A SYSTEMATIC REVIEW OF FORMATIVE ASSESSMENT IN ENGLISH AS A FOREIGN LANGUAGE WRITING

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Abstract:

Formative assessment (FA) has increasingly been recognized as an effective approach for enhancing English as a Foreign Language (EFL) writing, providing an alternative to traditional summative assessment. This systematic review aims to examine the types, effectiveness, and underlying mechanisms of FA practices in EFL writing classrooms. Following the PRISMA framework, empirical studies published between 2015 and 2024 were analysed. The review identifies three main categories of FA: mediated assessment, learner-centred practices, and technology-enhanced tools. Across diverse learner populations and instructional contexts, these approaches consistently support improvements in writing performance, often outperforming traditional assessment methods. Key mechanisms driving these outcomes include timely and actionable feedback, active engagement of learners in the assessment process, and opportunities for iterative reflection and revision. The findings highlight the importance of adopting process-oriented, learner-engaged, and technology-supported assessment practices in EFL writing instruction, providing insights for both practical classroom application and future research.

Keyword：

EFL Writing, Feedback, Formative Assessment, Mechanism

Introduction

Formative assessment (FA) is widely used in higher education, but how it is practiced by university teachers has not been systematically investigated (Guo & Xu, 2021). Within classroom settings, an activity can be classified as formative when evidence of learners' performance is systematically gathered, interpreted, and acted upon by teachers, students, or peers to adjust subsequent instruction, thereby increasing its effectiveness (Black & Wiliam, 2009).

Proficient writing is recognized as a fundamental skill for success in various academic fields in the twenty-first century (McNamara & Kendeou, 2022), and this importance is particularly amplified in EFL studies, where it serves as a key determinant of a student's communicative and professional success (Ghafar & Mohamedamin, 2022). Given its significance, educators and researchers have continuously explored instructional approaches aimed at improving EFL students' writing proficiency. Among these, FA is widely regarded as a highly promising and effective approach (Guadu & Boersma, 2018; Mohamadi, 2018; Naghdipour, 2017; Nurhayati, 2020; Teng, 2022).

Although FA is increasingly applied in EFL writing instruction, existing studies primarily focus on the practices implemented and their effectiveness. Less attention has been given to the underlying mechanisms through which FA produces learning gains, the role of students in these processes, and the influence of emerging technologies. Understanding these mechanisms is crucial for synthesizing the evidence and informing the design of effective FA interventions.

To address these gaps, the present review aims to examine FA in EFL writing by:
1. Classifying FA practices in EFL writing for systematic analysis.
2. Examining the effectiveness of FA in improving EFL writing.
3. Exploring the role of learner engagement in FA.
4. Examining how technology supports FA.

The research inquiries guiding this investigation are as follows:
1. What FA practices are reported in the literature on EFL writing instruction?
2. What evidence exists on the effectiveness of FA practices in EFL writing?
3. In what ways does learner engagement affect FA?
4. How does technology influence the implementation of FA?

Methodology

The present study adopted a systematic review approach following the PRISMA guidelines (Page et al., 2021) and informed by both the Cochrane Handbook for Systematic Reviews of Interventions (Higgins et al., 2019) and Gough et al.'s (2017) framework for systematic reviews

in social science research. This approach ensured a rigorous and transparent process. Key databases in education and applied linguistics were searched to identify empirical studies meeting predefined inclusion criteria.

Research Design

FA practices were categorized following Black and Wiliam's (2009) definition, which considers assessment formative when evidence of student learning is collected and used by teachers, learners, or peers to guide subsequent instruction. Key information from the included studies was extracted using the PICO framework (Population, Intervention, Comparison, Outcome; Haynes et al., 1994; Richardson et al., 1995). Based on this information, FA practices were grouped into three types—mediated FA, learner-centred FA, and technology-enhanced FA—allowing for systematic organization and quantitative summarization. This classification and summary facilitated an evaluation of FA's overall effectiveness in supporting EFL writing development.

