



The Impact of AI-Driven Technologies on the EFL Learning Process

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Abstract: The present study aimed to analyze the impact of AI-driven technologies on Kurdish students of English as a Foreign Language. For this experimental research, a quantitative methodology was used. An online questionnaire was used through Google Forms. The findings of this experiment indicated that students spend much time using various AI-driven technologies to learn English. Listening skills are the most improved skill through the AI models. This research also showed that using AI-driven technologies helps students acquire new functional vocabulary elements and reduce their previous spelling errors. Among the different AI models, Duolingo was the most used AI model for learning the English language. By extension, the research also recommends investigating the impact of AI-driven technologies on each skill obtained, but separately.

Keywords: EFL learners, Kurdish universities, AI models, language skills.

1. Introduction

Artificial Intelligence (AI henceforth) models increasingly transform the landscape of English as a Foreign Language (EFL) learning, offering innovative tools and personalized approaches to enhance understanding. These models rely on natural language processing, machine learning, and adaptive algorithms to provide tailored feedback, automate assessments, and create interactive learning experiences. From intelligent tutoring systems to AI-powered language apps, these technologies enable learners to practice speaking, listening, reading, and writing in real time while adapting to individual proficiency levels and learning styles. By analyzing vast amounts of linguistic data, AI-driven technologies can identify common errors, suggest improvements, and simulate real-world language use, making EFL learning more accessible, efficient, and engaging for students worldwide.

It is well known that people, including students, have begun to use various AI-driven technologies more than they used them before (Dash & Dash, 2007). Similarly, Kurdish students currently enrolled in English as a Foreign Language programs at various Iraqi universities also use AI-driven technologies to learn English.

Learning a language is a form of activity of the mind involving four basic skills: listening, speaking, reading and writing (Dash & Dash, 2007; Aprianto & Zaini, 2019). Learning English as a foreign language has always been one of the main concerns of Kurdish students of English as a Foreign Language, especially those enrolled in different academic programs (Ahmed, 2020a, 2020c; Alrefaee et al., 2025) in different Iraqi universities. They are very interested in improving their proficiency in

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English (Ahmed, 2020b) since it occupies an essential place in the world (Dash & Dash, 2007). Therefore, in their spare time, Kurdish students of English as a Foreign Language in Iraq choose to use online learning through AI-driven technologies such as ChatGPT, Duolingo, and others. Most of the time, they use AI models, so learning English through AI-driven technologies is presented as an interesting strategy and a new experience for students of English as a foreign language. However, the extent to which Kurdish students use different AI-driven technologies for educational purposes has not been identified. This study is essential because it is the first study conducted with Kurdish learners of English as a Foreign Language enrolled in Iraqi universities. Investigating to what extent AI models can improve their English proficiency and presenting some ideas on the appropriate use of AI-driven technologies for educational purposes is essential because it is vitally important for Kurdish EFL students studying in Iraq to develop their English language skills (Ahmed, 2020a). Language skills can be better developed using AI models provided by these platforms when used correctly.

2. Research Questions

This study is designed to answer the following research questions:

1. How much time do Kurdish English as a Foreign Language students spend using AI models?
2. What is the attitude of Kurdish English as a Foreign Language students about using AI-driven technologies as pedagogical and educational tools?
3. Which of the AI models is mainly used by Kurdish EFL students to learn the English language?
4. Which language skills are the most developed among Kurdish English as a Foreign Language learners while using AI models?

3. Literature Review

Since English is the language of technology, including the language of the Internet, it has experienced “modernized varieties” that are distinct from its “conventional varieties” (Al-Kadi & Ahmed, 2018). The English language is at the center of a linguistic revolution that has “led to the emergence of a new branch of linguistics: Internet linguistics,” which designates a person as a “digital native” who has grown up in the “digital age,” while a “digital immigrant” is a person who “acquired familiarity with digital systems in adulthood.” It can be said that in the “pre-digital age,” learning was “teacher-centred,” but now, in this digital age, learning is “self-centred” (Crystal, 2005, 2011; Prensky, 2001; Zitouni et al., 2021; Mohammed, 2023).

