



Students' Perceptions of Human versus Artificial Intelligence Feedback in Academic Writing: A Case Study of Undergraduate Students at Ibn Tofail University

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Abstract: The integration of Artificial Intelligence (AI) into education has created new opportunities for enhancing language learning, particularly in the domain of corrective feedback. This case study explores how learners perceive AI-generated corrections in comparison with peer and teacher-provided feedback. Drawing on a constructivist framework, which views learning as the active construction of knowledge, and a sociocultural perspective, which emphasizes mediation and interaction within the Zone of Proximal Development (ZPD), the research seeks to explore learners' preferences and perceptions regarding multi-sourced feedback on their writing pieces. The study involved collecting writing samples from a group of 42 learners. These are first-year students from the English department at Ibn Tofail University. A qualitative research method was adopted as the data were collected through semi-structured group interviews. Students engaged in three stages: first, correcting their samples and those of their peers based on a checklist; second, reviewing the teacher's corrections; and third, examining revisions generated by ChatGPT. Preferences were recorded and analyzed. The findings were then analyzed thematically, detecting certain patterns regarding students' preferences. Findings indicated that the majority favored teacher corrections, valuing their clarity, simplicity, and contextual accuracy, particularly the way they highlighted concrete alternatives for improvement. In contrast, only a few students preferred AI-generated corrections, appreciating their immediacy and accessibility. These outcomes suggest that while AI can serve as a supportive tool in language classrooms, teacher feedback remains more trusted and pedagogically effective, showing how AI tools can be positioned as supplementary rather than substitutive. This study contributes to the ongoing debate on balancing technological innovation with the irreplaceable role of teachers in language education.

Keywords: *artificial intelligence, corrective feedback, constructivism, sociocultural theory, language education*

1 Introduction

Artificial Intelligence (AI) is increasingly recognized as a transformative force in English as a Foreign Language (EFL) education. Technologies such as natural language processing, machine learning, adaptive learning systems, and speech recognition are reshaping language learning by enhancing effectiveness, personalization, and accessibility (Lai & Chen, 2023; Vera, 2023). These tools provide interactive feedback, adaptive learning pathways, and immersive experiences, thereby creating conditions for more individualized instruction.

Research highlights the potential of AI to foster personalized learning, adaptive feedback, and interactive environments that promote effective language acquisition (Kundu & Bej, 2024; Hsu et al., 2023). AI can contribute to educational equity by offering scalable and data-driven learning opportunities, particularly in resource-constrained contexts (Neumann et al., 2023).

Specific AI-driven innovations include virtual assistants and chatbots that enable real-time conversational practice, speech recognition technologies that support pronunciation and fluency development and intelligent writing tools that provide automated grammar and style feedback (Divekar et al., 2022; Vera, 2023). Similarly, AI-powered learning platforms integrate adaptive algorithms and gamification to tailor instruction and sustain learner engagement (Vera, 2023). These applications align with contemporary language learning theories, which underscores the importance of teachers' technological readiness and pedagogical competence for successful classroom integration (Divekar et al., 2022).

Overall, AI in EFL education offers learners immediate feedback, authentic practice opportunities, and highly personalized learning trajectories. By facilitating interactive and adaptive experiences, AI technologies hold considerable potential to enrich traditional classroom practices and foster more engaging and effective language acquisition (Lai & Chen, 2023; Vera, 2023). However, despite these benefits, the integration of AI remains uneven across educational contexts (Tai, 2022). Furthermore, a comprehensive review of previous investigations revealed that limited attention has been devoted to unravelling both the advantages and disadvantages of employing AI in English language classes (Dai & Liu, 2024). These gaps highlight the need for more context-specific and balanced inquiries.

1.2. Research Objectives and Questions

This study, which is based on Constructivism and Social Constructivism theories, views feedback as a mediated learning process in which students actively create knowledge through guidance and interaction. According to this framework, AI-generated feedback is seen as a possible learning tool that offers quick answers but lacks the social interaction scaffolding necessary for more in-depth comprehension. As a result, the study pursued two primary research goals: first, to investigate how undergraduate students perceive AI-generated feedback in relation to feedback from peers and teachers. Second, to investigate learners' preferences regarding multiple sources of feedback in academic writing. In light of these goals, the main research question posed was: in an academic writing setting, how do undergraduate EFL students view and assess generated corrective feedback in comparison to human-provided feedback? Because of this focus, this study was able to situate AI feedback within established learning theories while critically assessing its pedagogical value.

