Integrating Corrective Feedback in EFL Classrooms: Harmonizing Traditional Pedagogies with Digital Innovations

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Abstract: In contemporary language education, integrating traditional pedagogies with digital innovations signifies a pivotal shift in teaching and learning practices. This synergy enhances language acquisition by blending established instructional methods with the precision and adaptability contributed by emerging digital technologies, particularly Artificial Intelligence (AI) tools. Despite the challenges in fostering fluency in English as a foreign language (EFL) classrooms, corrective feedback (CF) remains a cornerstone of effective language learning. This study explores the intersection between traditional corrective feedback methodologies and the potential of artificial intelligence-powered technologies, specifically examining the impact of immediate feedback and oral grammar correction provided by artificial intelligence language assistants, focusing on Grammarly as a case study. Employing a quasi-experimental design, this research compares the effectiveness of traditional corrective feedback with artificial intelligence-mediated feedback, analyzing the outcomes using statistical methods in SPSS. The findings aim to contribute useful implications and valuable insights into the educational advantages of integrating artificial intelligence technologies in language classrooms.

Keywords: artificial intelligence (AI), automatic writing evaluations, corrective feedback, digital innovations, language teaching.

Introduction

Corrective feedback has become a central concern for both scholars and practitioners within the field of language learning and teaching. According to Ellis (2006), corrective feedback is the response to learner utterances containing errors. This does not mean that its sole function is to point out the error, but instead, it acts as a scaffold that promotes students' L2 growth (Lyster et, al., 2013 as cited in Li & Huang, 2017, p 1033). Sakale (2019) highlights that feedback from teachers during speaking tasks significantly enhances learners' "interaction enhancement and negotiation density," both of which are essential for bridging the gap between fluency and accuracy (p. 345). This aligns with Swain's (2008) perspective that teacher-led feedback serves to "push" learners to modify their output, thereby encouraging more profound linguistic processing (as cited in Sakale, 2019, p. 345). While Automated Writing Evaluation (AWE) tools, such as Grammarly, offer scalable alternatives, these findings emphasize the irreplaceable role of human-mediated feedback in addressing context-specific communicative needs.

Although they still have value, traditional approaches to corrective feedback (CF) in language acquisition have various drawbacks. Automatic Writing Evaluation (AWE) tools such as Grammarly provide a very useful alternative to CF. They offer instantaneous and customized feedback on syntax, readability, and style. In order to compare Grammarly's efficacy with conventional CF techniques and investigate its potential to completely transform the way feedback is delivered in language classes, this article focuses on Grammarly's influence on writing proficiency.

Traditional approaches to CF, such as teacher-led or peer corrections, have played a significant role in language acquisition. However, these methods are not without limitations. They are issues related to consistency, responsiveness and scalability. For instance, a delay in receiving feedback can hinder learning, and the subjective nature of human intervention of teachers can lead to variability in the quality of feedback. Thus, there is a growing interest among researchers in exploring alternative methods that can provide more immediate, consistent and scalable feedback.

The potential of AWE tools extends beyond mere error correction. They can serve as valuable pedagogical aids that enhance students' overall writing development. For example,

Grammarly not only identifies grammatical errors but also offers suggestions for improving sentence structure, vocabulary usage, and writing style. This holistic approach helps learners internalize linguistic rules and develop a more nuanced understanding of effective communication. Moreover, the consistent and data-driven nature of AWE feedback can reduce the cognitive load on educators, allowing them to focus on higher-order teaching activities such as fostering critical thinking and creativity in writing.

In this regard, Automated Written Evaluation (AWE) tools have emerged as a promising alternative. Tools such as Grammarly offer instant and personalized feedback on various aspects of writing (e.g. syntax, readability, style…). These tools also provide detailed and specific comments using advanced algorithms and AI. This is especially useful for language learning. In fact, the immediacy of feedback provided by AWE tools can lead to faster revision and more effective retention of learning than traditional methods.

While the integration of Automatic Writing Evaluation (AWE) tools such as Grammarly has been widely recognized for its potential to enhance writing proficiency through immediate and accessible feedback, it is critical to acknowledge their inherent limitations. Chief among these concerns is the risk of fostering student over-reliance on automated feedback, which may hinder the development of independent editing skills and critical language awareness over time. Moreover, AWE-generated feedback, while efficient, often lacks the contextual sensitivity and interpersonal engagement that characterize traditional teacher-led feedback, which remains vital for building deeper pedagogical relationships and addressing learner-specific need.

Recent studies provide valuable insights into the integration of digital tools in corrective feedback (CF), highlighting both their perceived effectiveness and the challenges associated with their implementation. For example, Rkiki and Sakale (2025) found that 57.14% of Moroccan EFL teachers consider digital CF tools "more effective" than traditional methods, particularly in fostering self-correction and scalability (p. 6). However, the study also identifies persistent barriers, including limited technological access (34.3%) and inadequate training (31.4%), which hinder the broader adoption of these tools despite teachers' openness to their use (p. 7). These findings align with the argument that while Automated Writing Evaluation (AWE) tools, such as Grammarly, hold transformative potential, their success is contingent upon addressing gaps in both infrastructure and pedagogical support.

Literature Review

Automatic Writing Evaluation (AWE)

The introduction of Automatic Writing Evaluation (AWE) tools, which provide a supplementary method to linguistic aid that teachers offer in their classrooms using traditional pedagogies, further advances this evolution. AWE systems act as intelligent tutors, evaluating writing and offering automated comments on grammar, clarity, and style. This is similar to how AI writing assistants help individual authors.