Building on this evaluation, the mechanisms underlying FA effectiveness were examined through data extracted from the abstracts, results, and discussion sections of the included studies. A thematic synthesis was conducted to explore how FA supports writing development, with particular focus on the roles of learner engagement and technology use in its implementation. Figure 1 presents a schematic representation of the study design.
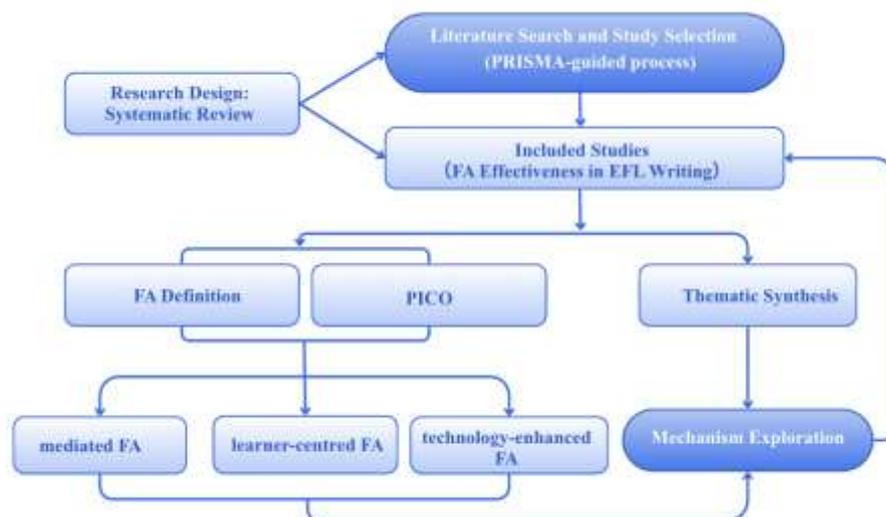
Figure 1: Research Design of the Study

Search Strategy

The literature search was conducted using the Scopus and ERIC databases. Scopus provides access to high-impact international journals and offers advanced filtering by discipline and document type, ensuring methodological rigor. ERIC, managed by the U.S. Department of Education, focuses on education-related studies and includes both journal articles and practitioner reports, ensuring that relevant research on FA in EFL contexts is captured. Using these two databases maximized the comprehensiveness and relevance of the retrieved

literature. The review examined peer-reviewed studies on FA in EFL writing, focusing on intermediate university learners as they represent the largest group in the literature.

The search was limited to publications from 2015 to 2024, written in English, and focused on empirical studies. Search strings were entered manually and adjusted to fit each database's syntax, and duplicates were removed after initial screening. The search combined three keyword clusters—formative assessment (FA), the EFL context, and writing skills—using OR within clusters and AND across clusters to ensure that retrieved studies addressed FA in EFL writing. The detailed search strings for each database are shown in Table 1.

Table 1: Database Search Strings

Concept	Keywords	Boolean logic
Formative assessment	formative assessment, assessment for learning, dynamic assessment, ongoing evaluation, feedback, peer assessment, self- assessment	OR
EFL context	EFL, English as a foreign language, L2, second language	OR
Writing skills	writing, written, composition	OR

Note：The final query required at least one term from each cluster to ensure retrieved studies addressed FA in EFL writing.

To guide the screening and eligibility assessment process, clear inclusion criteria were established. These criteria ensured consistency and transparency in the selection of studies for the review. Studies were included if they met the criteria in Table 2.

Table 2: Inclusion Criteria

Criterion	Description/Requirement
Research Design	Peer-reviewed empirical studies employing experimental or quasi-experimental designs
Participants & Context	University students or learners at a comparable academic level in an EFL* context
Skill Focus	Studies investigating FA in relation to writing skills
Research Focus	Studies identifying FA as the central research focus

*：Due to the inconsistent application of the terms "EFL" and "ESL" across studies, this inclusion decision was guided by the actual research context described, not the authors' terminology. Accordingly, studies set in an EFL environment were included even if labeled as "ESL".