2. Literature Review

2.1. Human Feedback Vs AI-Feedback

Writing competence is essential for both professional and academic success. However, many students find writing difficult, particularly second language (SL) and foreign language (FL) learners, as writing in a language they are unfamiliar with increases cognitive load and working memory demands (Abu-Rabia, 2003; Johnson, 2020). As a result, SL and FL learners,

who typically process more limited vocabulary than L1 learners, may have trouble with deep-level aspects of tasks like organizing and planning their writing, establishing coherence, in addition to several surface aspects like grammar and spelling (Hinkel, 2011; Silva, 1993).

Previous research confirmed the critical role of feedback in supporting writing development (e.g., Graham & Harris, 2018; Graham et al., 2015; Huisman et al., 2019) for L2 as well as for FL learners (e.g., Kang & Han, 2015; Lim & Renandya, 2020; Liu & Brown, 2015). There is a substantial difference between L1 and L2 learners, as the language of instruction for L1 is normally spoken locally, whereas in FL contexts the language is learned in a non-native environment with limited exposure outside the classroom. Hence, learners may develop different levels of linguistic fluency and encounter different instructional priorities, which can lead to varying feedback needs and expectations.

Feedback is defined as information provided by an agent that could be either an instructor or a peer, in order to reduce discrepancies between current and desired performance, ideally within an interactive, co-constructive meaning-making process. Graham (2018) defines feedback “as information provided by another person, group of people, agency, machine, self, or experience that allows a writer, one learning to write, or a writing teacher/mentor to compare some aspect of performance to an expected, desired, or idealized performance” (pp. 145–146).

Earlier research suggests that the source of feedback matters, with human feedback being teachers, peers, or self-assessment, generally being more effective than algorithm-based feedback for adolescents (Goldberg et al., 2003). However, findings comparing instructor and peer feedback are mixed; While some suggest instructor feedback is somewhat more effective, others believe that peer feedback is also highly useful. According to Scherer (2024), there are several studies that investigated the role of feedback as well as the source of it (Biber et al., 2011; Huisman et al., 2019; Thirakunkovit & Chamcharatsri, 2019). They mostly suggest that instructor feedback is somewhat more effective than peer feedback, but that peer feedback is still very useful in supporting writing (Graham et al., 2015).

Regarding AI-generated feedback in higher education, Urzúa (2025) conducted a systematic review, following PRISMA guidelines, and employed an exhaustive search technique across Scopus, Eric, and Web of Science (WoS). His work concluded that feedback via generative chat strongly improves structure organization, grammatical conventions, and fluency, and promotes metacognitive processes such as reflection and self-regulation in students. Hence, generative chat feedback is seen as a significant innovation that can enhance students’ accuracy, autonomy, and motivation in writing, but its effectiveness depends on several factors such as system quality, teacher skills, and user training.

On the other hand, Urzúa found that while AI feedback is detailed and comprehensive, current configurations often prioritize technical correction by focusing on forms over meaningful interaction and sometimes lack affective or emotional feedback. He argues that some of his findings suggest that students need support in developing critical thinking skills to evaluate the information received from AI, as there is an indicator of a risk of superficial learning and lower levels of critical self-monitoring.

In a similar vein, Escalante (2023) found that students who got only shared GPT feedback improved in grammar, mechanics, tone, and overall quality, but less so in organization and not at all in content. However, those who received combined feedback improved across all areas, including organization and content. Even so, students liked using ChatGPT because it facilitated grammar correction and vocabulary building. In spite of that, students did not appreciate its inability to address content-related issues or provide constant professional feedback. According to Storch (2018), studies on Writing Corrective Feedback (WCF) are often criticized for being decontextualized, neglecting individual factors like goals and beliefs, and contextual factors such as norms and teacher-learner relationships.

Sociocultural theory emphasizes that material tools such as computers and software-mediated tools shape human actions, including the provision and processing of WCF. Research on computer-delivered automated feedback is surprisingly scarce and offers a focus on the product (accuracy scores of drafts) rather than the process of revision and engagement with feedback. Storch (2018) argues that it is crucial to conduct well-designed studies on various WCF tools to examine their impact on the nature of the feedback provided, how learners engage with it, and ultimate L2 learning outcomes. This ties strongly with the gap being investigated in this paper.

2.2.Theoretical Background

Recent years have witnessed an extravagant explosion of empirical evidence addressing how children develop linguistic representations, language evolution, and adult language processing. Technological development offered techniques and breakthroughs to ensure these achievements. Hence, there are several theories that account for these investigations and involvement. In this study, particular attention is given to Constructivist Theory and Sociocultural Theory.