More recent attention has focused on automated writing evaluation (AWE) programs, also known as computer-generated feedback. AWE program which is generally known as computer-generated feedback has seized increased attention in writing research in recent years (Bitchener, 2019; Fahmi & Cahyono, 2021). This popularity stems from their ability to provide immediate feedback on written assignments. These systems use artificial intelligence and algorithms to examine several parts of writing, including coherence, grammar, syntax, and vocabulary usage. Additionally, they employ artificial intelligence developed by computational linguistics to rate and score the writing submitted to the program (Ferster et al., 2012; Wilson, 2016; Wilson & Andrada, 2016 as cited in Fahmi & Cahyono, 2021, p. 18).

This automatic feedback method empowers learners by providing timely insights into their writing strengths and areas for improvement, ultimately fostering feedback and corrections provided by the system, allowing them to revise their writing based on the provided assessment. Chen & Cheng (2008), Ferster et al (2012), Leow, (2020), Leow, 2023; Leow & Suh, (2021), O'Neill & Russell (2019), Chou et al. (2016), and Kotos (2011) note how this process can help users save time from the tedious task of manually checking and grading.

AWE programs serve as valuable tools for both teachers and learners, offering effective and customized feedback to complement traditional teaching methods. Integrating AWE programs into the teaching process enables teachers to refine their instructional practices and enhance students' language learning experience.

Chou et al. (2016) reasonably questioned the effectiveness of AWE in assisting learners with lower English proficiency in self-correction to enhance writing quality. Despite the increasing use of AWE tools in language learning contexts, the extent to which AWE tools effectively support self-correction in low-level learners is still an area that requires further research.

Grammarly

Awalin and Iftanti (2023) assume that artificial intelligence is a component of human intelligence, just as media is an extension of the human body. This means that there is a mutually beneficial link between AI and humans today. AI is considered as the most sophisticated technology of our day that is applied and used in various fields including education, it has also revolutionized various parts of our lives, notably in language-related activities. (Awalin & Iftanti, 2023, p. 170). Among the AI-powered writing assistants, Grammarly has emerged as a widely used tool that offers users grammar and spelling correction, style suggestions, and writing enhancements." (Awalin & Iftanti, 2023). They may be useful learning assistants that help learners comprehend the reasoning behind certain recommendations and progressively strengthen their writing abilities.

Grammarly helps users get a deeper knowledge of grammatical rules, sentence structure, and successful communication techniques by offering thorough explanations and alternative wording possibilities. This goes beyond just "fixing" mistakes; it gives users the tools they need to become more self-assured and capable writers; paving the way for improved writing proficiency and communication effectiveness.

Furthermore, Grammarly stands out as one of the most widely used options that can be effectively integrated into writing classes (Fahmi & Cahyono, 2021, p. 19). Grammarly is praised as a valuable resource for students and academic institutions looking to improve their writing skills. It is well-known for its intuitive interface. It effectively finds and fixes spelling, grammar, and punctuation mistakes by carefully going over texts; this helps to improve the overall quality of writing. It also offers a variety of features to both teachers and students, such as ideas for styles, corrections of grammar and spelling, and improvements to the general quality of writing (Awalin & Iftanti, 2023). With the help of this extensive toolkit, teachers, and students may improve written communication by addressing basic issues like spelling and grammar accuracy and get insights on how to improve writing style and effectiveness (Awalin & Iftanti, 2023).

Furthermore, Grammarly provides more than just error detection; it also provides thorough feedback that includes ideas and changes meant to improve the writing's impact, readability, effectiveness, clarity, and precision (Fahmi & Cahyono, 2021). This feedback's evaluation speed and high degree of correctness further increase its usefulness during the writing process. Grammarly (2020) attests that its correctness, efficiency, and accessibility make it a preferred option for those looking to improve the quality of their written work. Grammarly's capabilities

extend beyond only pointing up common problems like misspellings and punctuation. The program shows skill in identifying subtle mistakes, such as improper noun spellings and missing spaces after periods, and provides many different repair ideas (Daniels & Leslie, 2013 as cited in Fahmi & Cahyono, 2021, p. 19).

In addition to Grammarly, several other Automatic Writing Evaluation (AWE) tools have emerged, offering varied functionalities and benefits to learners of different proficiency levels. For instance, Turnitin's Revision Assistant provides real-time feedback on writing quality, focusing on aspects such as argumentation, clarity, and coherence (Turnitin, 2020). Similarly, tools like ProWritingAid and Hemingway Editor emphasize style and readability, offering suggestions that help learners enhance their writing beyond mere grammatical correctness. These tools are particularly beneficial for advanced learners who seek to refine their writing for precision and style. However, while these alternatives may offer more tailored feedback in specific areas, they share similar limitations to Grammarly in addressing the needs of lower-proficiency learners. AWE tools, such as ProWritingAid, are often utilized to enhance stylistic features of writing, focusing on aspects like readability and coherence. However, their ability to address foundational linguistic competencies—such as sentence structure and grammatical accuracy—remains limited, particularly for novice learners (Stevenson & Phakiti, 2014; Nadif & Bidari, 2023). Research highlights the importance of these foundational elements in the early stages of language acquisition, where explicit form-focused instruction is essential for promoting accurate language use (Ellis, 2008). Consequently, while AWE tools like ProWritingAid provide valuable support for learners aiming to improve their writing style, their pedagogical effectiveness is heavily influenced by the learners' existing language proficiency and the type of feedback mechanisms embedded within the tool (see Chapelle & Jamieson, 2008). As such, these tools may be more beneficial for intermediate and advanced learners, while novice learners may require more targeted, teacher-mediated interventions to address basic grammatical and syntactic issues effectively.

Corrective feedback

Corrective feedback has become a central concern for both scholars and practitioners within the field of language learning and teaching. According to Ellis (2006), corrective feedback is the response to learner utterances containing errors. This does not mean that its sole function is to point out the error, but instead, it acts as a scaffold that promotes students' L2 growth (Lyster et al., 2013 as cited in LI & Huang, 2017, p. 1033). Suzuki (2014) defines CF as the

pedagogical technique that teachers use to draw attention to students' erroneous utterances which could lead to students' modified output (as cited in Liu & Peng, 2020, p.826).