Literature Search and Study Selection

The literature search and study selection process followed PRISMA guidelines (Page et al., 2021), and studies were included based on the inclusion criteria presented in Table 2. The flow diagram in Figure 2 summarizes the number of records identified, screened, assessed for eligibility, and included in the final synthesis.
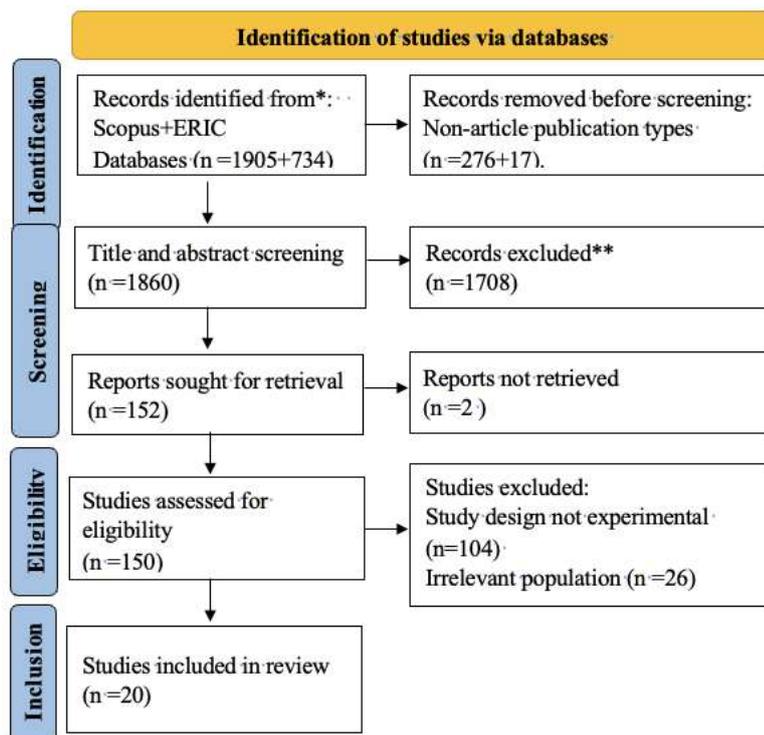
Figure 2: Procedure of Literature Selection for Systematic Review

Identification

Records identified from the Scopus and ERIC databases totalled 1,905 and 734, respectively. To ensure the inclusion of only peer-reviewed articles, non-article publication types were excluded during the initial filtering stage, resulting in the removal of 293 records (276 from Scopus, e.g., book chapters, conference proceedings, books, notes, errata, editorials, short surveys, and conference reviews; and 17 from ERIC, e.g., books, reports, speeches and presentations, and conference papers). The remaining records were imported into EndNote for duplicate removal, leading to the exclusion of 486 duplicate records.

Screening

A total of 1,860 records underwent title and abstract screening. Titles were initially assessed for relevance to the research topic and search keywords, followed by a review of abstracts to determine whether studies met the inclusion criteria. Records that clearly did not meet the predefined inclusion criteria (Table 2) were excluded, totalling 1,708 records. Examples of such exclusions include studies that did not focus on FA, were not conducted in an EFL writing context, targeted populations other than university students or learners of comparable level, or were non-empirical publications. This process left 152 studies for full-text review, two of which could not be retrieved despite repeated attempts.

Eligibility

During the eligibility phase, the full texts of 150 articles that passed the title and abstract screening were carefully assessed against the predefined inclusion criteria (Table 2). Studies failing to meet these criteria were excluded, ensuring that the remaining articles were directly

relevant to the review's research questions on the use of FA in EFL writing. This process involved evaluating the study design, participant characteristics, and methodological rigor. The careful application of these criteria ensured that only studies of sufficient quality and relevance were retained for further analysis.

Inclusion

In the inclusion stage, articles that did not satisfy the eligibility criteria were excluded. Specifically, 104 studies were excluded due to non-experimental designs, 26 were excluded because their participants were not university students or learners of a comparable level. Following this assessment, 20 studies met the inclusion criteria and were included in the final review. This systematic selection process ensured that the included studies provided robust and relevant evidence for addressing the research questions.

Data Extraction

From each eligible study, key information was extracted following the PICO framework (Population, Intervention, Comparison, Outcome) to address the review questions. Specifically, the following elements were recorded:

1. Category of FA practices.
2. Author(s) and year of publication – Citation of the study for reference.
3. Population (P) – Educational level or characteristics of the EFL learners.
4. Study design and methodology (I/C) – Research design, interventions, and comparisons employed.
5. Outcome (O) – Reported effects on learners' writing performance.
This structure ensured that both the type of FA and its effectiveness were systematically captured for further synthesis.

Results

This section synthesizes the main findings from the reviewed empirical studies on FA in EFL writing. Overall, the literature indicates positive effects on writing performance, with increasing emphasis on learner engagement and technology-enhanced assessment practices.

Dominant Types of Formative Assessment Practices in EFL Writing

The systematic literature screening process resulted in the final inclusion of 20 qualifying empirical studies. Table 3 provides a summary of the essential details from each study, outlining the participants, the interventions applied, the principal outcomes, and the types of FA Investigated.