2.2.1. Constructivism Theory

Constructivism is one of the major perspectives on language acquisition that stands out for its ability to blend linguistic, psychological, and sociological perspectives into language studies, thereby emphasizing the importance of social interactions and the discovery, or construction of meaning (Brown, 2014). The major principle that constructivism endorses is that the knowledge of the external world is almost certainly not identical to what is actually out there. Hence, it is mainly a sort of representation of the external world that we have made ourselves. Rowland et al. (2025) argue that constructivism can actually be evident in the creation of theories and models accounting for language acquisition. However, constructivism is not a new emerging theory. Some of the prominent names of this theory are Lev Vygotsky and Jean Piaget.

The literature identifies two branches of constructivism: Cognitive and social. Cognitive constructivism's premises are "rooted in Piaget's seminal work in the middle of the twentieth century" (Brown, 2014, p. 12). According to Kaufman (2004), constructivists define learning as a developmental process that involves change, self-generation, and construction, each building on prior learning experiences. Consequently, this approach suggests that students must personally engage with and transform complex information to truly internalize it, advocating for a more active role in their learning. Therefore, in a constructivist learning environment, students learn best when they engage in hands-on, project-based, or problem-solving activities relevant to their lives. This entails that the teacher's role involves facilitating authentic and meaningful learning experiences, guiding students in constructing meaning, as well as monitoring and evaluating learners' progress.

One of the major beliefs of the constructive framework is that knowledge is constructed and built, not absorbed. "Learners must individually discover and transform complex information if they are to make it their own, [suggesting] a more active role for students in their own learning than is typical in many classrooms" (Slavin, 2003, pp. 257-258). In other words, the availability of both linguistic input and social interaction is of high importance in building and constructing a new linguistic system.

Unlike the traditional stances of language acquisition that grant credit only to one and sole factor as a vital pillar for acquiring a language, constructivism sees the latter not just as a mere fact of environmental trigger to innate knowledge or sufficient associations of processes. It sees acquisition as linguistic representations that are created through processes that assimilate new information from the input into existing knowledge and assimilate the existing knowledge in response to new input.

Along with the rigorous emphasis that cognitive constructivism places on building knowledge through schemes and representations of reality, social constructivism stresses that both social interaction and cooperative learning are necessary in order to build cognitive and emotional images of reality. Vygotsky argued that “children's thinking and meaning-making are socially constructed and emerge out of their social interactions with their environment” (Kaufman, 2004, p. 304)

2.2.2. Social Constructivism Theory

Social constructivism builds on a foundation that emphasizes that knowledge is co-constructed through social interaction, dialogue, and shared activity. Vygotsky (1978) argued that language functions as a primary psychological tool through which meaning is negotiated and internalized. Learning operates both intra-psychologically within the individual and inter-psychologically through collaboration with others, leading to the development of internal dialogue that can later be transferred to new contexts (Marsh & Ketterer, 2005; Vygotsky, 1978).

A central concept in Vygotskian theory is the Zone of Proximal Development (ZPD), defined as the distance between a learner's actual level of development and their potential development when supported by a More Knowledgeable Other (MKO). Within the ZPD, learning is facilitated through scaffolding, where guidance is gradually withdrawn as competence increases, allowing genuinely new knowledge to emerge through participation in meaningful tasks (Vygotsky, 1978; Kao, 2010). These processes highlight the reciprocal relationship between language and cognition, particularly in second language learning, where development is driven by purposeful social interaction.

In second language education, constructivist and sociocultural perspectives emphasize learner autonomy, authentic communication, and extended opportunities for meaningful language use. Teachers adopt a facilitative role by creating motivating, student-centered environments that encourage collaboration, cultural awareness, and active engagement. Research suggests that socially mediated exposure is crucial for linguistic development, reinforcing the view of language learning as a social practice rather than an individual accumulation of forms (Can, 2009).

From a broader sociocultural theory perspective, human cognition is viewed as a mediated process shaped by cultural tools, activities, and historically situated contexts such as family life, peer interaction, and schooling. Although biological capacity is a prerequisite for higher mental functioning, advanced cognitive processes emerge through mediated social activity, with language serving as the most powerful symbolic tool. Vygotsky's concept of regulation explains development as a progression from object regulation to other-regulation and ultimately self-regulation, which represents the goal of proficient language use and autonomous learning (Vygotsky, 1978; Kao, 2010).

