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EFL LEARNERS' VIEWS ON AI FEEDBACK TOOLS: ASSESSING GRAMMAR ACCURACY AND LEARNING IMPACT

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Abstract: This study explores English as a Foreign Language (EFL) learners' perceptions of grammar accuracy and the impact of AI-driven feedback tools on their self-assessment and improvement. Utilizing a quantitative approach, data were collected from 54 EFL students majoring in English Language Teaching at Universitas Pancasakti Tegal through quantitative surveys. It consisted of four aspects with the total of 14 questions to explore the students' demographic information, perceived accuracy of AI feedback, the practical utility of AI feedback, overall satisfaction with AI feedback compared to traditional methods, and other detailed insights on the advantages and disadvantages of AI feedback The findings indicate that a significant majority of participants perceive AI feedback as accurate (57.4% finding it accurate; 29.6% very accurate), useful (53.7% rating it helpful), and satisfying (66.7% satisfied). Furthermore, learners reported that AI tools effectively identify missed errors and enhance their understanding of grammar rules. Despite the positive perceptions, a portion of participants still values traditional feedback, suggesting a potential benefit in a blended approach that combines AI and human interaction. This research underscores the growing importance of integrating AI-driven tools in language education, highlighting their role in enhancing learner engagement and grammar proficiency. Future studies should investigate the long-term effects of AI feedback on language learning outcomes and explore specific features that maximize its effectiveness.
Keywords: *EFL learners; grammar accuracy; AI feedback tools; self-assessment; language learning.*

INTRODUCTION

Understanding how learners perceive grammar accuracy is crucial in second language acquisition. Grammar is often viewed as a fundamental aspect of language skills and significantly impacts how well students communicate and assess their own abilities (Ellis, 2021). Recent research has investigated various strategies to improve grammatical accuracy, including direct teaching, feedback systems, and advanced technological tools (Safar & Hossain, 2021). Historically, feedback on grammar has been provided through teacher corrections, peer evaluations, and self-revision. Studies indicate that while teacher feedback can be quite effective, it is constrained by the limited time teachers have for each student and potential inconsistencies in feedback quality (Harkins, 2023). Peer feedback is also useful but may lack accuracy or constructive value, especially in groups with diverse skill levels (Johnson & Johnson, 2020).

In recent years, the field of education has been transformed by artificial intelligence (AI). Tools driven by AI, such as grammar checkers and language learning applications, provide immediate and tailored feedback, potentially overcoming some of the limitations associated with traditional feedback methods (Hsu, 2020). These AI tools utilize natural language processing (NLP) to detect and correct grammatical errors in real-time (Shen et al., 2022). Research suggests that these AI tools can enhance grammatical accuracy by delivering prompt corrections and explanations. Nonetheless, there is increasing research focused on how students perceive and interact with AI-generated feedback. Findings indicate that while AI tools can improve grammar accuracy, students' trust in these tools and their ability to incorporate the feedback can vary (Kukulska-Hulme, 2021).

Self-assessment is a critical skill in language learning, allowing learners to evaluate their own

proficiency and identify areas for improvement (Boud & Molloy, (2019). AI tools can aid this process by offering detailed feedback and helping students monitor their progress. Comparative research on AI and human feedback reveals differences in effectiveness and student satisfaction. While AI tools provide consistency and efficiency, human feedback often offers a deeper contextual understanding and more nuanced explanations, which AI may not provide (Hegelheimer & Lee, 2020). This difference raises questions about the best way to integrate AI tools with traditional feedback methods. The use of AI-driven feedback tools in language learning presents promising opportunities for personalized instruction and enhanced learning experiences. It is important for educators to understand both the strengths and limitations of these tools to integrate them effectively into their teaching practices (Zou, 2022).

Currently, there is a lack of systematic research on how students perceive the accuracy, usefulness, and overall quality of AI-driven feedback tools. While some studies address this topic, a more in-depth exploration of students' attitudes and experiences with AI feedback is needed (Zhao, 2023). Identifying the specific contexts where AI feedback is most beneficial or limited is essential (Hegelheimer & Lee, 2020). By addressing these research gaps and exploring how to integrate AI with traditional feedback methods, educators can better support students in achieving their grammar learning objectives and developing independent language skills.