The categorization of FA practices in this review was informed by the widely cited definition of FA, which states that "practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners, or their peers to make decisions about the next steps in instruction" (Black & Wiliam, 2009, p. 9). This definition highlights the role of different agents in the assessment process. Guided by this framework and considering the increasing role of technology as an emerging participant in assessment, the FA practices identified in the included studies were grouped into three

dominant types: mediated FA, learner-centred FA, and technology-enhanced FA. This distinction classification not only organizes diverse FA practices according to the agents involved but also facilitates a systematic synthesis of findings and highlights emerging trends—particularly the growing role of technology in assessment.

Mediated FA refers to assessment practices where teachers or peers act as mediators to scaffold learners' progress. Teacher-mediated practices often include dynamic assessment (DA), in which teachers integrate assessment and instruction through prompts or feedback tailored to learners' zones of proximal development (Lantolf & Poehner, 2014; Poehner, 2008). Peer-mediated practices, in contrast, typically involve peer review or peer feedback, where learners provide comments on each other's drafts to foster collaborative learning (Silva et al., 2016; Søndergaard & Mulder, 2012) and critical reflection (Ekahitanond, 2013; Novakovich, 2016; Silva et al., 2016).

Learner-centred FA highlights the role of learners themselves in regulating and evaluating their own writing performance. Self-assessment and self-reflection were the dominant strategies, often operationalized through checklists, rubrics, or reflective journals (Nielsen, 2014). These tools encourage learners to critically review their own work and identify areas for improvement. Through such reflective practices, learners become more aware of their strengths and weaknesses in writing and gradually develop greater autonomy in the revision process.

The new technologies of the 21st century have overcome a key limitation of traditional FA, which was the difficulty in capturing learning interactions and outcomes in face-to-face teaching. Nowadays, technology has created multiple opportunities to capture students' performance and assessment data and can provide immediate and effective feedback to support learning, which is crucial to learners' success (Spector et al., 2016). Technology-enhanced FA emerged as a distinct type due to the rapid integration of digital tools, e-portfolios, and especially AI-assisted platforms in recent years. These tools provide instant feedback, facilitate multiple rounds of revision, and enable teachers to monitor learner development in real time.

Table 3: Summary of Studies on the Formative Assessment in EFL Writing

Type of FA Investigated	Paper (Author/Year)	Participants	Intervention/ Comparison	Outcomes
Mediated FA	Abdullateef & Muhammedzein (2021)	EFL Undergraduates & Teachers	Dynamic Assessment (DA) with mediation	Significant positive impact. DA was more effective than traditional assessment.
	Erfani & Nikbin (2015)	Intermediate EFL learners	peer-assisted mediation vs. tutor-intervention within a DA framework.	The peer-assisted group outperformed the tutor-intervention group in writing improvement.
	Etemadi & Abbasian (2023)	Advanced EFL learners	facilitative vs. authoritative DA modalities	Both DA groups outperformed control; facilitative-

			vs. a control group.	DA was more effective than authoritative-DA.
	Kamali, M., et al. (2018)	Intermediate male EFL learners	Used DA to teach a specific grammar point	The DA group significantly outperformed the control group on both immediate and delayed post-tests.
	Mauludin, L. A. (2018)	Intermediate level of English proficiency	Implemented Dynamic Assessment to improve summary writing skills.	The implementation of DA was effective in improving students' skills in summary writing.
	Rashidi & Nejad (2018)	Iranian EFL learners	Implemented a three-step dynamic assessment procedure (topic-choice, idea-generation, macro-revising).	DA significantly influenced participants' scores, enhanced their writing ability, and improved their confidence.
	Rassaei, E. (2021)	EFL learners	Compared dynamic vs. non-dynamic corrective feedback in dyadic and small group contexts.	Dynamic feedback was more effective than explicit corrections, especially when provided to a group.
	Sardarianpour & Kolahi (2021)	Intermediate female EFL learners	Compared dynamic assessment vs. negotiated assessment on writing complexity and fluency.	Dynamic assessment was more effective for complexity; negotiated assessment was more effective for fluency.
Technology-enhanced FA	Aghazadeh & Soleimani (2020)	Intermediate EFL Learners & Teachers	E-portfolios with peer feedback vs. a control group with only teacher feedback	Significant positive effect. The E-portfolio group outperformed the control group.