Finally, language enables learners to transcend immediate contexts through private speech, which supports planning, task execution, and self-evaluation. Through the internalization of social interaction, learners gain voluntary control over cognition and behavior, underscoring the central role of language as both a communicative and cognitive tool in learning and development.

2.2.3. Constructivism and Feedback

According to SCT, for the learner's development to occur, assistance must be within the ZPD, meaning must be dynamic and responsive to the novice's evolving needs, which is often described using scaffolding. Other critical constructs that foster this development are mediated tools that shape actions, and the notion of activity, developed into the objective of examining goals, context, and rules.

Much research on effective WCF compares direct versus indirect correction methods to determine the most effective one for improving linguistic accuracy, but findings are mixed. For instance, there were no significant changes between the two forms of WCF and classroom-based in a study by Chandler (2003) where students got direct and indirect feedback on consecutive pieces of writing, whereas the study by Van Beuningen, De Jong & Kuiken (2008, 2012) in a well-planned experimental investigation with control and treatment groups discovered that direct WCF was better than indirect one. In contrast to these two studies, which provided feedback on a variety of errors, Bitchener et al.'s (2005) study only provided feedback on errors in the use of three structures. The researchers discovered that the effectiveness of the type of WCF depended on the grammatical structure corrected.

3. Methodology

The study adopts a qualitative case study research design, which is especially appropriate for thoroughly examining students' preferences and perceptions within a particular educational setting. The research enables a nuanced understanding of how learners experience feedback from various sources—peer, teacher, and AI-generated—by concentrating on a limited group of participants rather than striving for generalization. The study was conducted at Ibn Tofail University, allowing for an in-depth exploration of feedback practices within a clearly defined institutional context. Because the case study framework places a strong emphasis on meaning-making, interaction, and context-specific learning processes, it aligns closely with constructivist and sociocultural theoretical orientations guiding the research.

A total of 42 first-year undergraduate students from the English department at Ibn Tofail University participated in the study. The sample was selected based on relevance to the research focus and participant availability at the time of data collection, as these students were actively engaged in academic writing tasks requiring feedback. The sample size was determined by accessibility, as these were the students available during the research period, which is consistent with qualitative case study approaches. Semi-structured group interviews were used to gather data, allowing students to express shared perspectives while still capturing individual viewpoints.

Peer and self-correction using a checklist, teacher-provided feedback, and AI-generated feedback via ChatGPT comprised the three structured stages of the feedback process. Students were able to directly compare feedback sources thanks to this staged procedure, which strengthened the credibility of their stated preferences. Data were analyzed using thematic analysis, with recurring patterns identified across interview transcripts. The coding process involved organizing responses into themes related to feedback preference, perceived usefulness, and learner engagement.

4. Findings and Discussion

The analysis of the qualitative data revealed recurring themes and shared perspectives across participants' responses. The findings indicated that students predominantly preferred teacher-provided feedback, which they described as more dependable and pedagogically grounded. Participants emphasized the teacher's ability to contextualize corrections, clarify explanations, and provide specific suggestions for improvement. One student noted that teacher feedback "explains not only what is wrong, but why it is wrong and how to improve it." Trust in the teacher's disciplinary knowledge and familiarity with students' academic needs was reflected in perceptions of teacher feedback as a form of learning support rather than mere error correction. This finding is consistent with previous research emphasizing the importance of feedback in supporting writing development (Graham & Harris, 2018; Graham et al., 2015; Huisman et al., 2019) and with research suggesting that instructor feedback may be more effective than other sources of feedback (Graham et al., 2015). It also supports Scherer's (2024) observation that structure feedback tends to be somewhat more effective than peer feedback,

while reinforcing the broader view that the source of feedback can shape learner's perceptions of its usefulness.

Students expressed mixed perceptions of AI-generated feedback. While they acknowledged its usefulness in improving mechanical accuracy, efficiency, accessibility, and immediacy, they also reported concerns regarding its brevity and perceived impersonality. In contrast, only a few students preferred AI-generated corrections, mainly valuing their immediacy and accessibility. Participants generally valued AI feedback at the word and sentence level but described feedback on organization and extended structures as confusing or insufficiently elaborated when compared to teacher feedback. As one participant stated, "ChatGPT helps with grammar, but it does not always explain ideas clearly." Some students reported that AI-generated responses lacked depth or sensitivity to their individual language challenges. These findings are broadly consistent with Urzúa's (2025) systematic review, which found that generative AI feedback can improve grammatical conventions, fluency, and aspects of writing organization, while also noting limitations related to meaningful interaction and affective support. The participants' greater appreciation of AI for word and sentence level correction similarly corresponds with Escalante's (2023) finding that students receiving GPT feedback showed improvements in grammar, mechanics, tone, and overall writing quality, but comparatively weaker improvement in organization. At the same time, the students' concerns about the limited depth and impersonality of AI feedback echo Urzúa's (2025) observation that AI-generated feedback may prioritize technical correction over meaningful interaction.