Liu and Peng (2020) further emphasize the idea of accuracy in their definition of corrective feedback; they explain that CF is any information teachers provide upon erroneous utterance which indicates incorrect or improper use of the target language and which encourages the learners to achieve accuracy in the target language. In a nutshell, corrective feedback is the teachers' reactions (both oral and written) to students' faulty utterances which aims at pointing out the mistakes and motivating students to use the target language correctly.

The importance of corrective feedback in language learning cannot be overstated. Numerous studies have shown the provision of timely and appropriate corrective feedback can significantly improve learners' language proficiency (Bitchener & Knoch, 2010; Sheen, 2007; Watcharapol, 2023). Corrective feedback not only helps learners identify and correct their errors but also provides them with valuable information about the target language, thereby enhancing their overall learning experience.

Moreover, the effectiveness of corrective feedback is heavily dependent on the type and timing of the feedback provided. Researchers have explored various corrective feedback strategies, such as explicit correction, recasts, clarification requests, and metalinguistic feedback, and have found that different strategies may be more suitable for different learning contexts and learner proficiency levels (Chong, 2019; Li & Vuono, 2019; Lyster & Ranta, 1997; Nadif & Bidari, 2023; Nassaji, 2020; Sheen, 2011). Consequently, language teachers must carefully consider the most appropriate corrective feedback approach for their students to maximize its impact on language development.

CF Types

In this study, we adopt Lyster and Ranta's (1997) prominent clarification of CF in which they categorized it into six broad types: Explicit correction, recast, clarification request, metalinguistic feedback, elicitation, and repetition (see Table 1). The choice to implement this classification is based on the fact that there is a gap in the literature concerned with this topic in the EFL Moroccan context.

Table 1. ***Corrective Feedback (Based in Lyster and Ranta, 1997)***

CF types	Definition	Example
Explicit correction	Indicates the teacher provides the correct form and points out what the student said is incorrect.	S: The program will start on May. T: Not on May, in May. We say "the program will start in May."
Recast	Reformulates all or part of the incorrect word or phrase, to show the correct form without explicitly identifying the error.	S: I have to find the answer on the book? T: In the book.

Clarification request	Indicates that the students' utterance was not understood and asks that the student reformulate it.	S: what did you spend with your friends yesterday? T: What? (or, Sorry?)
Metalinguistic feedback	Gives technical linguistic information about the error without explicitly providing the correct answer.	S: there will be some influence people at the party. T: Influence is a noun.
Elicitation	Prompts the student to self-correct by pausing or using questions so the student can fill in the correct word or phrase.	S: This tea is very warm. T: It's very…? S: Hot.
Repetition	Repeats the students' error while highlighting the error or mistake by means of emphatic stress.	S: I will showed you. T: I will SHOWED you? S: I will show you.

The categorization of corrective feedback types provided by Lyster and Ranta (1997) has been widely adopted and validated by researchers across various language learning contexts. This framework offers a comprehensive and systematic approach to understanding the different ways in which teachers can provide feedback to their students, each with its own strengths and weaknesses. Furthermore, implementing this classification in the current study is particularly relevant given the limited research on corrective feedback practices in the Moroccan EFL context. By exploring the use of these feedback types in Moroccan classrooms, the study aims to contribute to the growing body of knowledge on effective language teaching strategies in this specific educational setting. Furthermore, the implementation of this classification in the current study is particularly relevant given the limited research on corrective feedback practices in the Moroccan EFL context. Morocco presents a unique linguistic landscape where Arabic, French, and Berber languages coexist, and English as a Foreign Language (EFL) education is gaining prominence. Understanding how corrective feedback is employed in this multilingual environment can provide valuable insights into the adaptation of feedback strategies to diverse linguistic settings.

Methodology

Method

The present study employs a descriptive-analytical methodology to evaluate the efficacy of AI-enhanced corrective feedback on the grammatical accuracy in written English of EFL students. The study's participants were systematically allocated to one of two groups: a conventional corrective feedback cohort or a group receiving AI-mediated feedback via Grammarly. The research encompassed learners of varying linguistic competencies—elementary, intermediate, and advanced—to ascertain the influence across a heterogeneous

learner demographic. One limitation of the participant allocation is the potential for selection bias, which could affect the comparability of results between the two groups.

Data pertaining to the learners' predilections and viewpoints were collated through the deployment of questionnaires in conjunction with the written exercises. This dual-faceted strategy, amalgamating an objective appraisal of written assignments with a subjective gauge of learner sentiment, facilitated an exhaustive inquiry into the posited research queries.

Participants

The present study utilizes a descriptive-analytical methodology to evaluate the efficacy of AI-enhanced corrective feedback on the grammatical accuracy in written English of (N= 294) EFL students. The study's participants were systematically allocated to one of two groups: a conventional corrective feedback cohort or a group receiving AI-mediated feedback via Grammarly. The research encompassed learners of varying linguistic competencies—elementary, intermediate, and advanced—to ascertain the influence across a heterogeneous learner demographic. Data pertaining to the learners' predilections and viewpoints were collated through the deployment of questionnaires in conjunction with the written exercises. This dual-faceted strategy, amalgamating an objective appraisal of written assignments with a subjective gauge of learner sentiments, facilitated an exhaustive inquiry into the posited research queries.

Procedures

This study aims to bridge the gap between traditional corrective feedback (CF) and the potential of AI-assisted tools for language learning. We will investigate the effectiveness of immediate and oral grammar error correction provided by an AI language assistant, specifically Grammarly, on the written English grammar accuracy of EFL learners compared to traditional CF methods. We will use a descriptive-analytic design with learners at different proficiency levels (beginner, intermediate, advanced) receiving either traditional CF or Grammarly-assisted feedback during written tasks.