Integrating AI-driven technologies into English language learning has been the subject of extensive research, revealing promising outcomes and crucial considerations. Numerous studies have consistently demonstrated the potential of AI to personalize learning experiences, adapting to individual student needs and progress (e.g., Cheng, 2017; Ahmed et al., 2023; Yuan & Liu, 2025; Alrefaee & Mohammed, 2025).

AI-driven technologies such as Duolingo and ChatGPT allow students of English as a Foreign Language to develop and practice their English skills without being surrounded by their peers and without fear of making mistakes while practising (Valcea et al., 2024). A study by Yang et al. (2024) examined the use of AI-supported training, specifically the Talk AI spoken dialogue system, to improve the speaking skills of 36 Chinese engineering students learning English. The research found that the AI training significantly improved students’ overall speaking performance, including pronunciation, grammar, and usage. Students also demonstrated increased self-awareness of their speaking abilities, developed better self-evaluation skills, and were able to create targeted

improvement strategies. The study concludes that AI-supported training can effectively enhance language awareness in English language learners.

Furthermore, AI-driven technologies allow users to participate effectively in a similar authentic situation (Ahmed et al., 2024). A study by Bilgin (2024) at Tishk International University on 50 first-year students' perspectives on 21st-century skills revealed that reading, productivity, accountability, creativity, technology, and financial literacy were prioritized, and it suggested clearer implementation strategies for educational institutions. This personalization manifests in customized vocabulary practice, grammar exercises, and feedback tailored to each learner's challenges (Mansoor, 2023). For instance, Hussain, Satti and Khan (2024) explored the transformative potential of AI-powered personalized learning systems in language education, highlighting their ability to adapt instruction through adaptive natural language processing. The study discusses the benefits of increased engagement and accessibility, addresses ethical concerns and the digital divide, and evaluates existing AI platforms that foster linguistic competence. It concludes by emphasizing the need for stakeholder collaboration to ensure equitable AI deployment and to create an inclusive digital learning ecosystem.

Beyond personalization, researchers have documented significant improvements in various English language skills through AI-powered interventions. Studies have shown that AI tools can effectively enhance speaking, writing, and vocabulary acquisition (Wei-Xun & Jia-Ying, 2024; Yang, 2025). Specifically, Qassrawi et al. (2024) investigated the effectiveness of Google Assistant, an AI-based app, in enhancing EFL students' speaking performance, using a mixed-methods approach involving pre-post tests and focus group discussions. They found significant improvements in students' overall speaking skills, particularly fluency and interaction, and identified benefits such as increased engagement and self-directed learning, alongside challenges related to accessibility and technical issues.

However, implementing AI in English language learning is not without its challenges. A recurring theme in the literature is the necessity of adequate teacher training and digital literacy. Teachers must be equipped with the skills to integrate AI tools into their teaching practices effectively. Furthermore, ethical concerns regarding data privacy, security, and the potential for AI to perpetuate biases have been consistently raised (Cheng, 2017). The recent wave of generative AI, as noted by Creely (2023), has called for more research into the long-term effects it will have on students. It is also vital to acknowledge that access to reliable technological infrastructure is essential for equitable AI integration, and that balancing AI-driven learning with human interaction remains crucial for holistic language development. While AI offers valuable support, teacher feedback and peer interaction are indispensable for fostering communicative competence and cultural understanding.

Despite these observations, the literature indicates that several studies have investigated the influence of e-learning on English as a Foreign Language students (Ahmed, 2020a). Furthermore, Samira (2022) examined the role of AI applications within online EFL learning environments. Their findings suggest that AI has the potential to alleviate common barriers associated with online learning, such as a lack of personalized feedback and limited interaction, thereby enhancing overall learning outcomes. This underscores AI's ability to create more engaging and effective online learning experiences, particularly for language learners.

Recent studies have increasingly focused on the influence of AI-driven technologies on the learning of EFL among Kurdish students, a group often facing unique educational challenges due to linguistic and geographical factors. These studies collectively indicate a growing recognition of AI's potential to transform EFL education, albeit with nuanced findings. As Shareef (2024) suggests, Kurdish

students perceive AI-powered platforms positively for their ability to enhance English grammar proficiency. However, a crucial caveat is that these platforms are not considered complete, self-sufficient solutions. Instead, they are considered most effective when used alongside traditional teaching methods. This highlights the importance of blended learning approaches, where AI is a supplemental tool rather than a replacement for human instruction. Omar (2022) underscores the broader impact of technology, including AI, on the overall EFL learning process experienced by Kurdish students. This suggests that integrating digital tools fundamentally reshapes how English is taught and learned in this context, hinting at a paradigm shift in which technology plays a more central role in facilitating language acquisition.