	Bowen, N. E. J. A., et al. (2022)	Undergraduates in online EFL writing	Used keystroke logging (KSL) to provide process-oriented feedback.	Targeted feedback via KSL improved first draft quality and metacognitive strategy use.
	Cheng, G. (2022)	First-year university EFL students	Used an automated system to track student responses to teacher feedback.	The system supported student reflection and likely led to improvements in revised texts.
	ElEbyary, K., et al. (2024)	University undergraduate EFL students	Compared feedback from Grammarly, E-rater, teacher, and no feedback.	Teacher feedback led to the most noticing, but AI feedback also prompted noticing of errors.
	Kaveh, A. and E. Rassaei (2022)	EFL learners	mobile-mediated DA vs. face-to-face DA vs. a control group on writing fluency.	Both DA conditions were beneficial; mobile-mediated DA was more effective than face-to-face DA.
	Saeedi & Meihami (2015)	Intermediate EFL students	Used an e-Portfolio (EP) platform for providing corrective feedback vs. paper-and-pen.	The EP group showed better overall writing performance and had positive attitudes.
	Sherkuziyeva, et al. (2023)	Intermediate EFL learners	Compared computerized dynamic assessment (C-DA) and rater-mediated assessment.	The C-DA group outperformed the control group on oral proficiency, writing and had lower test anxiety.
Learner-centred FA	Becker, A. (2016)	Adult ESL learners	Compared the effect of developing and/or applying a scoring rubric vs. a control group.	Student involvement in the rubric process led to significantly higher writing scores.

	Huang, S.-C. (2015)	College freshmen	Compared the effect of setting revision goals (with/without strategies) vs. a control group.	Goal setting with strategy support performed best on revision quality, but no difference in overall improvement.
Learner-centred FA / Mediated FA	Ebrahimi, M., et al. (2021)	EFL learners	Compared self-assessment and peer assessment vs. a control group.	Both were effective for autonomy and metacognition; self-assessment was more effective than peer assessment.
	Meihami & Esfandiari (2020)	Intermediate language learners	Compared self-assessment, peer-assessment, and teacher assessment.	The peer-assessment group outperformed the other two groups in writing improvement.
Technology-enhanced FA / Mediated FA	Torabi & Safdari (2020)	Intermediate female EFL learners	Compared electronic portfolio assessment, dynamic assessment, and a control group.	Both e-portfolio and DA improved writing significantly, with no difference between them.

The distribution of FA practices across the 20 reviewed articles highlights particular areas of research emphasis. The most prominent approach was mediated FA, which was the primary focus of eight studies (40%), demonstrating its continued importance in writing classrooms. The significant presence of technology-enhanced FA, investigated in seven articles (35%), underscores the growing impact of digital tools in this field. In contrast, only two studies (10%) focused exclusively on learner-centred FA. Furthermore, three studies (15%) were identified as comparative, directly examining the relative effects of different FA approaches. Specifically, these comparative studies explored combinations of learner-centred and mediated FA (10%, n=2) and technology-enhanced and mediated FA (5%, n=1), reflecting a scholarly interest in integrating these distinct assessment paradigms.

The Efficacy of Formative Assessment

The findings were largely consistent across studies, showing that experimental groups receiving FA interventions demonstrated greater improvements in writing performance than control groups. For example, Abdullateef and Muhammedzein (2021), in their study *Dynamic Assessment: A Complementary Method to Promote EFL Learning*, investigated the effects of dynamic assessment on EFL undergraduate students' writing performance. In this study, the experimental group received mediated FA based on dynamic assessment principles, while the control group was assessed using conventional, static assessment methods. Post-test results for the writing task indicated that the experimental group achieved a higher mean score (M = 13.12,

SD = 1.95) than the control group (M = 10.52, SD = 1.07). This suggests that the dynamic assessment intervention (mediated FA) may have had a positive effect on participants' writing performance (Abdullateef & Muhammedzein, 2021).

The effectiveness of FA in EFL writing has been shown to be multidimensional, influencing not only overall writing scores but also specific core dimensions such as accuracy, fluency, and complexity. A growing body of research has consistently reported that formative practices incorporating sustained feedback, learner reflection, and iterative revision contribute to improvements in these dimensions of writing performance (e.g., Saeedi & Meihami, 2015; Torabi & Safdari, 2020). Within this broader line of research, technology-enhanced FA, particularly e-portfolio-based assessment, has been found to be effective in promoting students' writing development over both the short and long term. For instance, Aghazadeh and Soleimani (2020) compared an experimental group using e-portfolios with a control group receiving conventional teacher feedback and reported that the e-portfolio group achieved significantly greater gains in writing complexity ($t(28) = -7.99$, $p < .05$), accuracy ($t(28) = -3.80$, $p < .05$), and fluency ($t(28) = -5.70$, $p < .05$).

