



Empowering EFL Learners' Writing Skills through the Employment of Automated Peer Feedback

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ABSTRACT

Effective feedback provision is essential for enhancing EFL learners' writing proficiency. Therefore, second language educators need to explore more varied and productive approaches to delivering writing feedback that supports learners' continuous development. In this regard, the integration of automated peer feedback has emerged as a significant innovation in modern second language writing instruction. It enables learners to acquire richer insights, linguistic knowledge, and writing competencies through digitally mediated peer commentaries. This library-based study employed thematic analysis to examine 30 previously published studies on automated peer feedback. The analysis allowed the researcher to identify recurring themes and interpret relevant findings systematically. The main objective of this investigation was to explore how automated peer feedback empowers EFL learners' writing skills. The findings revealed that automated peer feedback enhances learners' writing development by fostering student-centered engagement and collaborative learning environments.

Keywords: Technology; writing; automated peer feedback; library study; thematic analysis

Introduction

Second language writing instruction continually demands that EFL learners demonstrate effective control over coherence, cohesion, linguistic expressions, and clarity of information. Moses and Mohamad (2019) emphasize that it is imperative for educators to equip learners with advanced writing competencies that gradually transform them into proficient writers. However, many EFL learners experience persistent challenges when engaging in writing tasks, often due to the absence of systematic guidance and supportive feedback mechanisms. Siekmann et al. (2023) further note that learners frequently feel discouraged when facing complex writing demands, underscoring the need for more structured, reliable feedback during the composition process.

A key pedagogical approach for enhancing learners' writing performance is the provision of meaningful and constructive feedback. As Lee (2020) asserts, high-quality feedback encourages EFL learners to identify and correct their writing weaknesses, fostering both motivation and self-improvement. Among various feedback methods, peer feedback has proven especially effective in strengthening learners' engagement and awareness of common writing errors. Schillings et al. (2023) highlight that peer feedback enables learners to become more reflective and autonomous writers, while Rahimi et al. (2024) contend that it fosters higher-quality writing outcomes through increased awareness of linguistic and structural conventions. Furthermore, peer feedback nurtures an emotionally supportive and collaborative environment (Shi and Aryadoust, 2024), promoting confidence and mutual respect among learners.

Recently, scholars have begun exploring how technology-enhanced feedback systems, particularly automated peer feedback, can further enrich writing instruction. Automated peer feedback combines the interpersonal benefits of peer assessment with the efficiency and objectivity of digital tools. Link et al. (2022) found that Chinese EFL learners showed measurable improvements in writing performance after engaging with automated peer feedback platforms. Similarly, Saricaoglu and Bilki (2021) confirmed that these tools expose learners to diverse linguistic input and targeted suggestions that align with their writing needs. Zhai and Ma (2022) also underscore the adaptability of automated feedback across different genres, helping EFL learners maintain motivation through contextually relevant guidance.

To maximize the benefits of automated peer feedback, educators must first recognize learners' cognitive, affective, and behavioral writing backgrounds. As Koltovskaia (2020) and Liu et al. (2025) emphasize, understanding individual strengths and weaknesses allows teachers to train learners in analytical and evaluative skills essential for interpreting and applying feedback effectively. This process not only

strengthens their writing accuracy but also develops critical reflection – an indispensable skill in higher-level writing development.

Automated peer feedback additionally supports teachers by reducing the burden of repetitive surface-level correction, allowing them to focus on higher-order aspects such as content and argumentation (Ngo et al., 2024). It also alleviates learners' writing anxiety and writer's block by offering immediate, supportive, and contextually appropriate suggestions (Shang, 2022; Zhang et al., 2023). As Barrot (2023) points out, the integration of automated feedback into daily writing instruction can substantially enrich EFL learners' linguistic repertoire and writing confidence.

Despite its benefits, automated peer feedback presents several challenges, including the credibility of peer-generated suggestions and uneven participation levels among learners. Osman et al. (2022) and Ciampa and Wolfe (2023) stress that meaningful training and calibration are essential to ensure reliability and foster trust in collaborative feedback exchanges. Yallop et al. (2021) further argue that cultivating mutual accountability and group cohesion is crucial for sustaining supportive peer dynamics within digital feedback environments.