Fathi et al. (2024) explore the specific application of AI in developing speaking skills. Their findings reveal that AI-mediated interactive speaking activities are more effective in improving speaking fluency and learners' willingness to communicate than conventional peer-interaction activities. This suggests that AI can create engaging and personalized speaking-practice environments that foster confidence and competence.

Hamudi (2025) explored AI's potential in facilitating personalized learning for Spanish students in Iraq. This study highlights AI's capacity to assist teachers with planning and evaluation while providing students with diverse exercise opportunities tailored to their individual needs. This demonstrates the versatility of AI in adapting to different language-learning contexts and addressing specific pedagogical challenges.

However, despite the generally positive reception of AI in language education, concerns regarding overreliance and information reliability have been raised (Jiang, 2022; Zhai et al., 2024; Elsayed, 2024). This highlights the importance of critical evaluation and responsible implementation of AI tools, ensuring that they complement rather than replace human interaction and pedagogical expertise (Mishra & Varshney, 2024). These studies collectively suggest that while AI holds significant promise for improving EFL learning experiences, further research is imperative. They converge on the conclusion that AI-driven technologies hold substantial promise for enhancing various facets of EFL learning, including grammar, overall proficiency, and speaking abilities. However, a recurring theme is the necessity of integrating AI with traditional pedagogical practices to maximize its effectiveness. The research suggests that AI serves best as an augmentation, not a substitution, for human teachers and established teaching methods. This nuanced understanding is crucial for educators and policymakers seeking to leverage AI effectively in EFL education.

Still, there appears to be little or no research that delves into the impacts of AI-driven technologies on Kurdish students—English as a Foreign Language learners in Iraq. Current research has not filled this gap. Hence, the present study aims to investigate the influence of AI-driven technologies on Kurdish students of English as a Foreign Language. Almost all Kurdish language students in Iraq spend a considerable amount of time on the Internet, such as playing games and watching TikTok videos, so it is paramount to examine their use of AI-driven technologies for educational purposes, especially in learning English; this concern forms the fundamental basis of this study.

4. Methodology

For the present research study, an online questionnaire was designed and administered using Google Forms. The questionnaire consisted of three parts. In the first part, detailed instructions were given on how to complete the questionnaire. In the second part, data were collected about the students, including questions about the time they spend on AI-driven technologies to learn English and their choice of AI models. In the third part of the questionnaire, ten items were included, to be answered

using a five-point Likert scale (Best & Kahn, 2007) of “Strongly Disagree” (SD), “Disagree” (D), “Neutral” (N), “Agree” (A) and “Strongly Agree” (SA). At the same time, the responses of 120 Kurdish English as a Foreign Language students studying at different Iraqi universities were quantitatively analyzed. The students cooperated and interacted fully with the elements of the questionnaire. A link to the questionnaire was sent to Kurdish students, after validating its validity and reliability, as shown in Table 1.

Table 1. Reliability statistics

Cronbach's Alpha	N of Items
.681	10

in Iraqi universities through different WhatsApp groups. Simultaneously, an accompanying message asked the students to respond to the questionnaire. Many saw the message, but only students interested in the investigation responded.

5. Results

The questionnaire did not include questions about the demographic information of the students. All the participants in the study were male, and their age was not necessary for the results obtained. The participants were not asked to reveal their identities. The results are explained below to answer the research study questions.

Study Question No. 1: How much time do Kurdish students of English as a Foreign Language spend using AI models?