The formative value of active engagement with rubrics for improving students' writing performance has been explored by scholars. Creating a rubric yielded the greatest improvement, showing a massive advantage over the control group (mean diff=.84, effect size=1.70). Practicing with a rubric was also significantly beneficial (mean diff=.42, effect size=.75), whereas merely seeing it offered no statistically significant improvement (Becker, 2016). These findings indicate that the level of students' active engagement with assessment criteria is a critical factor; actively participating in the creation and practice of rubrics can more effectively enhance writing performance, whereas passively receiving assessment information has a limited impact.

When examining their roles in fostering learner autonomy and strategic learning, self-assessment has often been reported to outperform peer assessment (Ebrahimi et al., 2021). At the same time, some studies indicate that, as a collaborative approach, peer assessment can in certain cases exceed self-assessment in enhancing students' writing abilities (Double et al., 2020; Meihami & Esfandiari, 2020; Topping, 2018). Overall, both methods are broadly acknowledged as effective in supporting the development of students' English writing skills.

Mechanisms of Formative Assessment in EFL Writing

While the reviewed studies consistently demonstrate the effectiveness of FA in improving EFL writing performance, it is equally important to understand the underlying mechanisms that account for this effectiveness. To identify the mechanisms underlying the effectiveness of FA in EFL writing, a thematic synthesis was conducted. Explanatory data were extracted from the abstracts, results, and discussion sections of the included studies, focusing on how and why FA supported writing development. Cross-study comparisons revealed three recurring mechanisms underpinning effective FA: feedback, learner engagement, and iterative revision and reflection (Table 4).

Table 4: Mechanisms of Formative Assessment in EFL Writing

Mechanism	Description / How It Works	Representative Studies	Observed Effects
Feedback	Timely, individualized, and actionable feedback allows learners to identify gaps and adjust strategies.	Abdullateef & Muhammedzein (2021); Aghazadeh & Soleimani (2020)	Improved overall writing performance, accuracy, fluency, and complexity
Learner Engagement	Students actively participate in creating/practicing rubrics, self-assessment, or peer-assessment.	Becker (2016); Ebrahimi et al. (2021); Meihami & Esfandiari (2020)	Greater improvement in writing quality; enhanced metacognition, autonomy, and error noticing
Reflection & Iterative Revision	Opportunities for repeated drafting, guided reflection, and strategic revision consolidate learning.	Saeedi & Meihami (2015); Torabi & Safdari (2020)	Long-term improvement in textual quality; development of higher-order competencies

The Value of Student-centred Practices

One key theme emerging from the reviewed studies is learner engagement, particularly the value of student-centred formative assessment practices. The collective findings suggest that shifting students from passive recipients of feedback to active participants in the assessment process significantly fosters deeper learning competencies.The extent of student engagement in the assessment process is directly correlated with improvements in their writing performance. This is demonstrated in the study by Becker (2016), which found that the group that co-created a scoring rubric significantly outperformed the group that merely applied the rubric for practice, and both of these groups, in turn, performed significantly better than the group that passively viewed the rubric. This indicates that the more actively and deeply students are involved in internalizing assessment criteria, the more pronounced the positive impact on their learning.

Etemadi and Abbasian (2023) revealed that the facilitative-DA modality is more effective than the authoritative-DA one in developing learners' writing revision skills. In the authoritative modality, the learner assumes a passive role, waiting for the teacher to provide direct answers and instructions. Consequently, pedagogical agency resides primarily with the instructor. In contrast, the facilitative modality casts the learner as an active problem-solver and meaning-constructor.

Transferring some ownership of the assessment process to students is crucial for cultivating higher-order learning skills. The study by Ebrahimi et al. (2021) found that both self-assessment and peer assessment were equally effective in enhancing learner autonomy and metacognitive awareness, and both were significantly superior to the traditional teacher-led assessment model. This suggests that prompting students to evaluate their own or their peers' work encourages them to think more actively about writing standards and strategies, thereby developing into more independent learners.

However, granting students autonomy is not synonymous with a complete lack of guidance. The study by Huang (2015) provides critical evidence for this point. It revealed that simply asking students to set their own revision goals was less effective than the control condition with no goal setting. In contrast, providing a strategy checklist as a scaffold alongside goal setting led to the highest quality of revised drafts. This demonstrates that for student-centred practices to be effective, instructors must provide clear structures and strategic support to help learners translate their potential into tangible improvements in writing.