Thus, the research questions are formulated as follows:

1. To what extent does immediate and oral grammar error correction provided by AI language assistants, specifically Grammarly, improve the grammatical accuracy of EFL learners' written English compared to traditional corrective feedback methods?

2. What are EFL students' attitudes towards the integration of AI, particularly Grammarly, in the teaching of grammar, and how do these attitudes compare to traditional methods of corrective feedback?

The present study utilizes a descriptive-analytical methodology to evaluate the efficacy of AI-enhanced corrective feedback on the grammatical accuracy in written English of EFL students. The study's participants were systematically allocated to one of two groups: a conventional corrective feedback cohort or a group receiving AI-mediated feedback via Grammarly. The research encompassed learners of varying linguistic competencies—elementary, intermediate, and advanced—to ascertain the influence across a heterogeneous learner demographic. Data on the learners' predilections and viewpoints were collated through the deployment of questionnaires in conjunction with the written exercises. This dual-faceted strategy, amalgamating an objective appraisal of written assignments with a subjective gauge of learner sentiment, facilitated an exhaustive inquiry into the posited research queries.

Results

Figure 1. I find traditional corrective feedback provided by my teacher helpful.

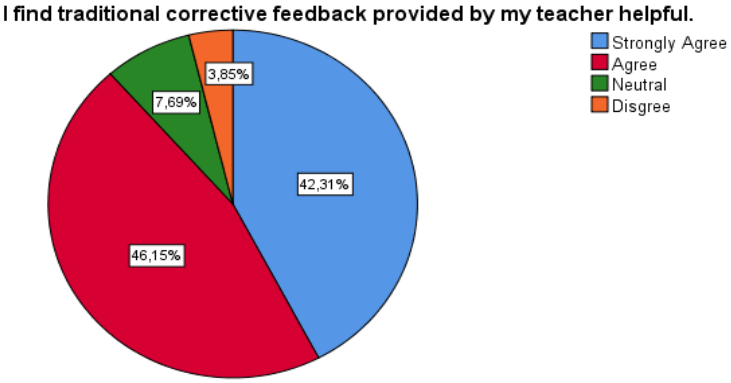

Figure 1 reveals that a predominant proportion of respondents affirm the utility of traditional corrective feedback provided by their teachers. The distribution of responses is as follows:

- Strongly Agree: 42.31%
- Agree: 46.15%
- Neutral: 7.69%
- Disagree: 3.85%

These findings indicate that a vast majority, specifically 88.46%, agree to some extent with the statement, indicating a widespread approval of traditional corrective feedback. Conversely, a small portion, totalling 11.54%, either feel uncertain or disagree, suggesting potential

reservations or dissatisfaction with this feedback method. Overall, the data supports a strong endorsement of traditional corrective feedback in this educational context.

Figure 2. *I believe receiving immediate feedback on my grammar errors is important for improving my written English.*

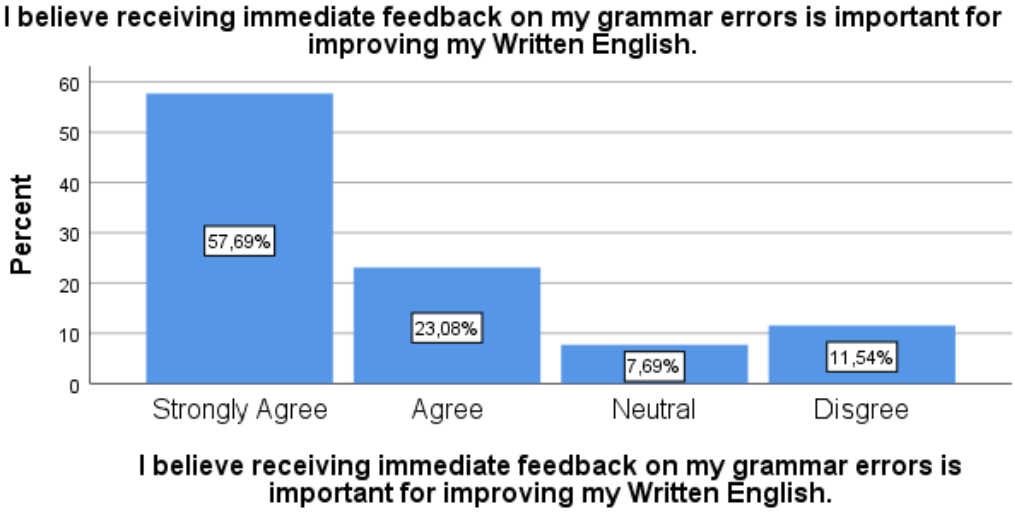

Figure 2 shows respondents' attitudes towards immediate feedback on grammar errors for enhancing their written English proficiency is as follows:

- Strongly Agree: 57.69%
- Agree: 23.08%
- Neutral: 7.69%
- Disagree: 11.54%

This indicates that a considerable majority, 80.77%, either strongly agree or agree with the importance of receiving immediate feedback, highlighting its perceived value in the language learning process. A small percentage, 19.23%, are either neutral or disagree, which may suggest some skepticism about the effectiveness of immediate feedback or different learning preferences. Overall, the data suggests that immediate grammatical feedback is considered important by most respondents for improving their written English.