Themes related to interaction and clarity also emerged from the data. Feedback mediated by a teacher allowed opportunities for clarification, negotiation of meaning, and follow-up questions, which students associated with higher levels of engagement. One participant explained that "with the teacher, I can ask questions and understand the feedback better." These findings suggest that relational and communicative dimensions of feedback contribute to its perceived effectiveness alongside accuracy and efficiency. Within technology-enhanced learning environments, the teacher's role in writing instruction remains central, particularly in supporting comprehension, engagement, and learner confidence. This finding resonates with Storch's (2018) argument that Writing Corrective Feedback should be examined not only in terms of the corrections provided but also in terms of how learners engage with feedback and the contextual and interpersonal factors surrounding it. It also corresponds with Urzúa's (2025) finding that, despite the potential of generative AI to support writing development, its effectiveness depends partially on teacher skills and appropriate user support.

The results support the notion that learning is a socially mediated process rather than a strictly technical one when interpreted through constructivist and sociocultural lenses. Within the learner's zone of proximal development, teacher feedback serves as a kind of scaffolding that allows students to internalize information through guided interaction. Students' preference for teacher feedback is a reflection of their need for dialogue, mediation, ensure meaning-making, which are all essential components of sociocultural theory. Although helpful, AI feedback is outside the fundamental mechanisms highlighted by these theoretical frameworks because it lacks the interactive components required to fully support knowledge construction. This interpretation is also supported by Storch's (2018) call for research to examine how learners engage with different WCF tools rather than focusing exclusively on the accuracy of revised drafts. In this respect, the present findings extend the concerns raised in the literature about computer-delivered automated feedback, particularly the tendency to emphasize the final written product rather than the process of revision and learner's engagement with the feedback. Moreover, the contact between students' positive perceptions of AI for technical correction and their preference for teacher feedback for explanation, interaction, and meaning making is consistent with Urzúa's (2025) conclusion that generative AI can enhance accuracy and

autonomy while still present limitations in interaction, critical engagement, and self-monitoring.

Recommendations

In terms of pedagogy, the study recommends integrating AI as an additional tool rather than as a substitute for teacher feedback. AI can increase productivity and offer prompt assistance, but it cannot replace a human teacher's contextual awareness, emotional intelligence, and pedagogical judgment. In order to optimize learning outcomes, effective feedback practices should integrate technology with teacher mediation. Teachers are still essential for deciphering mistakes, tailoring instruction, and encouraging deep engagement. With this well-rounded strategy, teachers can leverage AI's advantages while maintaining the essential human aspect of teaching and learning languages.

5. Limitations

Despite its contributions, this study has several limitations that should be acknowledged. First, the study's findings can't be applied to other educational contexts or proficiency levels because it used a relatively small and context-specific sample of first-year undergraduate students from a single university. Second, the design of the qualitative case study mainly relied on self-reported perceptions obtained through group interviews, which may have been impacted by peer dynamics. Lastly, rather than focusing on long-term learning outcomes, the study concentrated on short-term responses to AI-generated feedback, leaving more for future research to investigate how prolonged exposure to feedback may affect writing development over time.

6. Conclusion

In conclusion, this study highlights the continued pedagogical value of teacher-provided feedback and academic writing despite the growing presence of artificial intelligence in educational contexts. The results show that learners have more faith in feedback that is contextualized and mediated by a human instructor, even though AI-generated feedback has benefits like immediacy and accessibility. The preference of students highlighted the significance of guided explanations, engagement, and clarity elements that are still essential for successful learning in higher education. Thus, the study supports the idea that AI tools should be carefully and strategically incorporated, acting as helpful tools rather than taking the place of teacher feedback. The study adds to the ongoing conversations about how to strike a balance between technological innovation and good pedagogical practice by highlighting the indispensable role of human mediation.

Ethical Statement

I hereby affirm that this work is entirely my own and original. It does not contain any form of plagiarism, as defined by established academic standards, and does not produce the work of others without proper attribution. The work has not been previously published or submitted for academic credit in any other context. I further confirm that it has been prepared in full compliance with applicable academic and research ethics principles, including integrity, honesty, and respect for intellectual property.

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