The Impact of Technology Integration

Technology integration is a crucial and impactful dimension of modern FA practices. Technology serves not merely as a medium for delivering feedback; its application mode, timing, and functionality profoundly shape the learning process and significantly enhance the effectiveness of assessment. A core value of digital tools is their ability to capture and present the "process" of writing, which is typically invisible in traditional instruction.

The study by Bowen et al. (2022) utilized keystroke logging (KSL) to show students their own time allocation, revision behaviours, and writing fluency. This visualized, process-oriented feedback led to significant improvements in first draft quality and the use of metacognitive strategies. Similarly, the automated tracking system developed by Cheng (2022) helped students visually identify discrepancies between teacher feedback and their actual revisions, which promoted deeper reflection and more effective modifications. Beyond visualizing the writing process, technology also enhances the delivery of established pedagogical methods, as Kaveh and Rassaei (2022) found that mobile-mediated DA was more effective than its face-to-face counterpart.

The integration of Artificial Intelligence (AI) has opened new possibilities for FA, but its effectiveness is highly dependent on the timing and mode of feedback delivery. ElEbyary et al. (2024) found that immediate AI feedback provided during the writing process (e.g., Grammarly) was significantly more effective in improving writing scores and error noticing than delayed feedback provided after writing was complete (e.g., E-rater or teacher feedback). Furthermore, the role of AI can extend beyond direct error correction. The study by Guo et al. (2024) demonstrated that AI can also effectively enhance a feedback provider's own writing skills indirectly by scaffolding the process of giving high-quality peer feedback, opening up new avenues for AI application at the metacognitive level.

E-portfolios have emerged as a comprehensive platform that effectively supports the entire cycle of process-oriented writing (drafting, feedback, reflection, and revision). Multiple studies consistently confirm that the use of e-portfolios leads to significant improvements in writing accuracy, fluency, and complexity (Aghazadeh & Soleimani, 2020) and results in better overall writing performance (Saeedi & Meihami, 2015; Torabi & Safdari, 2020) compared to

traditional paper-and-pen methods. Pourdana and Tavassoli (2022) further revealed that e-portfolios also foster positive learner engagement at the behavioural, affective, and cognitive levels.

Discussion

The present systematic literature review aimed to investigate FA practices in EFL writing instruction, their reported outcomes, and the role of learners and technology in enhancing writing proficiency. Based on the Black and Wiliam (1998) framework and recent technological developments, the reviewed studies were categorized into three main types: Mediated FA, Learner-centred FA, and Technology-enhanced FA. This classification provides a clear overview of current FA practices and highlights how they contribute to EFL students' writing development.

Among these, learner-centred FA, which emphasizes active student involvement through self-assessment and student-generated rubrics, was particularly highlighted for fostering writing autonomy, metacognitive awareness, and reflective learning (Becker, 2016; Ebrahimi et al., 2021; Meihami & Esfandiari, 2020). Technology-enhanced FA, including e-portfolios, automated feedback, and keystroke logging, often intersects with learner-centred practices, allowing students to visualize revisions, engage in iterative drafting, and collaborate effectively while monitoring their own progress (Aghazadeh & Soleimani, 2020; Bowen et al., 2022; Cheng, 2022; ElEbyary et al., 2024; Torabi & Safdari, 2020; Kaveh & Rassaei, 2022). Mediated FA, involving teacher- or peer-guided scaffolding and feedback, provides additional support by clarifying expectations, guiding strategy use, and promoting active engagement and reflection (Rassaei, 2021; Sardarianpour & Kolahi, 2021; Sherkuziyeva et al., 2023; Abdullateef & Muhammedzein, 2021; Kamali et al., 2018; Mauludin, 2018). These practices demonstrate that FA, through guided mediation, active learner engagement, and technology-supported feedback, can enhance EFL students' overall writing development.

To better understand how FA contributes to writing development across these diverse practices, explanatory data from the reviewed studies were synthesized thematically. The findings indicate that effective FA practices, regardless of type, consistently operate through three recurring mechanisms: meaningful feedback, active learner engagement, and opportunities for iterative revision and reflection. These mechanisms were identified through cross-study analysis of how FA supported learning processes rather than being predetermined by the categorization framework. While FA practices differ in instructional design and implementation, the shared presence of these mechanisms helps explain why a wide range of FA approaches can contribute to improvements in EFL writing performance.