Table 2. Time spent on AI-driven technologies

No.	Time	Frequency	Percentage
1.	More than 4 hours	67	55.8%
2.	4 hours	17	14.2%
3.	3 hours	14	11.7%
4.	2 hours	10	8.3%
5.	One hour	12	10.0%
6.	Less than one hour	0	0.0%

The data presented in Table 2 revealed a striking pattern of high user engagement. More than half of the respondents reported spending more than four hours utilizing AI models. Also, about one-quarter reported spending three to four hours daily on AI models. Conversely, only 8.3% (10 respondents) indicated two hours of usage, highlighting a clear contrast with the prevalence of prolonged usage. Notably, the table shows zero respondents reporting less than one hour of AI model use, suggesting that those who engage with these tools tend to do so for considerable durations. The implications of this data point towards a potential for dependency or a strong reliance on AI models for various tasks, prompting further investigation into the nature of these activities and the potential impact of prolonged usage. The data also suggests that once users engage with these AI models, they interact with them for extended periods. Further research could explore the underlying factors contributing to these extended usage patterns and users' activities.

Study Question No. 2: What is the attitude of Kurdish English as a Foreign Language students about using AI-driven technologies as pedagogical and educational tools?

Ten items of the questionnaire were designed to determine students' attitudes towards AI-driven technologies as pedagogical and educational tools. According to the Likert scale, these items were created with five options (Best & Kahn, 2007). To facilitate scoring, SA and A were combined as "Agree," while SD and D were combined as "Disagree." Table 3 below explains the results obtained.

Table 3. Frequency and percentage of the responses to using AI models

Items	SD	D	N	A	SA	D%	N%	A%	Rank
The use of AI-driven technologies helped me learn new vocabulary items in English.	1	3	3	69	24	3.33	2.50	94.17	1
The use of AI-driven technologies helped me improve my spelling.	6	5	0	1	88	9.17	0.00	90.83	2
Learning English through AI-driven technologies was entertaining.	6	12	13	22	47	15.00	10.83	74.17	7
AI-driven technologies helped me improve my fluency in English.	10	15	5	47	23	20.83	4.17	75.00	6
AI-driven technologies helped me improve my English language skills.	18	1	2	6	73	15.83	1.67	82.50	5
Using AI-driven technologies is a waste of time.	2	17	19	21	41	40.83	15.83	43.33	9
AI-driven technologies helped me improve my academic performance.	7	3	25	22	43	24.17	21.67	54.17	8
AI-driven technologies increased my interaction with classmates.	3	6	4	6	88	7.50	3.33	89.17	3
AI-driven technologies increased my interaction with teachers.	4	4	8	11	73	6.67	6.67	86.67	4
I find myself addicted to AI models.	1	3	3	5	88	3.33	2.50	94.17	1
Total	78	98	83	340	601	12.22	5.76	65.35	

In Table 3, the researchers analyzed the data using the frequency and percentage of participant responses regarding the integration and perceived effectiveness of AI-driven technologies in English language learning. The table presents the combined percentages of agreement and neutrality. The findings revealed an overall agreement percentage of 65.35%, indicating a generally positive attitude towards AI-driven technologies as tools for English language acquisition. These positive responses are further validated by the large number of participants who either agreed or strongly agreed (601 responses), significantly outweighing those who disagreed or strongly disagreed (176). Notably, two items – "The use of AI-driven technologies helped me learn new vocabulary items in English" and "I find myself addicted to AI models" – scored the highest percentage of agreement, both with a remarkable 94.17%, ranking them first. This suggests that participants perceive AI-driven technologies as particularly effective for vocabulary acquisition and highly engaging, to the point of potential addiction. Similarly, "The use of AI-driven technologies helped me improve my spelling" and "AI-driven technologies increased my interaction with classmates" also received very high agreement rates, indicating strong positive perceptions of AI use.

Conversely, "Using AI-driven technologies is a waste of time" received the lowest percentage of agreement, at 43.33%, ranking it ninth. This indicates a consensus among participants that AI-driven technologies are not perceived as a waste of time. "AI-driven technologies helped me improve my academic performance" also showed relatively low agreement, suggesting that participants are less convinced of AI's direct impact on their academic performance. The percentage of neutral responses,

at 5.76%, is comparatively low, demonstrating that participants generally held explicit, non-neutral opinions regarding the efficacy of AI models.

Study Question No. 3: Which of the AI models is mainly used by Kurdish EFL students to learn the English language?

The data were analyzed to answer study question No. 3, and the participants' responses were recorded, as explained in Table 4 below.