In examining the perceptions of EFL learners regarding AI feedback tools, one central research question investigates the perceived accuracy of grammar feedback generated by these AI tools. Understanding how learners assess the accuracy of AI feedback compared to traditional methods is crucial, as it can significantly influence their trust in the technology and their willingness to incorporate the feedback into their writing. Another key question focuses on the practical utility of AI feedback in enhancing learners' grammar skills. It aims to explore how students perceive the usefulness of AI tools. Additionally, the research also explored the overall satisfaction EFL learners experience with AI feedback compared to traditional feedback methods.

Grammar is a critical component in mastering a new language, serving as the foundation for effective communication and self-assessment. Ellis (2021) highlights that a strong grasp of grammar is essential for language proficiency, influencing learners' communication skills and their ability to assess their own language use. Safar & Hossain (2021) support this, noting that accurate grammar use is integral to language acquisition and learners' self-evaluation. VanPatten and Williams (2015) argue that explicit grammar instruction helps learners develop linguistic competence and engage in meaningful communication. These studies underscore the necessity of effective grammar instruction for achieving successful language acquisition.

One of the most popular ways of giving feedback is traditional feedback mechanisms, such as teacher corrections, peer reviews, and self-editing. Harkins (2023) emphasize that while teacher feedback is valuable, it is often constrained by time limitations and variability in the quality of feedback. He also futher noted that peer feedback, though useful, may lack precision and constructiveness, especially in mixed-ability groups. Furthermore, Saito and Lyster (2012) highlight that self-editing can be limited by learners' grammatical knowledge and awareness. This highlights the need for additional or alternative feedback methods to enhance grammatical accuracy.

The integration of artificial intelligence (AI) in education has introduced innovative approaches for providing feedback. AI-driven tools, including grammar checkers and language learning apps, offer immediate and personalized feedback, addressing some limitations of traditional methods (Hsu, 2020). Shen et al. (2022) describe how natural language processing (NLP) algorithms are employed by these tools to analyze and correct grammatical errors in real-time. Yoon and Polio (2017) demonstrate that AI tools can significantly enhance learners' grammatical accuracy by offering instant corrections and contextual explanations. Further research by Hsu et al. (2021) and Zheng et al. (2022) reveals that AI-driven feedback tools can improve learners' writing accuracy and fluency, providing real-time feedback that helps learners correct errors and refine their language skills. These advancements highlight the potential of AI to transform language learning environments.

Understanding how learners perceive AI-generated feedback is crucial for assessing its effectiveness. Kukulska-Hulme (2021) found that while AI tools can improve grammatical accuracy, learners' trust in these tools and their ability to effectively use the feedback vary. Kormos and Trebits (2012) also highlight that learners' attitudes towards AI feedback impact how they

incorporate this feedback into their language learning. Zhao (2023) emphasizes the need for more comprehensive studies on learners' experiences with AI feedback to better understand its effects on language acquisition. Research by Chan (2021) and Warschauer (2018) further explores how learners interact with AI tools and the factors influencing their perceptions of feedback accuracy and usefulness. These studies underscore the importance of understanding learner attitudes to optimize the integration of AI tools into language learning.

Self-assessment is a vital skill that allows learners to evaluate their proficiency and identify areas for improvement. Boud and Molloy (2019) highlight that self-assessment fosters learner autonomy and motivation. AI-driven tools can support self-assessment by providing detailed feedback and tracking learners' progress over time (Chen et al., 2024). However, Saito and Lyster (2012) note that the effectiveness of these tools in promoting accurate self-assessment and learner independence is still under investigation. Additional studies by Brown and Hudson (2002) and McMillan and Hearn (2008) emphasize the role of self-assessment in language learning and suggest that AI tools have the potential to enhance this process by providing consistent and actionable feedback.

