higher-order writing skills, especially organization, critical argumentation, and disciplinary discourse (Fan & Ma, 2022; Seoane et al., 2023; Yang et al., 2024). Part of the problem is that these inconsistencies are due to differences in instructional contexts, technological configurations, feedback models, and assessment criteria, which makes it difficult to identify what pedagogical components consistently contribute to effective writing instruction. Therefore, a complete synthesis is necessary to integrate the existing evidence and elucidate the relationships among instructional strategies, assessment practices, and implementation challenges across different educational settings.

Research on WBWI can be divided into three strands: studies on the effectiveness of AWE feedback, investigations into collaborative writing and learner interaction, and analyses of pedagogical infrastructure and assessment in digital contexts (Fan & Ma., 2022; Seoane et al., 2023). While they contribute to the field, these strands often remain isolated from one another, lacking a unifying framework to explain how instructional strategies, assessment practices, and contextual challenges interact to shape writing outcomes. Hence a comprehensive synthesis of the field which may be useful in evidence-based pedagogical design in varied EFL contexts is elusive.

This study addresses that gap by critically reviewing the literature on WBWI's three interrelated pillars: instructional strategies, assessment practices, and implementation challenges. The review integrates these dimensions, rather than considering them in isolation, to foster a coherent conceptual understanding of effective web-based writing pedagogy. An integrative perspective is particularly relevant to higher education institutions that are undergoing digital transformation, including UIN Siber Syekh Nurjati Cirebon, where technology-mediated writing instruction continues to expand within a cyber university ecosystem. This review consolidates the existing evidence and highlights unresolved issues, offering a comprehensive framework to guide instructional design, institutional policy and future research on digitally mediated writing instruction in linguistically diverse learning environments.

Research Methods

This study employed a Critical Literature Review (CLR) to examine strategies, assessment practices, and challenges in web-based writing instruction between 2015 and 2025. Unlike descriptive reviews, the CLR emphasizes analytical depth by identifying trends, gaps, and contradictions (Snyder, 2019). The review was guided by three core questions: (1) What strategies are used in web-based writing instruction? (2) How is web-based writing assessed? and (3) What challenges do educators and learners face? Inclusion criteria covered peer-reviewed English-language sources related to EFL/ESL web-based writing, while non-academic or unrelated works were excluded. A systematic search was conducted across databases such as Google Scholar, ERIC, Scopus, and ScienceDirect using relevant keywords. Selected studies were extracted, categorized, and thematically synthesized into the three focal areas.

The data consisted of qualitative textual materials drawn from primary sources (journal articles, proceedings) and secondary sources (book chapters, literature reviews). Using document analysis techniques, the review process involved coding textual data into categories, identifying emerging patterns or contradictions, and synthesizing key findings. Zotero was employed to manage references, while thematic content analysis

was applied to interpret the data, ensuring that methodological rigor and theoretical relevance guided the construction of a comprehensive view of web-based writing pedagogy.

Results and Discussion

The critical review of the literature shows that there are a number of instructional strategies commonly used in web-based writing instruction for EFL learners and each strategy contributes to different aspects of writing development. For example, collaborative writing using wikis and Google Docs is often cited (Kessler, 2009; Li & Zhu, 2017) because it supports peer interaction, negotiation of meaning, and co-construction of texts, all of which are crucial in the process approach to writing. Moreover, strategy-based instruction, such as the use of explicit planning and revision techniques supported by digital scaffolds (Zhang, 2018), helps learners internalize the cognitive processes involved in writing. Studies (Sun, 2010; Warschauer, 2011) also show the repeated use of process writing models integrated with asynchronous forums and blogs, which provide space for drafting, feedback, and reflective revisions essential for developing writing fluency and accuracy. In addition, teacher and peer feedback, often enabled through commenting features and rubrics in learning management systems, contribute to metacognitive awareness and self-regulation (Hyland & Hyland, 2006; Shintani, 2016). Although the technological platforms differ, these approaches share learner-centered and interaction-rich pedagogical principles, suggesting that success in web-based writing instruction depends not merely on digital access but also on pedagogical design that facilitates iterative practice and cognitive engagement.