Fig. 3. I believe receiving corrective feedback from an AI language assistant (e.g. Grammarly) could be beneficial for improving my written English language

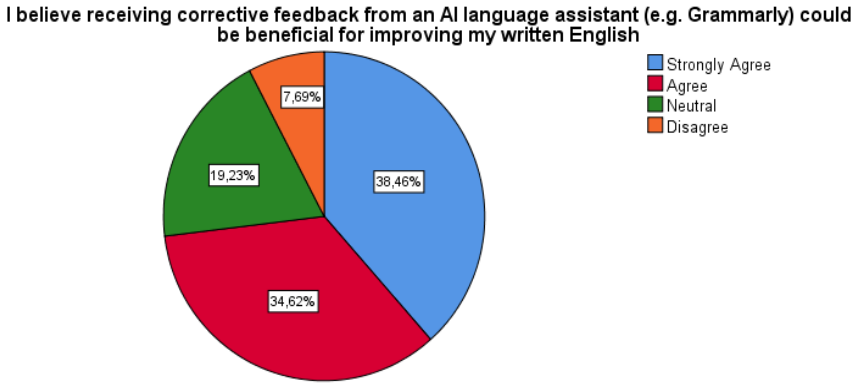

Figure 3 indicates a predominantly positive reception towards the utilization of an AI language assistant for enhancing written English proficiency. A significant majority of respondents, amounting to 73.08%, either ‘strongly agree’ or ‘agree’ with the statement, suggesting a general consensus on the perceived benefits of AI-driven corrective feedback. Conversely, a minority of 7.69% ‘disagree’, which may reflect skepticism or dissatisfaction with the current capabilities of AI language assistants. The ‘neutral’ stance of 19.23% could indicate a lack of familiarity with AI tools or uncertainty about their efficacy.

In academic discourse, this data could be interpreted as supportive evidence for integrating AI language assistance in educational contexts, particularly for non-native English speakers seeking to refine their language skills. However, the dissenting and neutral perspectives also highlight the need for further research into user experiences and the optimization of AI feedback mechanisms.

Fig. 4. I trust the feedback provided by AI language assistants

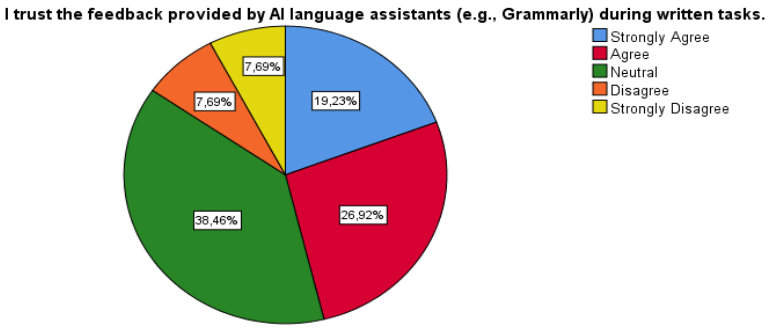

Figure 4 illustrates the distribution of participants' attitudes toward the trustworthiness of AI-generated feedback in written tasks. The results indicate a divided yet cautious outlook: 46.15% of participants express trust in the feedback (19.23% strongly agree, 26.92% agree), while the largest group (38.46%) remains neutral. This neutral stance may reflect uncertainty, limited exposure to AI tools, or inconsistency in feedback quality. A minority of participants (15.38%) express distrust, with an equal proportion disagreeing (7.69%) and strongly

disagreeing (7.69%). The bimodal nature of the distribution suggests that trust in AI feedback is not universally shared, potentially influenced by prior experience with AI assistants or perceptions of the feedback's accuracy. However, the significant proportion of neutral responses calls for further examination to determine whether this reflects ambivalence, a lack of firm convictions, or contextual factors within the learning environment.

Figure 5. I would like to receive more opportunities for AI-assisted feedback during written tasks in the future.

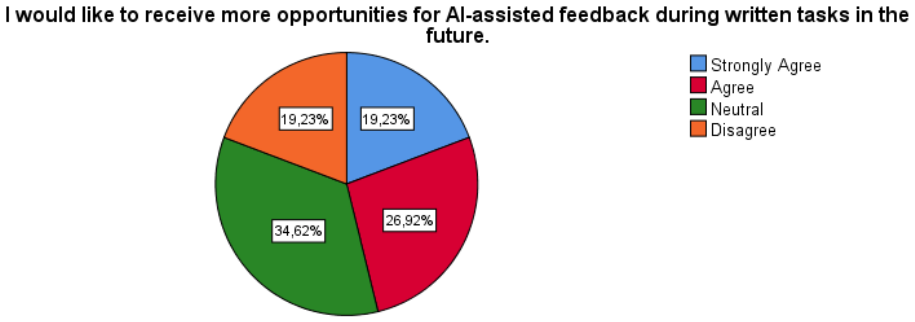

Figure 5 presents the distribution of preferences among respondents regarding the desire for increased AI-assisted feedback in future written tasks. The results indicate a bimodal distribution of opinions, with the majority of respondents falling into the ‘Neutral’ and ‘Agree’ categories.

- *Strongly Agree* (19.23%): A significant minority of the participants are highly receptive to the idea of more AI-assisted feedback, suggesting a strong perceived value in such tools for their writing process.
- *Agree* (26.92%): This represents over a quarter of the respondents, indicating a general positivity towards the proposition, albeit with less intensity than those who strongly agree.
- *Neutral* (34.62%): The largest proportion of respondents are ambivalent. This could suggest a lack of familiarity with AI-assisted feedback tools or uncertainty about their potential efficacy.
- *Disagree* (19.23%): An equal proportion of participants as those who strongly agree are not in favor of increasing AI-assisted feedback, which could reflect skepticism about the technology or satisfaction with current feedback mechanisms.

Figure 6. I prefer receiving corrective feedback from my teacher during written tasks.