Comparative research has explored the differences between AI-driven and human feedback. Hegelheimer and Lee (2020) found that while AI tools offer consistency and efficiency, human feedback often provides richer contextual understanding and nuanced explanations that AI may lack. Varnhagen et al. (2017) and Lyster and Saito (2010) highlight the importance of combining AI and human feedback to achieve optimal learning outcomes. Further research by Lee and Hsu (2018) and Zheng et al. (2021) explores how the integration of AI with traditional feedback methods can enhance language instruction. These studies suggest that a blended approach, incorporating both AI and human feedback, may offer the most effective solutions for grammar instruction.

METHOD

This research employs a mixed-methods to investigate how English as a Foreign Language (EFL) students perceive AI-based feedback compared to conventional feedback techniques. The approach integrates both quantitative and qualitative methods to offer a comprehensive analysis of the effectiveness and impact of AI tools in teaching grammar (Creswell & Creswell, 2017).

This study involved 54 EFL students of Universitas Pancasakti Tegal from various proficiency levels (beginner, intermediate, advanced) enrolled in grammar classes. A stratified random sampling technique will ensure representation across different proficiency levels (Cohen et al., 2018).

A structured questionnaire was designed to measure perceptions of AI feedback. It consisted of four aspects with the total of 14 questions to explore the students' demographic information, perceived accuracy of AI feedback, the practical utility of AI feedback, overall satisfaction with AI feedback compared to traditional methods, and other detailed qualitative insights on the advantages and disadvantages of AI feedback. The survey was administered online using platforms such as Google Forms and WhatsApp groups which were open for two weeks. Before the questionnaire distribution, participants were informed about the study's purposes and provided consent before participating.

The data of this study was analyzed through quantitative approaches. Descriptive statistics was used to summarize survey responses, including means, medians, and standard deviations from the distributed questionnaire (Pallant, 2020). Besides, data that were collected through open-ended questions were analyzed qualitatively.

RESULTS AND DISCUSSION

This study investigated EFL learners' perceptions of grammar accuracy, focusing on the impact of AI-driven feedback tools on learners' self-assessment and improvement. Utilizing a mixed-methods approach, the research combined quantitative surveys with qualitative interviews, providing a comprehensive analysis of the perceptions held by 54 EFL students majoring in English Language Teaching at Universitas Pancasakti Tegal.

Perceptions of grammar accuracy

The results regarding perceptions of grammar accuracy revealed several insights that are presented in the following table.

Table 1. *Statistical figures on perceptions of AI grammar corrections*

Aspect	Finding	(%)	Total Positive (%)

Accuracy of AI Corrections	Accurate	57.4	
	Very Accurate	29.6	87.0
Comparison with Traditional Feedback	AI Better	61.1	
	AI Much Better	25.9	87.0
Identification of Missed Errors	Often Identified	55.6	
	Very Often Identified	27.8	83.4
Improvement of Understanding	Agreed Improvement	55.6	
	Strongly Agreed	31.5	87.1

Accuracy of AI Corrections: A total of 57.4% of participants found the grammar corrections provided by the AI tool to be accurate, while 29.6% rated them as very accurate as shown in Table 1. This suggests a generally positive perception of the reliability of AI feedback. Learners noted that the AI's ability to provide context-aware corrections played a crucial role in this perception. Previous research indicates that contextual feedback is vital in language learning, as it helps learners make connections between their errors and the rules governing language use (Huang et al., 2020).

Comparison with Traditional Feedback: As shown in Table 1, when asked to compare the accuracy of AI-generated corrections to traditional feedback, 61.1% rated AI corrections as better, and 25.9% rated them as much better. This indicates a strong preference for AI tools among learners. The perceived superiority of AI feedback can be attributed to its efficiency in delivering real-time corrections, which is essential for language learners (Chiu & Tsai, 2020).

Identification of Missed Errors: In terms of error identification, 55.6% of students stated that the AI tool often identified grammatical errors they had missed, while 27.8% reported that it did so very often, as shown in Table 1. This highlights the tool's effectiveness in enhancing learners' awareness of their grammatical mistakes, which is crucial for developing self-assessment skills (Tseng, 2021).