Table 4. Most used AI-driven technologies for learning the English language

Media	Frequency	Percentage
Duolingo	69	57.50
ChatGPT	28	23.33
Deepseek	15	12.50
Perplexity	8	6.67
Total	120	100.00

Duolingo can play an essential role in helping students understand English. This platform simplifies language learning and helps build student confidence. It also provides student-centred language activities, which are highly reliable (Tiara et al., 2021; Tuong & Dan, 2024). Duolingo is an American educational technology company that produces learning apps and provides language certification (Sakalauskė & Leonavičiūtė, 2022). Duolingo offers courses in 43 languages. Its learning method incorporates gamification to motivate users with points, rewards, and interactive lessons featuring spaced repetition. It can also help students understand English lessons and increase their performance in language learning. The complications and obstacles experienced by language learners can be addressed through Duolingo, leading to a better understanding of English. Duolingo is perhaps "more effective and successful than textbook-based English courses in promoting better teaching and learning of the English language" (Purwanto, 2023). Following Duolingo, ChatGPT emerged as the second most popular AI model, with a percentage of 23.33%. This suggests that many learners believe in AI's capabilities for various language-learning tasks, such as engaging in practice conversations, seeking grammar corrections, or expanding their vocabulary. Deepseek also demonstrates a notable usage level, with a percentage of 12.50%. Perplexity is the least frequently mentioned AI model in this context, with a rate of 6.67%.

Study Question No. 4: Which language skills are the most developed among Kurdish English as a Foreign Language learners while using AI models?

To find the answer to Study Question No. 4, the participants' responses were statistically analyzed, and the results obtained are shown in Table 5.

Table 5. Most developed skill when using AI-driven technologies for learning English

Language Skills	Frequency	Percentage
Reading	23	19.17
Listening	71	59.17
Writing	5	4.17
Speaking	21	17.50
Total	120	100.00

From the analysis of Table 5, it is evident that the most developed skill of Kurdish EFL learners as a result of using AI-driven technologies is listening, according to 71 out of 120 (59.17%). The next skill is reading, mentioned by 23 out of 120 (19.17%). With a slight difference in number, speaking is the third most developed skill, while the least developed skill is writing, noted by only 5 out of 120 (4.17%) participants.

There is no doubt that the act of listening develops with frequent use of AI-driven technologies. This is even more true when students interact with artificial speakers on Duolingo. “Listening” competence provides a foundation for competence in English in general and is a competence that improves students’ ability to acquire knowledge (Liubinienė, 2009; Qi et al., 2015). Also, AI-driven technologies can be used effectively to develop “reading” and “speaking” skills. Students can practice and speak English with their classmates and friends, developing their pronunciation and reading extensive material on useful websites. “Writing” was selected as the least developed skill because most EFL students do not practice paragraph writing on AI models. However, they do improve their spelling and vocabulary.

6. Discussion

The data analysis reveals a profound level of user engagement with AI models, characterized by extensive daily usage. A significant majority of respondents spend over four hours per day interacting with these technologies, and this finding is supported by Hammad and Awed (2023) and Selvaraj et al. (2021), who found that students spent more than four hours using AI and social media. This pattern underscores a substantial integration of AI into their daily routines and suggests a potential reliance on these tools for learning English. The findings regarding English as a Foreign Language learning indicated a generally positive perception of AI-driven technologies. As participants expressed a strong consensus regarding the effectiveness of these tools, particularly in enhancing vocabulary acquisition, AbuSahyon et al. (2023) similarly stated that chatbots and AI can provide prompt feedback and deliver tailored learning approaches, enabling students to improve their language levels. Duolingo and ChatGPT have emerged as the most favoured AI platforms, highlighting their perceived utility and accessibility in language learning. These findings align with Sehlaoui (2024), who found that most Spanish students integrate AI into foreign-language learning using Duolingo and ChatGPT. Notably, the data reveal a significant improvement in listening skills among Kurdish EFL learners attributed to using AI models, particularly Duolingo. This finding aligns with that of Alrasheedi (2024), who reported that Duolingo and similar platforms have shown success in teaching receptive skills such as listening when combined with good listening-comprehension strategies, especially in distance-education settings. This suggests that AI-powered listening exercises and interactive audio components efficiently develop auditory comprehension.