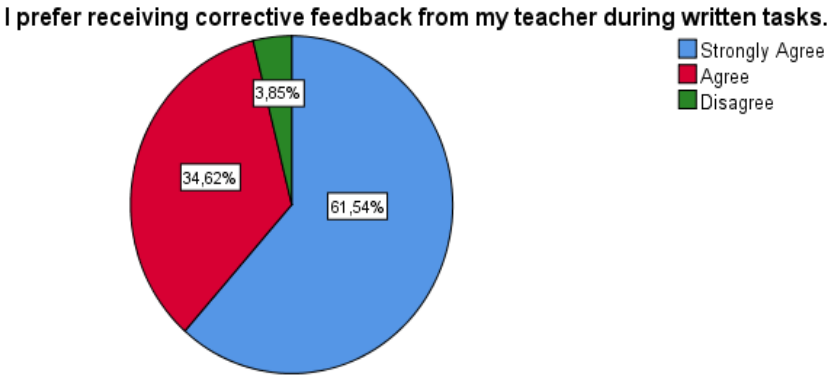

Figure 6 reflects a strong preference among respondents for receiving corrective feedback from their teachers during written tasks. The distribution of responses is as follows:

- *Strongly Agree* (61.54%): A significant majority of the participants express a robust preference for teacher-led feedback, indicating a high level of trust and value placed in personalized, human interaction during the learning process.
- *Agree* (34.62%): Adding to the majority, over a third of respondents favor teacher feedback, though with less intensity than those who strongly agree. This suggests that while there is a general consensus on the value of teacher feedback, the degree of preference varies.
- *Disagree* (3.85%): A very small minority do not prefer teacher feedback during written tasks. This could be due to a variety of reasons, such as past negative experiences, a preference for self-assessment, or a desire for more autonomous learning environments.

This indicates a pronounced inclination towards traditional forms of feedback, which could be attributed to the perceived effectiveness of direct and personalized guidance. The overwhelming support for teacher feedback underscores its importance as a cornerstone of educational pedagogy. It also suggests that any integration of AI-assisted feedback systems should complement rather than replace the role of teachers, ensuring that the human element remains central to the educational experience.

Figure 7. Receiving feedback from an AI language assistant motivates me to improve my English skills.

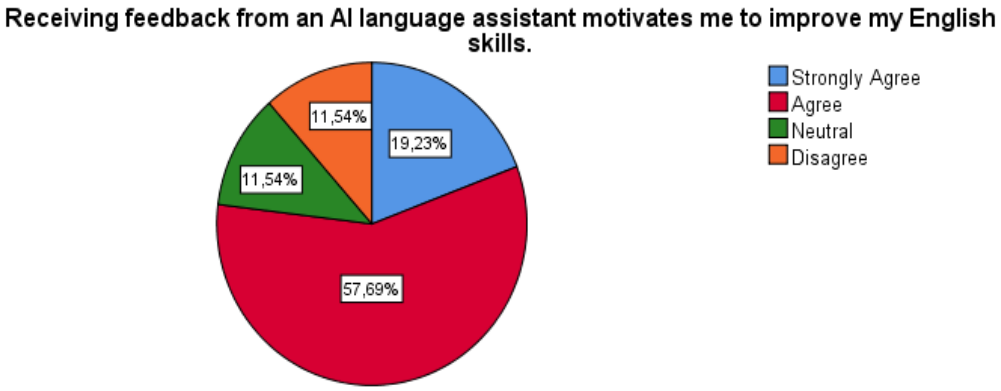

Figure 7 reflects participants' attitudes towards the motivational impact of feedback from an AI language assistant on their English language learning. The distribution of responses is as follows:

- Strongly Agree: 19.23%
- Agree: 57.69%
- Neutral: 11.54%
- Disagree: 11.54%

The majority of participants (76.92%) affirm the positive influence of AI feedback on their motivation to enhance English proficiency, with more than half (57.69%) agreeing and a significant minority (19.23%) strongly agreeing. This suggests a general consensus on the effectiveness of AI assistance in language learning motivation.

A small proportion of respondents (11.54%) remain neutral, indicating ambivalence or uncertainty about the impact of AI feedback on their motivation. This could be attributed to varied experiences or a lack of substantial interaction with AI language assistants. An equal percentage of participants (11.54%) disagree with the statement, which may reflect skepticism towards AI feedback or a preference for alternative forms of feedback, such as human interaction or self-assessment.

It is worth noting that the data indicates a predominantly positive reception of AI language assistants as a motivational tool in English language acquisition. However, it also highlights the need for further research to understand the reasons behind the neutral and negative perceptions and to explore the potential for AI language assistants to cater to a wider range of learning preferences.

Fig. 8. If you have used Grammarly or similar tools before, how helpful did you find it in improving your written English skills?

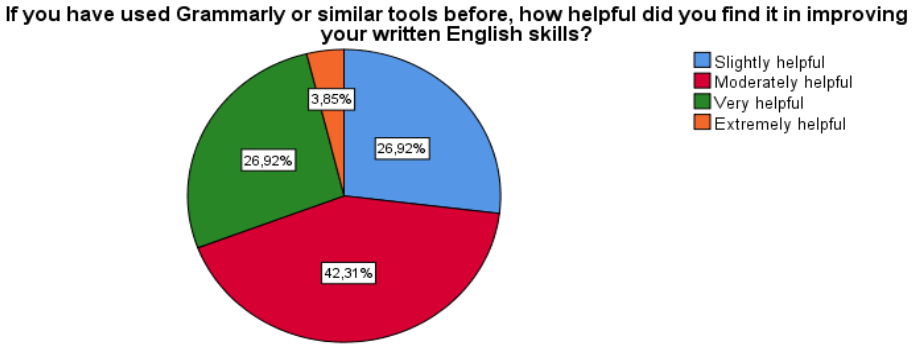

Figure 8 shows that a small proportion of respondents (11.54%) remain neutral, indicating ambivalence or uncertainty about the impact of AI feedback on improving their writing skills in the English language. This could be attributed to varied experiences or a lack of substantial interaction with AI language assistants. An equal percentage of participants (11.54%) disagree with the statement, which may reflect skepticism towards AI feedback or a preference for alternative forms of feedback, such as human interaction or self-assessment.