Improvement of Understanding: Regarding the impact of AI feedback on understanding grammar rules, as shown in Table 1, 55.6% of participants agreed that it improved their understanding, with 31.5% strongly agreeing. This suggests that learners recognize the educational value of the feedback received. Prior studies have shown that effective feedback contributes significantly to learner understanding and retention of grammatical structures (Lee, 2017).

The positive perceptions regarding the accuracy of AI feedback (with 57.4% of respondents finding it accurate and 29.6% very accurate) indicate that learners are beginning to trust technological interventions in their language acquisition process. This aligns with prior research that suggests learners who perceive feedback as accurate are more likely to engage with it and apply it to their learning (Huang et al., 2020). The higher ratings for AI-generated corrections compared to traditional methods can be attributed to the speed and consistency of AI feedback, which provides immediate responses to errors that may be missed in conventional settings (Chiu & Tsai, 2020). This perceived accuracy could foster greater autonomy in learning, as students may rely more on AI tools to identify and correct their mistakes independently, thereby enhancing their self-regulation skills (Tseng, 2021). The correlation between AI feedback and improved self-assessment aligns with Nicol's (2020) assertion that effective feedback promotes learner agency.

Usefulness of AI feedback

The usefulness of AI feedback was assessed, revealing significant insights that are presented in the following table.

Table 2. *Statistical figures on the usefulness of AI feedback*

Aspect	Finding	(%)	Total Positive (%)
Helpfulness in Improvement	Helpful	53.7	
	Much Helpful	37.0	90.7
Understanding Grammar Concepts	Helpful	57.4	
	Much More Helpful	20.4	77.8
Utility of Explanations	Useful	63.0	
	Very Much	24.1	87.1

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	Helpful		
Assistance in Application	Agree	64.0	
	Strongly Agree	22.2	86.2

Helpfulness in Grammar Improvement: Table 2 shows that 53.7% of participants found AI feedback helpful, while 37% rated it as much helpful. This underscores the perceived practicality of AI tools in grammar learning. Effective feedback is recognized as a key component in the learning process, as it directs learners' focus to specific areas for improvement (Baker & Inventado, 2019).

Understanding Grammar Concepts: In comparing AI feedback to traditional methods, 57.4% indicated that AI feedback was helpful in understanding grammar concepts, with 20.4% stating it was much more helpful as shown in Table 2. This highlights the superior instructional value of AI feedback, as learners often struggle with abstract grammar concepts without sufficient contextual examples (Hwang & Chang, 2018).

Utility of Explanations: As shown in Table 2, regarding the explanations provided by the AI tool for understanding grammar mistakes, 63% found them useful, while 24.1% rated them as very much helpful. This indicates that learners value the contextual insights provided by AI. Providing explanations alongside corrections has been shown to enhance learners' understanding of grammatical rules (Hattie & Donoghue, 2016).

Assistance in Application: Finally, Table 2 shows that 64% of participants agreed that the AI tool assists them in applying grammar rules correctly in their writing, with 22.2% strongly agreeing. This reflects a belief that AI feedback is instrumental in practical language use. Effective application of grammar rules is critical for improving overall writing quality, as supported by studies indicating that immediate feedback enhances writing performance (Shen et al., 2020).

The responses reflecting the usefulness of AI feedback, particularly the 53.7% who found it helpful for grammar improvement, highlight the role of these tools in bridging gaps in traditional language instruction. AI tools are often designed to provide tailored feedback based on individual learner needs, making them particularly effective in addressing specific areas of difficulty (Baker & Inventado, 2019). Effective AI feedback not only corrects errors but also offers pedagogical explanations that help learners internalize grammatical rules (Hwang & Chang, 2018). This dual role of correction and instruction supports the cognitive load theory, which posits that reducing extraneous cognitive load through effective feedback can improve learning outcomes (Sweller, 2019).

Learner satisfaction: Learner satisfaction with the AI feedback tool was notably high, as presented in the following table.