Conversely, writing skills are identified as the least developed proficiency, likely due to the limited practice of paragraph composition and extended writing tasks on these platforms. This finding is also supported by Alrasheedi (2024), who stated that AI is still weak in this respect. Participants emphasize that AI tools are most effective when combined with traditional teaching methods rather than used in isolation. This highlights the complementary role of AI in augmenting human instruction and providing personalized learning experiences.

Despite the overall positive reception, concerns regarding over-reliance on AI and the reliability of information generated by these technologies remain, as Zhai et al. (2024) warned about over-reliance on AI models. These concerns underscore the need for critical evaluation and ethical consideration when integrating AI into educational settings. Further research is warranted to develop frameworks

for responsible AI implementation, ensuring that these tools are used to enhance rather than replace human interaction and pedagogical expertise. The extended engagement necessitates a deeper examination of users' specific activities and the potential implications of extended AI interaction, particularly regarding dependency and cognitive impact.

This finding implies that teachers can employ AI to help learners overcome anxiety about speaking in a foreign language. Similarly, AI chatbots are tools with the potential to promote language-learner autonomy by offering opportunities for language practice without the need for a real speaking partner. Language learners are most likely to benefit from using AI-driven technologies, as Koç and Savaş (2025) reported that AI-driven technologies positively affect learning engagement, command of the language, and beneficial learning experiences.

7. Conclusion

It can be concluded that Kurdish students spend much time using AI-driven technologies while learning English. They feel that using AI-driven technologies helps them develop better listening skills and provides other benefits, such as acquiring a better vocabulary and reducing spelling errors. Duolingo is their favourite and most used AI model for learning English, and they hold a very positive attitude towards using AI-driven technologies as pedagogical and educational tools. Their interactions with teachers and classmates through social networks are improved, leading to general improvements in their academic performance. Also, students enjoy using AI-driven technologies to learn English, although some have confessed that this wastes time.

The implications of this data point towards a potential for dependency or a strong reliance on AI-driven technologies for various tasks, prompting further investigation into the nature of these activities and the potential impact of prolonged usage.

8. Recommendations

To gain a better understanding of these findings, further research is recommended. Exploring the specific types of AI-driven technologies used by participants, conducting qualitative studies to delve into the reasoning behind the observed responses, and analyzing the relationship between demographic factors and responses could provide valuable insights. Ultimately, this study provides a solid quantitative foundation for understanding the perceived impact of AI-driven technologies on English language learning, highlighting both their perceived strengths and the areas where further exploration is warranted.

Further research could explore the underlying factors contributing to these extended usage patterns and the activities users engage in. In summary, while AI offers significant potential for enhancing EFL learning, its practical and ethical integration requires careful consideration of its limitations and potential risks.

References

- AbuSahyon, A. S. A. E., Alzyoud, A., Alshorman, O., & Al-Absi, B. (2023). AI-driven technology and chatbots as tools for enhancing English language learning in the context of second language acquisition: A review study. *International Journal of Membrane Science and Technology*, 10(1), 1209–1223.
- Ahmed, H. R. (2020a). Analyzing errors made by Kurdish EFL learners in applying the rules of syntactic structure. *Journal of Educational and Psychological Sciences*, 4(34), 159–168.