Discussion

This analysis explores student preferences for feedback mechanisms in English language learning. A strong majority (88.46%) endorsed traditional corrective feedback, and a significant portion (80.77%) favored immediate grammatical feedback, highlighting their perceived value in improving English proficiency. However, a minority expressed reservations: 11.54% were unsure or disagreed with traditional methods, and 19.23% were neutral or disagreed with immediate feedback.

The survey also examined attitudes towards AI language assistants. The majority (73.08%) viewed them positively in educational settings, suggesting a consensus on their potential benefits. However, the significant number of neutral responses (26.92%) underscores the need for further research and development to cater to diverse learning needs.

Regarding trust in AI feedback, nearly a fifth (19.23%) expressed strong trust, indicating confidence in its accuracy. Moderately trusting students comprised another significant portion (26.92%), while the largest group (38.46%) remained neutral, possibly reflecting a wait-and-

see approach. A minority (15.38%) expressed skepticism, with equal numbers disagreeing and strongly disagreeing.

Opinions on the increased use of AI feedback were mixed. A significant minority (19.23%) welcomed it, while a quarter (26.92%) were positive. However, a sizable group (34.62%) remained neutral, and a notable fraction (19.23%) opposed it. This suggests cautious optimism about AI's role in writing improvement. Additionally, the 11.54% who were undecided or disagreed with AI's effectiveness highlight the need for further investigation into learner preferences.

Overwhelmingly, students preferred written feedback from teachers (61.54%), with over a third (34.62%) agreeing. Only a small percentage (3.85%) disagreed, indicating a strong preference for personalized teacher feedback. This reinforces the enduring value of human interaction in education, with AI tools functioning as supplements, not replacements.

Finally, the majority (76.92%) viewed AI feedback as motivating for English language improvement. Over half (57.69%) agreed, and nearly a fifth (19.23%) strongly agreed. A small group (11.54%) remained neutral, possibly due to limited experience with AI tools. Another small group (11.54%) disagreed, potentially favoring other motivational methods. Overall, the findings suggest a generally positive view of AI as a motivational tool, but further research is needed to understand diverse learner responses.

The findings presented in Figures 1 to 8 provide insightful data on respondents' attitudes towards various feedback mechanisms in language learning. However, the study has several limitations that warrant discussion. Firstly, the respondent pool's size and representativeness of the broader population are not detailed, which could skew results if participants share similar educational backgrounds or cultural contexts. Additionally, the high agreement percentages in Figures 1 and 2 might be influenced by response bias, where respondents feel compelled to report positive attitudes due to social desirability or perceived expectations from the educational environment. The significant proportion of neutral responses, especially in Figures 3, 4, and 5, indicates a lack of decisive opinion, possibly stemming from insufficient understanding or limited exposure to AI language assistants. Moreover, the study's quantitative nature lacks depth regarding the reasons behind respondents' attitudes, which qualitative insights could address.

Figure 5 reveals a bimodal distribution of preferences regarding increased AI-assisted feedback, with 34.62% of respondents remaining neutral and 26.92% agreeing. This suggests ambivalence or uncertainty about the efficacy of AI tools, potentially due to a lack of familiarity. Conversely, 19.23% strongly agree, indicating a significant minority is highly receptive to AI feedback, while another 19.23% disagree, reflecting scepticisms or satisfaction with existing feedback mechanisms. In Figure 6, a robust preference for teacher-led feedback is evident, with 61.54% strongly agreeing and 34.62% agreeing. This underscores the high value placed on personalized, human interaction in the learning process, with only a small minority (3.85%) preferring otherwise, possibly due to past negative experiences or a desire for more autonomous learning environments. Figure 7 shows that 76.92% of respondents affirm the motivational impact of AI feedback, with more than half agreeing (57.69%) and a significant minority strongly agreeing (19.23%). However, the neutral (11.54%) and disagreeing (11.54%) respondents highlight the need for understanding varied experiences with AI feedback. Figure 8 similarly indicates that 11.54% of respondents remain neutral or disagree about AI's impact on improving writing skills, reflecting scepticism or a preference for human interaction or self-assessment.

To mitigate these limitations and enhance the findings, future research should consider several approaches. Including a more diverse and larger sample would improve the generalizability of the results, capturing perspectives from different educational institutions, age groups, and cultural backgrounds. Longitudinal studies could provide insights into how attitudes towards feedback mechanisms evolve over time, particularly regarding the long-term efficacy and acceptance of AI language assistants. A mixed-methods approach, incorporating qualitative methods such as interviews or focus groups alongside quantitative surveys, would offer a more comprehensive understanding of the respondents' perspectives, uncovering nuanced reasons behind neutrality or scepticism towards certain feedback types. Experimental studies comparing the effectiveness of traditional corrective feedback, immediate feedback, and AI-driven feedback on actual language proficiency improvements would yield more objective data on their relative benefits. Given the mixed responses towards AI language assistants, further research should investigate the specific features and capabilities of AI tools that enhance or hinder their effectiveness, with user experience studies identifying areas for technological improvement and better alignment with learners' needs. Additionally, exploring factors influencing trust in AI systems, such as transparency of AI algorithms, user education on AI functionalities, and integrating human oversight in AI-generated feedback, could address

neutrality and scepticism. By addressing these limitations and pursuing these research avenues, future studies can build a more robust understanding of the efficacy and acceptance of various feedback mechanisms in language learning, ultimately informing more effective educational practices.

This research study provides valuable insights into the efficacy of AI-mediated corrective feedback compared to traditional teacher-led feedback, particularly in the context of English as a Foreign Language (EFL) learners. The study's dual-faceted methodology, which merges objective written performance assessments with subjective learner feedback, allows for a comprehensive examination of the pedagogical impact of AI tools like Grammarly. The implications of these findings can be discussed across several dimensions: learner perceptions, pedagogical integration, and future directions for AI-assisted learning.