Thematic coding was used to categorize the major instructional strategies applied in web-based writing instruction for EFL learners to synthesize the findings from the reviewed literature. The emergent themes underscore the complex nature of digital writing pedagogy, wherein tools and strategies intersect in the support of cognitive, social, and metacognitive dimensions of writing development. Key themes are the integration of automated writing evaluation (AWE) tools, the role of human feedback, collaborative digital writing, feedback integration strategies, prewriting supports, and metacognitive scaffolding. Each theme reveals specific instructional contributions, from immediate corrective feedback to fostering learner autonomy and reflection. The following table summarizes the coded subtopics, main findings, and representative sources, as an evidence-based overview of current practices and their pedagogical implications in web-mediated writing instruction.

Table 1 instructional strategies employed in web-based writing instruction

Coded Theme (Subtopic)	Conclusion / Findings	Source (Name, Year)
Integration of AWE Tools	AWE tools (Grammarly, ChatGPT, Quillbot) support writing development by offering immediate feedback on grammar, coherence, and vocabulary.	Gozali et al., 2024; Wei et al., 2023
	Students combine multiple AWE tools to improve different writing aspects (e.g., accuracy, rephrasing, idea expansion).	Gozali et al., 2024
Limitations of AWE and Need for Human Feedback	AWE struggles to address rhetorical quality, logic, and deeper content issues; thus, teacher and peer feedback remain essential.	Stevenson & Phakiti, 2014; Yang et al., 2024

	Students benefit most when AWE is used as a complement to teacher feedback, not a substitute.	Wei et al., 2023
Digital Collaborative Writing	Platforms like Google Docs, Padlet, and Wikis promote co-construction of text, mutual feedback, and improved writing quality.	Jeong, 2016; Yim & Warschauer, 2017
	Collaborative writing tasks improve learners' individual writing scores more than individual tasks.	Bikowski & Vithanage, 2016
Feedback Integration Strategy	Blended feedback (automated + human) enhances revision depth and feedback uptake, supporting student reflection and autonomy.	Gozali et al., 2024; Yang et al., 2024
	Students need guidance in evaluating and applying diverse feedback types (peer, teacher, AI).	Carless & Boud, 2018 (cited in Gozali et al., 2024)
Prewriting and Planning Strategies	Tools like Padlet aid in brainstorming and prewriting by increasing motivation and vocabulary development.	Affendi et al., 2020; McDonough et al., 2019
	Visual mapping and collaborative prewriting lower writing anxiety and improve idea generation.	McDonough et al., 2019
Metacognitive Support and Self-Regulation	Learners use different self-regulated learning (SRL) strategies depending on feedback type—cognitive with AWE, motivational with teacher.	Tian et al., 2022
	Metacognitive tools like learning logs and revision checklists improve writing autonomy and revision awareness.	Tian et al., 2022

A central finding from the reviewed literature is the increasing reliance on Automated Writing Evaluation (AWE) tools as core instructional strategies in WBWI. Commonly used tools by EFL learners to solve grammar, vocabulary, and coherence issues are Grammarly, Quillbot and ChatGPT. "Students also utilized a combination of AWE and other technological tools, for example, Quillbot or Grammarly for grammar-checking and ChatGPT for paraphrasing," as noted by Gozali et al. (2024). This strategic integration allows learners to leverage the power of each tool to different stages of the writing process, especially in revision. "AWE provides instant and personalized feedback, especially for learners without regular access to tutors," Wei et al. (2023) also confirm, emphasizing its usefulness in low-support environments.

But, useful as they are, AWE tools have pedagogical limitations calling for compensatory approaches. As Stevenson and Phakiti (2014) point out, AWE "cannot evaluate complex aspects such as logic, clarity, or relevance" and Yang et al. (2024) echo this concern by stating that "some aspects of writing, such as writing style, creativeness, and conceptual ideas, cannot be evaluated by AWE." Thus researchers consistently suggest that hybrid human-automated feedback may be a promising instructional approach. Wei et al. (2023) stress that "AWE should serve as a supplement to teacher feedback rather than a replacement," and Gozali et al. (2024) found that students often favored traditional feedback due to a lack of comprehension of AI systems.