- Ahmed, H. R. (2020b). Inaccuracies of contra-distinguishing adjectives and adverbs perpetrated by EFL students at ME in Kurdistan Region, Iraq. *Electronic Research Journal of Social Sciences and Humanities*, 2(4), 64–74.
- Ahmed, H. R. (2020c). The perceptions and attitudes of EFL learners in the Kurdistan Region of Iraq towards online English courses. *Research Journal of English Language and Literature*, 7(4), 288–300.
- Ahmed, H., Kausar, S., & Mohammed, O. (2023). Social networking sites mediated course reflections on instructional technology: A case study of female students at a women's university. *TESOL and Technology Studies*, 4(2), 36–48.
- Ahmed, O. O., Islam, S. I. T., Hamdan, S. I., Al-Rajab, M., Alqatawneh, I., Al-Sartawi, A., & Kanan, M. (2024). Quality Pointpal: AI-enhanced redefinition of social networking for sustainable digital usage and genuine human connections. *Operational Research in Engineering Sciences: Theory and Applications*, 7(1).
- Al-Kadi, A. M. T., & Ahmed, R. A. (2018). Evolution of English in the internet age. *Indonesian Journal of Applied Linguistics*, 7(3), 727–736. <https://doi.org/10.17509/ijal.v7i3.9823>
- Alrasheedi, S. (2024). The effect of using AI applications to develop EFL listening comprehension skills among university students. *Conhecimento & Diversidade*, 16(44), 601–637. <https://orcid.org/0000-0001-7165-3656>
- Alrefaei, S. M. A. S., Afzal, K. M., & Mohammed, O. A. (2025). The use and perception of online learning among EFL faculty members in Yemen. *TESOL and Technology Studies*, 6(1), 1–15.
- Alrefaei, Y., & Mohammed, O. S. (2025). Yemen, English in. *The Wiley Blackwell Encyclopedia of World Englishes*, 1–12.
- Aprianto, D., & Zaini, N. (2019). The principles of language learning and teaching in communication skill developments. *Voices of English Language Education Society*, 3(1).
- Best, W., & Kahn, J. V. (2007). *Research in education*. Prentice Hall of India.
- Bilgin, R. (2024). Exploring students' perceptions towards 21st century skills through novel applications: A comparative study among EFL learners in Iraq. *Arab World English Journal (AWEJ)*, 15(1), 283–297.
- Cheng, G. (2017). The impact of online automated feedback on students' reflective journal writing in an EFL course. *The Internet and Higher Education*, 34, 18–27. <https://doi.org/10.1016/j.iheduc.2017.04.002>
- Creely, E. (2023). The possibilities, limitations, and dangers of generative AI in language learning and literacy practices. In *International Graduate Research Symposium 2023: Proceedings* (pp. 1–14).
- Crystal, D. (2005). The scope of Internet linguistics. In *Proceedings of the American Association for the Advancement of Science Conference*, Washington, DC, USA, 17–21.
- Crystal, D. (2011). *Internet linguistics: A student guide*. Routledge.
- Dash, N., & Dash, M. (2007). *Teaching English as an additional language*. Atlantic Publishers & Distributors.
- Fathi, J., Rahimi, M., & Derakhshan, A. (2024). Improving EFL learners' speaking skills and willingness to communicate via artificial intelligence-mediated interactions. *System*, 121. <https://doi.org/10.1016/j.system.2024.103254>
- Hammad, M. A., & Awed, H. S. (2023). The use of social media and its relationship to psychological alienation and academic procrastination. *International Journal of Membrane Science and Technology*, 10(2), 332–340.
- Hamudi, E. S. A. (2025). The positive side of artificial intelligence as a key tool for language expertise (The Spanish as a model). *Lark*, 17(1/Pt1), 827–848. <https://doi.org/10.31185/lark.3978>
- Hussain, S. M., Satti, S. M. J., & Khan, Z. (2024). AI-powered personalized learning: Advancing language education in the digital era. *Journal of Social Signs Review*, 2(4), 730–740.
- Jiang, R. (2022). How does artificial intelligence empower EFL teaching and learning nowadays? A review on artificial intelligence in the EFL context. *Frontiers in Psychology*, 13, 1049401.
- Koç, F. Ş., & Savaş, P. (2025). The use of artificially intelligent chatbots in English language learning: A systematic meta-synthesis study of articles published between 2010 and 2024. *ReCALL*, 37(1), 4–21. <https://doi.org/10.1017/S0958344024000168>
- Liubinienė, V. (2009). Developing listening skills in CLIL. *Kalby Studijos*, (15), 89–93.
- Mansoor, A. A., Mohammed, O. S. M., Ahmed, H. R., Munasser Awadh, A. N., Abdulfatah, H. M., & Sheikh, E. Y. (2023). English language teaching through a short story: A technique for improving students' vocabulary retrieving. *Cogent Education*, 10(1), 2161221.
- Mishra, D. R., & Varshney, D. (2024). Comprehensive analysis of human and AI task allocation in the education sector: Defining futuristic roles and responsibilities. *World Journal of Advanced Research and Reviews*, 22(3), 1883–1893. <https://doi.org/10.30574/wjarr.2024.22.3.1949>