Table 3. *Statistical figures on learner satisfaction with AI feedback tool*

Aspect	Finding	(%)	Total Positive (%)
Overall Satisfaction	Satisfied	66.7	
	Very Satisfied	25.9	92.6
Comparison with Traditional Feedback	Satisfied with AI	74.1	
	Very Satisfied with AI	16.7	90.8
Likelihood of Continued Use	Likely to Continue	59.3	
	Very Likely to Continue	25.9	85.2
Engagement in Learning	Agree	63.0	
	Strongly Agree	16.7	79.7

Overall Satisfaction: Table 3 shows that 66.7% of participants reported being satisfied with the AI feedback tool, while 25.9% were very satisfied. This indicates a strong acceptance of AI tools among EFL learners. High satisfaction levels often correlate with improved learning outcomes, as learners who are satisfied with feedback mechanisms are more likely to engage with the learning process (Nicol, 2020).

Comparison with Traditional Feedback: When comparing satisfaction with AI feedback to traditional methods, 74.1% expressed satisfaction with AI, and 16.7% were very satisfied, as shown Table 3. This suggests that many learners prefer AI tools over traditional feedback, potentially due to the personalized nature of AI interactions (Huang et al., 2020).

Likelihood of Continued Use: Regarding future use, 59.3% of respondents indicated they are likely to continue using the AI feedback tool for grammar practice, with 25.9% stating they are very likely as shown Table 3. This reflects a

positive inclination towards the sustained use of AI tools in their learning process, indicating that learners view AI feedback as a valuable resource for ongoing improvement (Tseng, 2021).

Engagement in Learning: Table 3 shows that, in terms of engagement, 63% agreed that AI feedback makes grammar learning more engaging compared to traditional methods, with 16.7% strongly agreeing. This supports the idea that AI tools foster a more interactive learning environment, enhancing motivation (Dörnyei, 2021).

The high levels of learner satisfaction—66.7% satisfied and 25.9% very satisfied—suggest that AI tools meet the learners' needs for effective feedback. This satisfaction is crucial, as studies have shown that learner satisfaction correlates positively with motivation and engagement, leading to improved academic performance (Dörnyei, 2021). The strong preference for AI feedback over traditional methods, with 74.1% expressing satisfaction, further emphasizes the need for educators to consider incorporating AI tools into their instructional practices. The engagement aspect, with 63% of respondents agreeing that AI feedback makes learning more engaging, reflects the potential for these tools to transform the learning environment. By providing interactive and immediate responses, AI tools can create a more dynamic and responsive educational setting, which is particularly important in language learning contexts where engagement is often a barrier to progress (Lee, 2017).

Comparative feedback effectiveness

Finally, the effectiveness of AI feedback compared to traditional feedback was evaluated. The results are presented in the following table.

Table 4. *Statistical figures on comparative feedback effectiveness*

Aspect	Finding	(%)	Total Positive (%)
Effectiveness of AI Feedback	Effective	48.1	
	Very Effective	5.6	53.7
	Not Effective	44.4	
Preference for Feedback Method	Prefer AI	40.7	
	Prefer Traditional	33.3	
	Much Stronger Preference for Traditional	13.0	53.3

Effectiveness of AI Feedback: Regarding the effectiveness of AI feedback compared to feedback from teachers, 48.1% of participants rated AI feedback as effective, while 5.6% rated it as very effective as shown in Table 4. However, 44.4% chose not effective, indicating some variance in perceptions. This suggests that while AI feedback is well-received, it may not entirely replace the nuanced understanding provided by human feedback.

Preference for Feedback Method: Table 4 shows that when asked about their preference for AI versus traditional feedback, 40.7% preferred AI, while 33.3% preferred traditional feedback. Notably, 13% indicated a much stronger preference for traditional feedback, suggesting that while AI tools are valued, there remains a place for conventional methods in grammar learning.

The mixed responses regarding the comparative effectiveness of AI feedback versus traditional feedback highlight the complexity of learner preferences. While 48.1% found AI feedback effective, a significant portion—44.4%—did not view it as effective as teacher feedback. This suggests that, despite the advantages of AI tools, many learners still value the nuanced understanding and interpersonal interaction that human feedback provides. This finding points to the necessity of a blended approach to feedback in language learning. Integrating AI feedback with traditional methods may provide a comprehensive learning experience that leverages the strengths of both modalities. Research has indicated that a hybrid model can facilitate better learning outcomes, as it allows for personalized, immediate corrections while also providing the emotional and motivational support that comes from human interaction (Graham, 2013).