Another successful approach in WBWI is digital collaborative writing using tools such as Google Docs, Padlet and Wikis. These tools allow co-authoring and editing in real time, promoting interaction and collaborative ownership of the writing process. In Jeong (2016), "students in the course demonstrated affirmative perceptions about the use of the cloud-based online writing tool and having collaborative peer-editing experience," whereas Bikowski and Vithanage (2016) found that "in-class web-based collaborative writing tasks helped L2 students improve their individual writing scores significantly more than individual web-based writing tasks." This collaborative environment improves both linguistic accuracy and content development by means of social negotiation.

Learners need to develop feedback literacy to effectively interpret and respond to multiple feedback sources, including AI, peers and teachers. Carless and Boud (2018, as cited in Gozali et al., 2024) define feedback literacy as "the understandings, capacities, and dispositions needed to make sense of information and use it to enhance work or learning strategies." Gozali et al. showed that "the most controversial aspect of the impact of AWE tools... was students' ability to process feedback information" . Some students engaged critically with ChatGPT, while others relied more on the explicit grammatical suggestions provided by Grammarly or Quillbot.

Students' readiness to write is also influenced by prewriting strategies and planning tools. Affendi et al. (2020) states that "developing ideas in pre-writing stage with the help of visual mapping through Padlet can increase the students' motivation to write better." According to McDonough et al. (2019), collaborative prewriting tasks also alleviate writing anxiety and enhance idea generation. These tools provide safe environments for students to experiment with ideas and vocabulary before they start formal writing, which leads to more fluency and cohesion in their final pieces.

Finally, the literature points to the importance of metacognitive and self-regulated learning (SRL) strategies in WBWI environments. Tian et al. (2022) argue that "the SRL strategies learners employ to deal with feedback from multiple sources are crucial for the development of self-regulated writers". They found that "learners used more cognitive strategies when revising based on automated feedback…and more motivational strategies when revising based on teacher feedback." The results suggest that students' self-monitoring and self-regulation of their learning and the source of feedback influence the choice of strategy. To promote student autonomy, you can encourage students to use tools such as reflection journals or revision checklists.

To sum up, the instructional strategies used in WBWI are multifaceted and should be implemented with attention to learners' needs, feedback literacy, and digital competence. AWE tools provide scalable and timely support but must be embedded within broader frameworks of human-mediated feedback and self-regulation. Other scaffolding comes from collaborative technologies and visual prewriting strategies; development of independent writing is supported by metacognitive strategies. As the literature illustrates, successful WBWI requires the strategic orchestration of these tools and practices to ensure meaningful, student-centered writing outcomes.

1) The Integration of Automated Writing Evaluation (AWE) Tools

The integration of Automated Writing Evaluation (AWE) tools such as Grammarly, Quillbot, and ChatGPT has become a prominent instructional strategy in Web-Based Writing Instruction (WBWI) for EFL learners. These tools offer automated feedback on linguistic elements such as grammar, vocabulary, and sentence structure, and are increasingly adopted to support independent revision practices. Gozali et al. (2024)

observe that "students also utilized a combination of AWE and other technological tools, for example, Quillbot or Grammarly for grammar-checking and ChatGPT for paraphrasing." This finding underscores that learners are not merely using one tool passively, but rather engaging in a strategic orchestration of multiple tools, each serving a distinct role in the revision process.

The benefits of AWE tools in WBWI environments are strongly linked to their ability to provide immediate, personalized, and repeated feedback, which supports recursive writing processes. As Wei et al. (2023) assert, "AWE provides instant and personalized feedback, especially for learners without regular access to tutors." In many EFL settings—especially in countries like Indonesia or China where teacher-student ratios are high—this form of assistance becomes essential in reducing learners' dependence on delayed teacher feedback. The rapid feedback loop not only enhances writing fluency and confidence, but also empowers students to revise texts multiple times independently.

Furthermore, AWE tools appear to support learner autonomy, especially in online or asynchronous learning models. Students are able to revise their writing outside class hours and without the need for direct teacher supervision. As Zhai and Ma (2022) report in their meta-analysis, "AWE had a large positive overall effect on writing quality ($g = 0.861$, $p < 0.001$)," suggesting its instructional value is statistically significant when implemented in writing curricula. This supports the idea that AWE is not just a supplementary tool, but a central feedback mechanism in technology-integrated classrooms.

