Original Article

Student Perceptions and Perceived Learning Outcomes of ChatGPT in German Language Learning at Nangarhar University

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Abstract

This study assesses the extent of ChatGPT use among German-language students at Nangarhar University and its effectiveness. Artificial intelligence (AI) has significantly influenced contemporary language education, and students in this study reported that ChatGPT serves as an effective source of instant feedback, personalized practice, and perceived support for language skill development. Given the limitations of the Afghan educational environment, such as a shortage of teachers, limited opportunities for language practice, and a lack of resources, ChatGPT offers an alternative, accessible learning format for students. The study used a descriptive-analytic quantitative approach with 90 students and a Google Forms questionnaire to assess familiarity, frequency of use, educational benefits, data validity, and the tool's impact on language skills. According to the results, the majority of students had a positive experience with ChatGPT, especially in improving writing and reading skills. Although some students experienced misinformation, the overall reliability of the information was considered acceptable. Students also expressed a high level of interest in AI becoming part of the formal curriculum and in organizing training workshops. The study concludes that ChatGPT is a powerful tool for language learning, but university policies, faculty training, and increased AI literacy are necessary for its effective and responsible use. Future research could focus on evaluating

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other languages, other faculties, and long-term educational impacts to further clarify the role of AI in Afghanistan.

Keywords: AI literacy, ChatGPT, German language, language learning, language skills, students

1. Introduction

In the modern era, artificial intelligence (AI) has become a fundamental part of scientific, administrative, and educational systems worldwide. The use of artificial intelligence tools, especially language models, in language learning has grown exponentially in recent years, with ChatGPT becoming a favorite among millions of students and teachers worldwide. The digitalization of language teaching has been around for decades. Still, advanced models like ChatGPT are taking this process to a new level, providing students with instant feedback, personalized practice, and new experiences to develop language skills (Boyqulova, 2025; Dou et al., 2025; Godwin-Jones, 2024; Naznin et al., 2025). In the context of Afghanistan, where language practice environments are limited, and the integration of modern educational technologies remains constrained, such tools can make language learning easier, more flexible, and more tailored to individual students' needs (Arooje & Burridge, 2021; Zaki, 2023).

The importance of the topic lies in the fact that German language learning in Afghanistan faces many challenges. Shortage of teachers, lack of educational resources, limited opportunities for practical language practice, and low adoption of technology are obstacles that have made learning this language challenging (Zaki, 2023; Arooje & Burridge, 2021). In this context, ChatGPT, as an AI-based educational resource, provides students with opportunities to practice different aspects of language learning, particularly writing, reading, vocabulary, grammar, and interactive communication (Boyqulova, 2025; Fountoulakis, 2024; Jmaiel et al., 2025; Seddik, 2025). The value of this tool lies in the fact that students practice language skills in their own time, without pressure or restrictions from the teacher, immediately recognize their mistakes, and receive guidance at their level (Godwin-Jones, 2024; Stockwell & Reinders, 2019). The purpose of this study is to examine students' perceptions, patterns of use, and perceived learning outcomes associated with ChatGPT in German language learning rather than to measure actual language proficiency or objective learning gains. The study seeks to determine how much students use ChatGPT, which skills they use it for, their perceptions of the tool's reliability and accuracy, and how they perceive its contribution to their overall learning experience. The study also explores the need for formal AI teaching and training workshops among students.

Although ChatGPT has become a key element of educational change globally, there are challenges and limitations to its use that the existing literature has identified.

Key challenges include: the potential for misinformation, the risk of students' critical thinking being undermined, the lack of technical equipment and internet, the lack of teacher training, and the lack of a clear university policy for the use of AI (Akhtar, 2024; Dempere et al., 2023; Fernández Cerero et al., 2025; Naznin et al., 2025). All of these factors can create barriers to the effective use of this advanced tool and highlight the need for specific measures to ensure responsible and academically appropriate use of AI in education. Overall, this study considers ChatGPT not merely a technological innovation but a potentially useful supplementary resource for language learning in the Afghan context. The study focuses on students' perceptions of this tool, its perceived benefits, challenges, and practical needs, to better understand modern language teaching methods and pave the way for future developments.

2. Literature Review

2.1 The Role of Artificial Intelligence in Language Learning

Artificial Intelligence has brought about profound changes in education worldwide in recent years, especially in language learning, reshaping traditional teaching and learning methods. According to Seddik (2025), AI-based tools provide students with opportunities to learn languages in a flexible, interactive, and personalized way. Also, research shows that language models such as ChatGPT provide immediate and accurate support to students in the areas of grammar, vocabulary, writing, and translation, which play an important role in the development of language skills (Dou et al., 2025; Akhtar & Fikri, 2026; Akhtar et al., 2025). In this regard, Godwin-Jones (2021) argues that artificial intelligence tailors the learning environment to learners' individual needs and helps correct repetitive errors. In addition, AI increases the speed of learning, learners' self-confidence, and their level of independent learning. Therefore, artificial intelligence has become an important part of modern language learning, and its impact is expanding day by day.

2.2 The Special Importance of ChatGPT in Language Learning

Numerous scientific studies have examined the effectiveness of ChatGPT. Dempere et al. (2023) show that ChatGPT provides learners with a flexible and customized environment for language practice that helps to strengthen grammatical knowledge, writing skills, and general linguistic comprehension. An important feature of this tool is that learners can interact with it anytime, anywhere and benefit from immediate feedback. Furthermore, Jmaiel et al. (2025) and Boyqulova (2025) found that ChatGPT was effective in simplifying complex language concepts, expanding vocabulary, and improving reading skills. Stockwell and Reinders (2019) also found that technological tools increase students' active participation, sustained interaction, and practical practice. These factors play an important role in enhancing language memory, comprehension, and practical use.