The findings of this study suggest that EFL educators should consider integrating AI-driven feedback tools into their teaching methodologies. Given that a significant proportion of participants (61.1%) rated AI corrections as better than traditional feedback, incorporating these tools can enhance the learning experience by providing timely, context-aware corrections (Chiu & Tsai, 2020). Such integration can allow students to

engage with immediate feedback that addresses their specific grammatical errors, promoting greater learner autonomy (Tseng, 2021). This approach aligns with previous research indicating that learners who perceive feedback as accurate are more likely to engage with it and apply it to their learning (Huang et al., 2020). Consequently, training programs for teachers should emphasize the effective use of AI tools, ensuring that they complement traditional methods to provide a more robust educational framework (Baker & Inventado, 2019).

Moreover, the study indicates that the utility of AI feedback in improving understanding of grammar concepts is substantial, with 57.4% of participants finding it helpful (Hwang & Chang, 2018). Therefore, educational institutions should invest in professional development for teachers focused on AI tool integration. By providing teachers with the skills needed to utilize AI feedback alongside traditional instructional methods, institutions can enhance the overall learning experience (Graham, 2013). Effective AI feedback not only corrects errors but also provides explanations that help learners internalize grammatical rules, as supported by studies showing that feedback that includes contextual insights significantly improves understanding (Hattie & Donoghue, 2016; Lee, 2017).

The high levels of learner satisfaction observed, with 66.7% expressing satisfaction with AI feedback tools, indicate a clear preference for these technologies (Dörnyei, 2021). This suggests the need for educators to foster a learning environment that encourages sustained engagement with AI-driven resources. By promoting the use of these tools for grammar practice, educators can enhance students' self-assessment skills and overall motivation (Shen et al., 2020). Furthermore, educational policies should advocate for incorporating AI feedback mechanisms into language learning programs, ensuring that both educators and learners receive the support necessary to effectively navigate this technological landscape (Nicol, 2020; Tseng, 2021).

Lastly, future research should explore the long-term impacts of AI feedback on language acquisition and grammatical proficiency. Longitudinal studies can provide insights into how the sustained use of AI tools influences learner outcomes over time (Shen et al., 2020). Additionally, investigating which specific features of AI feedback (e.g., contextual explanations, error identification) are most beneficial can help developers create more effective educational technologies (Hattie & Donoghue, 2016). Expanding research to include diverse learner populations across different cultural contexts will also enhance the understanding of AI feedback's global applicability and acceptance (Lee, 2017; Huang et al., 2020). Such studies can identify variations in feedback effectiveness and preferences based on cultural and educational backgrounds, leading to more personalized learning experiences (Graham, 2013; Dörnyei, 2021).

CONCLUSION

This study examined EFL learners' perceptions of grammar accuracy and the impact of AI-driven feedback tools on their self-assessment and improvement. The results suggest that AI feedback tools not only offer immediate corrections but also promote a more engaging and autonomous learning experience. High levels of satisfaction with these tools indicate that learners are increasingly inclined to incorporate technology into their study practices, potentially leading to improved writing skills and greater grammatical accuracy. However, this study has some limitations. The sample size was relatively small, which may affect the generalizability of the findings. Additionally, the research relied solely on questionnaire responses, without interviews or other data collection methods that could provide deeper insights. Furthermore, participants were limited to EFL major students, which may not represent the broader learner population.

Future research should explore the long-term effects of AI feedback on language proficiency and investigate which specific features learners find most beneficial. As technology evolves, it is essential for educators to adapt their practices to leverage the potential of AI tools in language education, ensuring they enhance the learning experience and contribute positively to learner outcomes. In summary, integrating AI-driven feedback tools represents a promising avenue for improving grammar instruction and learner engagement in EFL contexts, making it a crucial focus for future pedagogical strategies.

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