However, while the benefits of AWE tools are considerable, their integration into instruction must be approached critically. One limitation is that AWE systems primarily focus on surface-level features and often fall short in evaluating conceptual clarity, argumentation, and rhetorical organization. Yang et al. (2024) state that "some aspects of writing, such as writing style, creativeness, and conceptual ideas, cannot be evaluated by AWE." Thus, if used in isolation, AWE tools may result in a superficial revision process, where learners focus narrowly on grammar correction rather than broader rhetorical development.

Additionally, student perceptions and habits influence the effectiveness of AWE integration. Gozali et al. (2024) report that "several students expressed their preference for Grammarly over ChatGPT because they thought [ChatGPT] was a paid application or because they claimed they did not know how to use it." This highlights that tool preference is not always pedagogically motivated, but often driven by accessibility, digital literacy, and familiarity. If students are unaware of how to maximize the features of AWE tools, their instructional impact may be limited, or misdirected toward less cognitively demanding revisions.

In light of these observations, researchers emphasize that AWE should not function as a stand-alone instructional strategy, but rather as part of a blended feedback model. Wei et al. (2023) caution that "AWE should be used as a complement to teacher feedback, not a replacement." By combining AWE with teacher and peer feedback, students can benefit from both quantitative error detection and qualitative guidance, a synergy that fosters deeper engagement with the writing process and supports more holistic development of writing skills.

In conclusion, the integration of AWE tools into WBWI provides EFL learners with timely and actionable feedback, promotes autonomy, and enhances writing performance especially in settings with limited teacher interaction. However, to fully realize their pedagogical potential, these tools must be embedded within a broader instructional

strategy that includes scaffolding, digital literacy training, and human feedback. Without such supports, the instructional gains from AWE may remain limited to mechanical aspects of writing, failing to nurture critical thinking and effective communication skills.

2) Limitations of AWE and Need for Human Feedback

One of the main advantages of Automated Writing Evaluation (AWE) tools such as Grammarly, ChatGPT, and Quillbot is their ability to provide instant feedback on surface-level issues like grammar, spelling, and vocabulary use. However, studies consistently reveal that their effectiveness is limited when it comes to higher-order writing concerns. Stevenson and Phakiti (2014) argue that AWE tools fail to evaluate complex aspects such as rhetorical structure, clarity of ideas, and logical argumentation—critical elements in academic writing. Similarly, Yang et al. (2024) highlights that AWE feedback tends to be generic and lacks contextual awareness, making it insufficient for fostering deep revisions or developing students' analytical writing skills.

These limitations reinforce the crucial role of human feedback in the writing process. According to Wei et al. (2023), AWE tools work best when used in conjunction with teacher and peer feedback rather than as a standalone instructional strategy. Their findings indicate that students show greater improvement in writing quality when revisions are guided by both automated suggestions and targeted comments from instructors. This aligns with the blended feedback approach advocated by Gozali et al. (2024), where the efficiency of AWE tools is balanced with the pedagogical depth and empathy of human input. Such integration encourages students to reflect more critically on feedback and engage more deeply with their writing.

However, the effectiveness of this integration relies heavily on students' digital competence and feedback literacy. Gozali et al. (2024) found that many EFL learners were unaware of the full capabilities of AWE tools, and some avoided tools like ChatGPT due to perceived technical complexity or limited access. This highlights a gap not just in tool usage, but in students' ability to interpret and apply feedback effectively. Carless and Boud (2018, as cited in Gozali et al., 2024) emphasize that feedback literacy involves understanding, evaluating, and using feedback from multiple sources, skills that need to be explicitly taught, especially in web-based writing environments.

Critics also warn against "template thinking," where students follow AWE suggestions passively without understanding the rhetorical intent behind them. Li et al. (2015) note that AWE tends to prompt word- or sentence-level revisions rather than meaningful changes in content development or organization. Although Zhai and Ma (2022) report that AWE has a statistically significant impact on writing quality, they also acknowledge that deeper engagement with feedback only occurs when human instruction is present. Without proper scaffolding, students may misuse AWE to optimize grammar without addressing more substantive issues such as coherence, voice, or audience awareness.