These findings have important implications for teachers and curriculum design. In FA, instructors should balance guidance with learner autonomy, encouraging students to actively participate in the assessment and revision process. At the same time, technological tools should be used judiciously to enhance the visibility and interactivity of feedback. Moreover, teachers can design diverse FA strategies to accommodate the needs of different learners and support continuous improvement.

A notable strength is the diversity of FA practices examined, including mediated, learner-centred, and technology-enhanced approaches, which provides a broad perspective on how FA can be implemented. Additionally, several studies incorporate multiple measures of writing

performance, learner autonomy, and metacognitive awareness, offering a multifaceted understanding of learning outcomes (Becker, 2016; Ebrahimi et al., 2021).

Despite these strengths, several limitations are evident in the literature. Many studies were conducted in specific cultural or institutional contexts (e.g., Iranian or intermediate-level EFL learners), which may limit generalizability (Torabi & Safdari, 2020; Sherkuziyeva et al., 2023). Sample sizes are often small and relatively homogeneous, reducing statistical power and the applicability of findings to diverse learner populations. Intervention durations are frequently short, making it difficult to evaluate the long-term sustainability of FA effects. Moreover, there is considerable variability in FA implementation, terminology, and assessment measures across studies, which complicates cross-study comparisons and systematic synthesis. Finally, while technology-enhanced FA shows promise, not all studies systematically examine how digital tools interact with human guidance or student-centred practices, leaving questions about optimal integration unresolved (Bowen et al., 2022; Kaveh & Rassaei, 2022).

This study has several inherent limitations that must be considered when interpreting the findings. The search scope was restricted to English-language literature from the Scopus and ERIC databases. While this focused the search on high-impact journals, it may have led to the omission of relevant studies published in other languages or indexed in other significant databases (e.g., Web of Science), potentially limiting the comprehensiveness and global generalizability of the conclusions. Like all literature reviews, this study is susceptible to publication bias. Studies reporting statistically significant or positive outcomes are more likely to be published than those with null or negative results (the "file drawer problem") (Rosenthal, 1979, pp. 538-541). This bias could lead to a systematic overestimation of the positive effects of FA practices discussed in this review.

Another significant methodological limitation was the inability to conduct a quantitative meta-analysis of FA application in EFL writing. The included studies exhibited considerable heterogeneity in their intervention designs, pedagogical contexts, outcome measures, and reporting standards. This diversity made it statistically inappropriate to pool the results. Consequently, a narrative synthesis to analyze the findings was employed. While this approach effectively captures the richness and diversity of the research, it cannot provide a single, precise estimate of the overall effect size that a meta-analysis would offer. These limitations define the boundaries of the study's conclusions and highlight avenues for future research.

Future research should further investigate how the identified mechanisms—feedback, learner engagement, and iterative revision and reflection—operate across different instructional contexts and learner populations. Longitudinal and cross-cultural studies with larger and more diverse samples are needed to examine the sustainability and generalizability of FA effects. Additional research is also required to explore how technological tools can be integrated with pedagogical mediation to support these mechanisms more effectively in EFL writing instruction.

Conclusion

In conclusion, this systematic review confirms that FA is an effective approach to enhancing EFL writing across diverse contexts and learner populations. By synthesizing previous studies, three main types of FA practices—mediated, learner-centred, and technology-enhanced—have been identified, each contributing to students' active engagement with the writing process,

responsiveness to feedback, and iterative revision of their work. Beyond these categories, the thematic synthesis of the literature highlights three underlying mechanisms that drive FA effectiveness: meaningful feedback, active learner engagement, and opportunities for iterative revision and reflection. These mechanisms operate across different FA types, suggesting that it is the processes activated by assessment—rather than the format or agent alone—that are central to supporting writing development.

The review also reflects a broader pedagogical shift in EFL writing instruction, emphasizing the empowerment of students to take a more active role in their learning. Technology, particularly AI-enhanced tools and e-portfolios, increasingly supports this shift by providing immediate, process-oriented, and data-informed feedback that facilitates reflection, engagement, and iterative improvement. Looking ahead, research and practice should explore how mediated, learner-centred, and technology-enhanced approaches can be integrated to maximize these mechanisms, as well as examine long-term effects, cross-cultural applicability, and adaptation to individual learner needs. By focusing on the activation of key mechanisms alongside strategic use of technology, EFL writing instruction can move toward more personalized, reflective, and effective formative assessment practices.

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