Building upon these insights, previous research (e.g., Fan, 2023; Li and Kim, 2024; Taskiran et al., 2024; Yang et al., 2024) has primarily focused on automated feedback tools such as Grammarly and AI-based systems. However, these studies have seldom explored how automated peer feedback specifically empowers learners' writing skills development. To address this gap, the present library-based study investigates the empowering mechanisms of automated peer feedback in enhancing EFL learners' writing proficiency. In alignment with the above-mentioned contentions, this study seeks to explore this single research inquiry: How does automated peer feedback empower EFL learners' writing skills?

Theoretical Framework

The current study is grounded in three complementary theoretical perspectives that explain how automated peer feedback empowers EFL learners' writing development: sociocultural theory, self-regulated learning theory, and feedback literacy.

From a sociocultural theory standpoint (Vygotsky & Cole 2018), learning occurs through social interaction and mediation. Automated peer feedback provides a dynamic platform where learners co-construct knowledge through dialogic exchanges, scaffolding one another's progress toward higher levels of writing competence.

Drawing on self-regulated learning theory (Zimmerman, 2002), automated peer feedback promotes learners' autonomy and reflective engagement. By analyzing digital

feedback, learners plan, monitor, and evaluate their writing processes more effectively – key components of self-regulation that lead to long-term writing improvement.

Finally, the concept of feedback literacy (Carless and Boud, 2018) frames learners as active participants who interpret, internalize, and act upon feedback meaningfully. Automated peer feedback cultivates this literacy by enabling learners to critically evaluate both the feedback they receive and the feedback they provide, thereby transforming feedback from a passive to an empowering learning experience.

In alignment with these theoretical underpinnings, this study seeks to explore: How does automated peer feedback empower EFL learners' writing skills?

Methodology

This study employed a qualitative library-based research design to comprehensively examine how automated peer feedback empowers EFL learners' writing skills. A library-based approach was chosen because it allows for an in-depth synthesis of previously published empirical evidence, offering a holistic understanding of existing scholarly perspectives. According to Klassen et al. (2012), library research promotes dependable findings through systematic data verification, critical analysis, and cross-comparison across studies.

The researchers adopted thematic analysis as the primary analytic technique to identify, categorize, and interpret patterns of meaning from the reviewed studies. As Braun and Clarke (2021) assert, thematic analysis helps researchers organize diverse findings into coherent categories, facilitating a structured and meaningful interpretation of qualitative data. To further enhance analytic transparency, an open coding procedure was implemented. This coding process involved segmenting textual data, assigning preliminary codes, and clustering related ideas into overarching themes. The use of open coding minimized interpretive bias and strengthened the trustworthiness of the findings, as recommended by Nowell et al. (2017).

A structured and replicable search procedure was undertaken to identify relevant literature. The search was conducted between January and June 2025 across several major academic databases, including Scopus, Taylor & Francis Online, Elsevier (ScienceDirect), ERIC, ResearchGate, and Google Scholar. The search strategy combined both controlled and free-text keywords using Boolean operators (AND/OR) to maximize precision and coverage. The primary search terms included: "automated peer feedback," "EFL writing," "AI feedback," "automated writing evaluation," "peer assessment," and "second language writing."

There were three major inclusion criteria employed to ensure the data dependability in this modest library study. The first inclusion criteria refer to Publication

quality where Only peer-reviewed international journal articles were included to guarantee scholarly credibility. Second is about a publication range; Studies published between 2020 and 2025 were selected to capture contemporary perspectives and emerging trends in automated peer feedback. The third inclusion criteria denote topical relevance, through which articles had to explicitly discuss the role of automated peer feedback in enhancing EFL learners' writing skills.

To a lesser extent, the researchers also internalized three main exclusion criteria to ensure the soundness of thematically-categorized research results. Firstly, the researchers focused on selecting studies delving profoundly into teacher-provided feedback or automated tools without peer interaction components. Secondly, the researchers adopted journal articles granting full-text accessibility to gain more comprehensive data portrayals. Lastly, the researchers refrained from selecting conceptual or commentary papers without empirical evidence as the specifically-generated findings are not anchored on scientifically-made and research-informed decisions from former educational experts, practitioners, and authors.

Findings and Discussions

In this part, the researcher stipulated two main themes from the thematic analysis procedure stated above: (1) automated peer feedback promoted learner-centered writing learning engagement, and (2) automated peer feedback fostered collaborative writing environments. More profound delineations concerning these two research themes can be spotted in the ensuing lines.