In EFL contexts such as Indonesia, where web-based instruction is expanding in institutions like UIN Siber Syekh Nurjati Cirebon, these limitations become even more pronounced. Students face a dual challenge: mastering academic writing in a foreign language and adapting to evolving AI-driven feedback systems. Therefore, instructional design must intentionally combine AWE tools with teacher-led activities such as reflective writing, feedback workshops, and peer review. As Yang et al. (2024) suggest, the success of AWE in supporting writing development ultimately depends on active teacher involvement and students' strategic engagement with diverse feedback sources.

This blended model ensures that technology serves learning rather than oversimplifying it.

3) Digital Collaborative Writing

Digital collaborative writing (DCW) has emerged as a central instructional strategy in web-based writing instruction, especially in English as a Foreign Language (EFL) contexts. Unlike individual writing practices, DCW leverages digital platforms to foster co-construction of texts, mutual feedback, and social negotiation of meaning. According to Jeong (2016), tools such as Google Docs enable real-time collaboration, allowing students to draft, edit, and comment on shared documents regardless of physical proximity. These platforms foster what Yim and Warschauer (2017) term "collective cognition"—a process where learners engage in meaning-making as a community, rather than in isolation.

Empirical studies indicate that collaborative writing tasks result in better learning outcomes than individual writing tasks. Bikowski and Vithanage (2016) found that EFL learners who participated in online collaborative writing outperformed those who wrote individually in terms of organization, grammar, and academic tone. This performance improvement is attributed not only to the opportunity to receive peer feedback but also to the dialogic nature of collaboration, which forces learners to articulate and defend their linguistic and rhetorical choices. Collaborative writing, therefore, acts as both a language-learning task and a social-cognitive development activity.

One of the major benefits of digital collaboration lies in its potential to improve feedback quality. In web-based environments, students can provide and receive immediate comments from peers or instructors through embedded features like comments, suggestions, or chat threads. As shown in Gozali et al. (2024), such dialogic feedback fosters revision awareness and allows for deeper engagement with the text. Moreover, the collaborative mode often exposes learners to a wider range of vocabulary, syntax, and rhetorical strategies, accelerating their language acquisition through exposure to peers' linguistic input.

Despite its advantages, digital collaborative writing also presents several pedagogical challenges. Not all students are equally prepared to negotiate meaning, manage roles, or resolve conflicts in shared writing tasks. Bikowski and Vithanage (2016) noted that some learners expressed discomfort when required to merge divergent ideas or preferred teacher correction over peer suggestions. These issues highlight the need for teachers to provide explicit instruction on collaboration strategies, including how to give constructive feedback, build consensus, and distribute tasks effectively.

Cultural and affective factors also influence the effectiveness of collaborative writing. In some EFL contexts, students may be reluctant to critique peers due to social harmony norms or fear of losing face. This reluctance can limit the depth of peer interaction and reduce collaborative productivity. As Jeong (2016) observed, some students reported feelings of embarrassment when sharing early drafts online, especially when their grammar mistakes were visible to others. These emotional factors must be addressed through trust-building activities and positive classroom norms that frame errors as learning opportunities rather than failures.

Another layer of complexity arises in assessing collaborative writing outcomes. Traditional assessment methods often struggle to distinguish individual contributions within group products. However, modern digital tools, such as version history in Google Docs or text mining techniques (Yim & Warschauer, 2017), offer viable solutions. These tools can help instructors monitor students' contributions, identify revision patterns, and

ensure accountability, thereby aligning assessment practices with the collaborative nature of the task.

In conclusion, digital collaborative writing offers a powerful avenue for enhancing EFL learners' writing skills, metacognitive awareness, and engagement with the writing process. However, its success depends on careful instructional planning, including scaffolding collaboration skills, building feedback literacy, and ensuring equitable participation. As web-based education becomes more prominent in cyber campuses such as UIN Siber Syekh Nurjati Cirebon, integrating collaborative writing into the curriculum is not only feasible but essential. When supported by pedagogical strategies that address its challenges, DCW transforms writing from a solitary task into a socially rich, cognitively demanding, and linguistically empowering experience.