- Mohammed, O. S. M. (2023). Yemeni students' utilization of Google Translate for learning English language: Use, advantages, and disadvantages. *Journal of Social Studies*, 29(4), 136–156.
- Omar, A. W. (2022). The impact of technology on EFL Kurdish students in learning English language. *International Journal of Health Sciences*, 6(S6), 4441–4449.
- Prensky, M. (2001). Fun, play and games: What makes games engaging. *Digital Game-Based Learning*, 5(1), 5–31.
- Purwanto, A. A. (2023). Students' perception on using Duolingo for learning English vocabulary. *Journal of English Teaching*, 9(1), 70–82.
- Qassrawi, R. M., ElMashharawi, A., Itmeizeh, M., & Tamimi, M. H. (2024). AI-powered applications for improving EFL students' speaking proficiency in higher education. *Assessment*, 8, 9.
- Qi, Y., Sun, Y., & Feng, D. (2015). New media and English language teaching in China: A case study based on multiliteracies pedagogy. *TESOL International Journal*, 10(1). <https://www.elejournals.com/tesol-journal/tij-2015/tesol-international-journal-volume-10-issue-1-2015/>
- Sakalauskė, A., & Leonavičiūtė, V. (2022). Strategic analysis of Duolingo language learning platform. *Mokslas – Lietuvos Ateitis/Science – Future of Lithuania*, 14.
- Sehlaoui, F. Z. (2024). Integrating AI in foreign language teaching and learning: Learner autonomy and tool utilization in an Algerian university. *Passerelle*, 13(2), 116–139.
- Selvaraj, A., Radhin, V., Benson, N., & Mathew, A. J. (2021). Effect of pandemic based online education on teaching and learning system. *International Journal of Educational Development*, 85. <https://doi.org/10.1016/j.ijedudev.2021.102444>
- Shareef, N. G. (2024). Kurdish EFL students' perceptions towards AI-powered platforms for learning English grammar. *Zanco Journal of Human Sciences*, 28(3), 321–333.
- Tiara, A. D., Rahman, M. A., & Handrianto, C. (2021). The students' perception about use of Duolingo application for improving English vocabulary. *International Journal of Education, Information Technology, and Others*, 4(4), 690–701.
- Tuong, N. K., & Dan, T. C. (2024). A study on Duolingo mobile applications to improve EFL students' listening comprehension performances. *European Journal of Alternative Education Studies*, 9(1).
- Valcea, S., Hamdani, M. R., & Wang, S. (2024). Exploring the impact of ChatGPT on business school education: Prospects, boundaries, and paradoxes. *Journal of Management Education*, 48(5), 915–947.
- Wei-Xun, L., & Jia-Ying, Z. (2024). Impact of AI-driven language learning apps on vocabulary acquisition among English learners. *Research Studies in English Language Teaching and Learning*, 2(1), 1–11.
- Yang, F., Li, K., & Li, R. (2024). AI in language education: Enhancing learners' speaking awareness through AI-supported training. *International Journal of Information and Education Technology*, 14(6), 828–833.
- Yang, Y. (2025). AI-supported L2 vocabulary acquisition—A systematic review from 2015 to 2023. *Education and Information Technologies*, 1–35. <https://doi.org/10.1007/s10639-025-13417-8>
- Yuan, L., & Liu, X. (2025). The effect of artificial intelligence tools on EFL learners' engagement, enjoyment, and motivation. *Computers in Human Behavior*, 162. <https://doi.org/10.1016/j.chb.2024.108474>
- Zhai, C., Wibowo, S., & Li, L. D. (2024). The effects of over-reliance on AI dialogue systems on students' cognitive abilities: A systematic review. *Smart Learning Environments*, 11(1), 28. <https://doi.org/10.1186/s40561-024-00316-7>
- Zitouni, K. (2022). New trends in EFL online learning and teaching through the lens of artificial intelligence. *Almuqadimah of Human and Social Studies Journal*, 7(1), 1065–1080.
- Zitouni, M., Al-Traif, H., Zemni, B., Mohammed, O. S., & Aljasser, M. (2021). Utilization of YouTube to improve the pronunciation skill of Saudi learners in translation departments. *Asian ESP Journal*, 17(2), 133–154.