The data reveal a clear preference for traditional corrective feedback from teachers, with 88.46% of participants acknowledging its effectiveness, and a significant 61.54% expressing a strong preference for teacher-led feedback during written tasks. This strong endorsement underscores the importance of personalized, human feedback in language acquisition. The human element, particularly the immediacy, nuance, and depth of feedback provided by teachers, seems to resonate deeply with students, suggesting that trust and perceived pedagogical value are central to effective corrective feedback.

However, the positive reception towards AI-assisted feedback is notable, with 73.08% of learners recognizing the potential of tools like Grammarly to enhance their written English skills. The fact that a considerable majority (76.92%) also reported that AI feedback motivates them to improve their language skills speaks to the complementary role AI can play in language learning. The motivational factor, in particular, suggests that AI tools have the potential to engage learners in a manner that traditional methods might not always achieve. This aligns with contemporary educational theories that emphasize the importance of learner autonomy and engagement in improving learning outcomes (Nadif & Benattabou, 2021, Nadif & Fayzullaevna, 2024).

While traditional feedback is clearly valued, the study suggests that AI-enhanced corrective feedback can serve as a complementary tool rather than a replacement for human instructors. The data indicates that a significant portion of learners are open to increased AI-assisted feedback in the future, though a large proportion (34.62%) remains neutral. This neutrality may

reflect unfamiliarity with AI tools or a lack of confidence in their ability to provide nuanced feedback, particularly on complex language aspects such as style and tone.

The relatively high level of trust placed in AI-generated feedback, with 46.15% of participants indicating trust to varying degrees, demonstrates that AI tools have garnered some legitimacy in the educational sphere. Nonetheless, the fact that the largest proportion of respondents (38.46%) remain neutral on this matter suggests a need for further refinement of these technologies to improve learner trust and satisfaction. AI tools need to evolve in terms of providing more tailored, context-specific feedback that aligns with individual learner needs, particularly for those at different proficiency levels.

One critical implication of this study is the need for a balanced approach to corrective feedback. While AI feedback offers immediacy and convenience, the data clearly indicates that learners still heavily rely on and trust the personalized guidance of their teachers. Thus, future research should explore hybrid models that integrate AI feedback with human mediation, ensuring that the strengths of both approaches are leveraged. Such integration could help reduce the cognitive overload associated with feedback processing, as learners receive automated and expert insights to refine their language skills.

Furthermore, the skepticism expressed by some respondents (11.54% disagreeing or strongly disagreeing) regarding AI feedback's effectiveness highlights the importance of developing AI systems that cater to diverse learning styles and preferences. Some students may prefer a more interactive and dynamic form of feedback, which AI tools are not yet fully capable of providing. Therefore, educational institutions and developers of AI-based language learning tools should prioritize creating adaptive AI systems that can better mimic the conversational and explanatory functions of human teachers.

In addition, further studies should investigate the long-term impact of AI-enhanced feedback on language proficiency, particularly across different learner demographics and proficiency levels. The current study's focus on learners with varying linguistic competencies provides a foundation; therefore, future research could explore whether the efficacy of AI tools varies significantly between novice and advanced learners.

Conclusion

This study highlights both the potential and limitations of AI-assisted corrective feedback in the context of EFL learning. While learners exhibit a strong preference for traditional feedback, AI tools like Grammarly are increasingly viewed as valuable supplements that can motivate and enhance the language learning process. For optimal results, educational practices should aim to integrate AI feedback in ways that complement human instruction, ensuring that learners benefit from the immediacy and objectivity of AI tools without losing the personalized, contextual insights provided by teachers. Further research into the nuanced impacts of AI feedback on learner engagement and proficiency is necessary to inform the development of more effective, adaptive learning environments. The implementation of AI feedback in educational settings presents several potential challenges and barriers that must be addressed to ensure its effective integration. One significant challenge is the potential lack of trust in AI tools, as many students and educators may be skeptical about the accuracy and reliability of AI-generated feedback compared to traditional teacher-led methods. This skepticism could be compounded by concerns over the impersonal nature of AI feedback, which may lack the individualized attention that human instructors provide. Additionally, there may be resistance due to the technological gap, with some students and teachers having limited familiarity with AI tools or insufficient digital literacy to effectively engage with them. Another barrier is the need for AI systems to be adaptive and context-sensitive, capable of providing feedback tailored to diverse learning styles and proficiency levels, which is currently a limitation of many existing tools. Furthermore, the integration of AI feedback into traditional classroom settings requires a careful balance, as educators must ensure that AI tools complement, rather than replace, human interaction, which remains vital for fostering motivation and addressing complex learning needs. These challenges highlight the importance of ongoing research, technological advancements, and professional development to overcome these barriers and optimize the use of AI feedback in language learning.

The findings of this study have significant implications for policy development in language education, particularly in integrating emerging technologies like AI feedback into existing pedagogical frameworks. Policymakers must recognize the value of personalized, teacher-led feedback, as it remains highly regarded by students, and ensure that AI tools are seen as complementary rather than replacements. It is essential to establish policies that support the integration of AI in language education, while also safeguarding the human element that is central to effective learning. Furthermore, policies should prioritize professional development

for educators, enabling them to effectively use AI tools while maintaining pedagogical integrity. In light of students' varying levels of trust in AI-generated feedback, policies should also focus on developing transparent and user-friendly AI systems, ensuring that these tools are adaptable to diverse learning needs and proficiency levels. Finally, educational frameworks should emphasize a balanced, hybrid approach to feedback, where AI can assist in providing immediate, objective feedback, while human educators continue to offer the individualized and motivational guidance that fosters deeper engagement and language acquisition.

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