Theme 1: Automated Peer Feedback Promoted Learner-Centered Writing Learning Engagement

Theme 1	Authors
Automated peer feedback promoted learner-centered writing learning engagement	Shang (2022); Tian and Zhou (2020); Salavatizadeh and Tahriri (2020); Huang and Renandya (2020); Guo et al. (2022); Hasim et al. (2024); Jiang and Yu (2022); Spring (2024); Shi and Aryadoust (2024); Chang et al. (2021); Sanosi (2022); Wei et al. (2023); Cheng et al. (2023); Alharbi (2023); Lee (2020).

Across the reviewed studies, it is worth contending that automated peer feedback promoted more learner-centered writing learning engagement in EFL classroom contexts. Some prominent researchers believed that automated peer feedback provided learners with greater autonomy in the writing process by addressing immediate, accessible, and personalized feedback for the significant betterment of EFL learners' writing performances, skills, and achievements progress (Shang, 2022; Jiang & Yu, 2022; Shi & Aryadoust, 2024). These technologies paved a rewarding trajectory for language learners

to revise and reflect on their text compositions independently, which fostered productive involvement with their writing tasks.

Studies such as Tian and Zhou (2020) as well as Huang and Renandya (2020) emphasized that when EFL learners received specific writing inputs through automated peer feedback, they were more likely to revise pinpointed errors in their writing texts accordingly. These efficient writing revision stages were no longer determined solely by their teachers' commentary but by a clearer understanding of their linguistic and structural challenges. Hasim et al. (2024) and Guo et al. (2022) noted that with automated peer feedback, EFL learners ingrained a robust sense of accountability and self-efficacy, motivating them to constantly hone the targeted writing competencies outside the regular classroom routines.

Moreover, several researchers, including Sanosi (2022) and Cheng et al. (2023), pointed out that learner-centered engagement was reinforced by the presence of systematic and comprehensible writing suggestions addressed by automated peer feedback. Unlike conventional teacher and peer comments, which may vary in quality and specificity, Automated peer feedback maintained uniform standards, ensuring that all learners received equitable writing support. Alharbi (2023) and Chang et al. (2021) also noted that this uniformity helped reduce excessive foreign language writing anxiety, especially for lower-proficiency learners, who felt more comfortable making revisions based on objective, positive, and supportive writing suggestions.

Wei et al. (2023) and Spring (2024) explored EFL learners' perceptions of automated peer feedback. They both discovered that second language learners appreciated the meaningful application of automated peer feedback by which they could profoundly plan, monitor, and evaluate their personalized writing learning progress. This greater sense of autonomy was pivotal in transitioning writing instruction from a teacher-dominated activity to a learner-centered experience. Finally, Lee (2020) highlighted the importance of training EFL learners to interpret specific writing inputs in automated peer feedback critically, thereby enhancing their metacognitive awareness and transforming feedback into a powerful self-regulatory mechanism for them to conduct a more seamless writing ideation process.

Taken together, the above-reviewed studies unveiled that automated peer feedback, when implemented effectively, not only sustains significant grammatical and structural improvements but also cultivates active learner participation, self-direction, and meaningful engagement in their whole writing learning development.

Theme 2: Automated Peer Feedback Fostered Collaborative Writing Environments

Theme 2	Authors
Automated peer feedback fostered collaborative writing environments	Benali (2021); Liaqat et al. (2021); Cao et al. (2022); Wang and Han (2022); Jingxin and Razali (2020); Link et al. (2022); Shadiev and Feng (2024); Rahimi et al. (2024); Wei and Liu (2024); Elboshi (2021); Aldosemani et al. (2023); Fan and Ma (2022); Woodworth and Barkaoui (2020); Li et al. (2023); Liu et al. (2025).

In addition to supporting individual engagement, automated peer feedback played a central role in promoting collaborative learning environments. A notable insight from the reviewed studies is that automated peer feedback facilitated more interactive and cooperative commentary exchanges, encouraging learners to conduct more meaningful text revisions (Benali, 2021; Liaqat et al., 2021; Wang & Han, 2022). Cao et al. (2022) and Link et al. (2022) uncovered that when EFL learners partake in automated peer feedback enterprises, they are more familiar with frequent errors forming in their writing texts, resulting in a comprehensive understanding of specifically assessed writing criteria. These collaborative exchanges prompted EFL learners to be more reflective academicians as they exhaustively pondered on their peers' works, enabling them to improve the quality of their forthcoming writing compositions.