4) Feedback Integration Strategy

The integration of diverse feedback sources—automated, peer, and teacher—has become a key strategy in enhancing the effectiveness of web-based writing instruction. This blended approach, often referred to as feedback integration, is based on the understanding that no single feedback source is sufficient to support the full spectrum of writing development. Gozali et al. (2024) emphasize that combining Automated Writing Evaluation (AWE) tools with human feedback results in deeper revision practices and improved learner autonomy. While AWE tools offer immediate and accessible surface-level corrections, human feedback provides nuanced insights into rhetorical structure, content development, and audience awareness.

Empirical studies support the claim that integrated feedback leads to more meaningful revisions. Yang et al. (2024) found that students who received both AWE and teacher feedback demonstrated stronger engagement with the revision process and greater improvement in writing quality than those who relied on a single source. The complementary strengths of each feedback type enable learners to address both micro-level (grammar, mechanics) and macro-level (organization, coherence) issues more effectively. In addition, integrated feedback encourages learners to take more responsibility for their learning by evaluating different suggestions and deciding which to incorporate, an important skill in fostering feedback literacy.

However, the effectiveness of feedback integration largely depends on students' ability to interpret, compare, and synthesize feedback from multiple sources. According to Carless and Boud (2018, as cited in Gozali et al., 2024), feedback literacy is not only about receiving comments but also about understanding their value, determining relevance, and acting upon them strategically. In practice, students often struggle with contradictory feedback or become overly dependent on AWE tools. This challenge underscores the need for explicit instruction in feedback analysis, critical evaluation, and application skills within the writing curriculum.

Teachers play a crucial role in mediating this integration process. They can scaffold student engagement with feedback by modeling how to compare AWE suggestions with teacher input, encouraging reflection through revision logs, and facilitating peer discussion on feedback decisions. Gozali et al. (2024) suggest the use of guided tasks, such as feedback comparison charts or revision diaries, which help learners track their choices and rationale during the editing process. Such scaffolding supports metacognitive development, enabling students to become more strategic and independent writers over time.

Furthermore, digital platforms provide an ideal environment for implementing feedback integration strategies. Learning Management Systems (LMS) like Moodle or

Google Classroom allow teachers to combine AWE-generated reports with personalized teacher comments and peer feedback forums. This convergence creates a multi-layered feedback ecosystem where learners can access, organize, and respond to feedback within a single space. As highlighted by Wei et al. (2023), the availability of diverse feedback types within digital systems increases the likelihood of revision uptake and promotes deeper learner engagement with the writing task.

In summary, feedback integration strategy is not merely about layering different feedback types but about orchestrating them in a pedagogically sound manner. When properly implemented, it cultivates feedback literacy, promotes student agency, and deepens the learning process. For web-based writing instruction in EFL contexts such as that of UIN Siber Syekh Nurjati Cirebon—adopting an integrated feedback approach is essential to ensure that learners are not only corrected, but guided, challenged, and empowered to grow as autonomous writers in a digital environment.

5) Prewriting and Planning Strategies

Prewriting and planning are foundational stages in the writing process, especially for EFL learners who often struggle with idea generation, vocabulary recall, and text organization. In web-based writing instruction, these early stages are increasingly supported by digital tools that facilitate brainstorming, visual mapping, and collaborative planning. Tools like Padlet and online mind-mapping applications provide learners with accessible, interactive platforms to organize their thoughts before drafting. As noted by Affendi et al. (2020), Padlet not only boosts students' motivation but also enhances their vocabulary acquisition and conceptual clarity during the prewriting stage.

Empirical evidence confirms that technology-supported prewriting leads to better writing outcomes. McDonough et al. (2019) found that students who engaged in visual mapping and collaborative idea generation exhibited lower writing anxiety and produced more coherent and detailed essays. This is particularly relevant in EFL contexts, where learners often face linguistic and cognitive barriers in generating content in a foreign language. The collaborative element of digital prewriting allows learners to pool ideas, share lexical resources, and gain confidence in their ability to express themselves, which in turn supports higher engagement in the drafting process.

Moreover, digital prewriting strategies foster metacognitive awareness by prompting students to reflect on purpose, audience, and structure before writing. When guided by instructional scaffolding such as prompts, templates, or brainstorming rubrics—students are more likely to produce organized and goal-oriented texts. This aligns with process-based writing pedagogy, which emphasizes the importance of planning as a predictor of writing success. Instructors can also monitor student progress through prewriting artifacts, such as concept maps or Padlet boards, providing opportunities for early intervention and feedback.