Rahimi et al. (2024) and Elboshi (2021) emphasized the pivotal role of automated peer feedback in streamlining the peer review process by providing more well-structured writing guidance best fitting EFL learners' specific writing conditions. These collaborative writing supports fostered their abilities to impart positive, appreciative, and relevant feedback impacting them to stay on the right writing tracks. With these constructive writing dynamics, EFL learners are motivated to showcase more active participation in addressing relatable commentaries to improve others' writing works. By doing so, EFL learners will be put at ease while engaging in a personalized writing text composition process as they infuse clear end goals in their minds before commencing the real-time writing activities.

Jingxin and Razali (2020) and Shadiev and Feng (2024), emphasized how automated peer feedback entrenched solid collaborative networking among EFL learners. The asynchronous nature of this feedback allowed EFL learners to cope with challenging writing assignments in which they allocated equitable responsibility to fulfill their pre-determined writing objectives. Through this positively sound writing learning atmosphere, language learners were more prone to experience a higher degree of writing learning enjoyment as they infused a higher sense of communal accountability useful for the significant advancement of their impending academic progress.

Further, the studies by Fan and Ma (2022), Liu et al. (2025), and Li et al. (2023) unraveled that automated peer feedback fostered a robust sense of community in writing

classroom vicinities, particularly in blended and remote learning contexts. With this socially-oriented writing learning context, EFL learners are trained to develop commendable communication skills, empathy, and a deeper appreciation for diverse perspectives. This sense of interdependence was apparent when the reciprocity of commendations and recommendations kindled language learners' motivation to keep showcasing exemplary writing performances in the long run.

Woodworth and Barkaoui (2020) and Aldosemani et al. (2023) concluded that fostering collaboration through automated peer feedback also helped reduce the excessive dependency on teachers' suggestions, which generally occurs in conventional writing classroom surroundings. By receiving an array of novel and insightful writing inputs, EFL learners will have broader opportunities to shift into more ingenious academicians since they can determine the most feasible strategies that work most compatibly with their current writing tasks.

In summary, the decent utilization of automated peer feedback did not merely instill advanced writing skills but also cultivated more collaborative and participatory classroom cultures among heterogeneous target language academicians. These digital platforms broadened writing knowledge, encouraged critical feedback exchanges, and ultimately led to a more interactive writing learning environment.

Conclusions and Recommendations

This small-scale library study has illuminated the meritorious rewards of automated peer feedback second language writing learning dynamics, particularly its role in enhancing learner-centered engagement and fostering collaborative writing environments. The findings across these two themes demonstrated that the precise internalization of automated peer feedback empowered EFL learners' progressive writing proficiency development by cultivating robust autonomy, active participation, and self-regulation in varied writing learning enterprises. Automated peer feedback is also beneficial for facilitating a more inclusive and dialogic classroom culture in which peer interaction and collective knowledge construction are central to transforming language learners into more mature, optimistic, and resourceful writers.

The implications of these findings are paramount for second-language educators, curriculum designers, and educational technology developers. Firstly, second language instructors are encouraged to ascertain that the implementation of automated peer feedback does not merely serve as a correctional aid but as an expedient platform to cultivate a strong sense of agency and exhaustive reflective agency among EFL learners. Educators need to consider providing their learners with training on how to interpret and act upon automated feedback to maximize its influence. Secondly, automated peer

feedback should be strategically implemented to support peer collaboration. This possibility can be done by designing more interactive, meaningful, contextualized writing activities. By actualizing the suggested advice, EFL learners can potentially participate in solid, meaningful, and collaborative group-sharing dynamics allowing them to thrive on their writing competencies to the fullest potential. Lastly, automated peer feedback must be harmonious with EFL learners' writing preferences, skills, and conditions. By doing so, second language learners can share mutual equability in accomplishing their designated writing tasks, resulting in the attainment of fruitful academic achievements.

In sum, automated peer feedback is rewarding to enforce progressive and significant transformation in their writing proficiency levels. The occurrence of these most-coveted writing learning benefits can potentially take place as second language learners maximize their unique writing talents and expend their collaborative writing efforts to achieve the fullest potential of their critical literacy abilities; being capable of scaffolding others' writing skills progress and rejuvenating their insights in the presence of multifarious writing tasks.

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