In conclusion, integrating prewriting and planning strategies into web-based writing instruction not only strengthens students' content generation and organization skills but also reduces cognitive load during drafting. Digital tools like Padlet offer both individual and collaborative affordances that enhance learners' readiness to write. For institutions like UIN Siber Syekh Nurjati Cirebon, where web-based instruction is central, embedding structured prewriting activities into the curriculum is essential for cultivating confident and competent EFL writers in online learning environments.

2.6 Metacognitive Support and Self-Regulation

Metacognitive support and self-regulation have become increasingly central in web-based writing instruction, particularly for EFL learners navigating complex digital

environments. Writing is not only a linguistic activity but also a cognitive and metacognitive process that requires planning, monitoring, and evaluating. As Tian et al. (2022) explain, self-regulated learning (SRL) strategies empower learners to take control of their writing processes, especially when revising based on various forms of feedback. In digital writing contexts, students must independently interpret feedback, set goals, revise accordingly, and monitor their progress, tasks that demand strong metacognitive skills.

One important finding in the literature is that learners deploy different SRL strategies depending on the feedback source. Tian et al. (2022) found that automated feedback (e.g., from AWE tools) often triggered cognitive strategies such as surface-level corrections, while teacher feedback prompted more motivational and evaluative strategies. This suggests that instruction should not only focus on the mechanics of writing or the provision of feedback but also train learners in how to regulate their learning responses. Students need to know how to assess the relevance and depth of the feedback they receive and how to prioritize revisions strategically.

To support this, educators have adopted various metacognitive scaffolds within web-based writing instruction. Tools like learning logs, reflective journals, and revision checklists provide students with structured opportunities to track their thinking and learning over time (Tian et al., 2022). These supports enhance students' awareness of their writing weaknesses and strengths and help them develop internal standards for quality writing. The visibility of their own decision-making processes also fosters writing autonomy, which is crucial in asynchronous, self-paced learning environments common in online education.

Moreover, feedback engagement itself becomes a site for metacognitive development. As students are exposed to multiple feedback types—peer, teacher, and automated—they must make complex decisions about what to change, why, and how. Gozali et al. (2024) emphasize that learners should be guided not only to apply corrections but also to justify and evaluate their revision choices. This practice can be implemented through reflective annotations or comparative drafts, where students explain how and why certain feedback was used. Such activities deepen their understanding of writing as a recursive, strategic process.

The role of digital platforms is instrumental in fostering self-regulation. Learning Management Systems (LMS) and collaborative tools provide spaces for storing drafts, tracking changes, and setting revision milestones. Teachers can design modules that gradually release responsibility to the learners, moving from guided tasks to more independent writing and revision. According to Arroyo González et al. (2021), this scaffolding process helps students become not only better writers but also more reflective learners who can adapt their strategies to new writing situations and genres.

Cultural and contextual factors, however, must also be considered when promoting self-regulation. In many EFL contexts, learners may be accustomed to teacher-centered models and passive learning roles, which can inhibit the development of autonomous writing strategies. Therefore, introducing metacognitive tools should be accompanied by orientation sessions, reflective discussions, and ongoing teacher support. This shift in learner identity—from passive recipient to active agent—requires both time and intentional pedagogy.

In conclusion, metacognitive support and self-regulation are not optional add-ons but integral components of effective web-based writing instruction. By cultivating students' ability to plan, monitor, and evaluate their writing behaviors, instructors empower them to become lifelong learners capable of navigating complex writing tasks

in digital environments. For institutions such as UIN Siber Syekh Nurjati Cirebon, where students are expected to engage with writing independently in an online setting, fostering SRL strategies through deliberate metacognitive scaffolding is essential for ensuring both academic success and personal growth.

CONCLUSION

This critical literature review examined a range of studies from 2015 to 2025 that focused on strategies, assessment practices, and challenges in web-based writing, particularly in English as a Foreign Language (EFL) and English as a Second Language (ESL) contexts. The findings reveal that web-based writing strategies commonly include the use of collaborative digital platforms, process-based writing approaches, and multimodal tools to foster student engagement and autonomy. Teachers frequently integrate blogs, wikis, discussion forums, and cloud-based applications like Google Docs to encourage interaction and support the writing process.

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