2.3 The Importance of AI in Resource-Limited Countries

In countries around the world where language-learning resources are limited, artificial intelligence is particularly important. Nguyen et al. (2022) show that AI is highly useful for students who have only access to book-based resources and few opportunities for practical practice. In such situations, ChatGPT serves as a virtual teacher, partner, and guide, providing students with appropriate opportunities for language practice. Afghanistan is also one of the countries facing many challenges in foreign language learning. According to the findings of Arooje and Burridge (2022) and Akhtar et al. (2025), language teaching opportunities in Afghanistan are limited by international standards. German language learners in particular face a shortage of professional teachers, lack of practical training opportunities, and a lack of diverse educational resources (Zaki, 2024). For this reason, ChatGPT has emerged as an alternative educational resource for them that supports all four skills: listening, speaking, reading, and writing (Akhtar, 2024).

2.4 Limitations and Potential Problems of ChatGPT

Although ChatGPT has many advantages, several studies have also identified limitations. Fountoulakis (2024) notes that the tool can sometimes provide inaccurate information or may have shortcomings in translation and responses. These problems are especially noticeable when learners do not evaluate the accuracy of the information received. Sahem (2024) emphasizes that effective use of ChatGPT requires teacher guidance and an appropriate academic framework. In his opinion, although ChatGPT is a powerful tool for language learning, relying on it alone is not enough to acquire deep language skills. Therefore, artificial intelligence tools should be used as a complement to traditional teaching, not as a substitute for the teacher (Akhtar, 2024).

2.5 Vygotsky's Theory of Social Constructivism

The theoretical basis of this study is derived from contemporary theories of language learning and concepts of artificial intelligence (Dou et al., 2025). According to Vygotsky's social constructivism, learning is most effective when the learner receives support from a knowledgeable, supportive partner (LAN, 2023; Vygotsky, 1978). ChatGPT serves as a virtual supportive partner in this framework, guiding the learner, correcting his mistakes, and assisting in his development. The concept of the "Zone of Proximal Development" also suggests that learners can achieve higher levels of learning with appropriate support, and ChatGPT can be considered a new form of such support (Vygotsky, 1978).

2.6 Communicative Language Teaching Theory and ChatGPT

Communicative Language Teaching (CLT) theory emphasizes that language is learned through interaction and communication (Daarm, 2016). ChatGPT provides students with opportunities to engage in ongoing conversations, ask questions, practice writing, and receive immediate feedback. These features provide practical applications of the core principles of CLT and engage students in real-world language use (Akhtar, 2024).

2.7 Input–Interaction–Output Model and ChatGPT

According to the Input–Interaction–Output model, language learning is effective when learners experience appropriate language input, interaction, and output (Mahapatra, 2024). ChatGPT offers all three elements in a single platform. Students can study various language materials, engage in interactive discussions with artificial intelligence, and produce and evaluate their own writing or speech (Naznin et al., 2025). This feature makes ChatGPT a comprehensive and versatile tool for language learning.

2.8 Technology Support Theory and Research Gap

The technology support theory states that technology should support human learning rather than replace the teacher (Fernández Cererom et al., 2025). ChatGPT also acts on this principle and enhances the student's learning process. In the context of Afghanistan, German-language students at Nangarhar University, in particular, can benefit significantly from these tools, as opportunities for language practice and instruction are limited (Akhtar, 2024). Despite growing international research on ChatGPT and language learning, a scientific gap remains regarding the effectiveness of ChatGPT in Afghan higher education institutions, particularly among German language students at Nangarhar University (Akhtar & Fikri, 2026; Akhtar et al., 2025). Therefore, the current study attempts to clarify the practical impact of ChatGPT by assessing students' experiences, perceptions, and learning outcomes, and to provide scientific evidence for the effective integration of artificial intelligence into the Afghan higher education system.

3. Methodology

This study assessed the level of ChatGPT use among students in the German Language Department at Nangarhar University, its effectiveness, and its impact on the learning process. A quantitative survey-type approach was chosen to conduct the study, as the aim was to collect and statistically analyze the students' experiences, opinions, and usage scores. The study employed a descriptive quantitative survey

design to examine students' perceptions and patterns of ChatGPT use. A Google Forms questionnaire was used to collect data assessing students' familiarity, frequency of use, effectiveness, limitations, and related opinions. This design enables a clear examination of ChatGPT usage trends using a promising statistical model. The study population consisted of 120 undergraduate students enrolled in the German Language Department at Nangarhar University. The required sample size was determined using Yamane's (1967) formula with a 5% margin of error, yielding a recommended sample size of 93 students. Accordingly, questionnaires were distributed to 93 students selected from the study population. Of these, 90 students returned completed questionnaires, while three students did not respond, resulting in a response rate of 96.8% (90/93). Therefore, the final analysis was based on 90 valid responses. The sample size was calculated according to Yamane's formula:

$$n = \frac{N}{1 + N(e)^2}$$

Where N = population size and e = margin of error (0.05),
So, the minimum required sample size was calculated as:

$$n = \frac{120}{1 + 120(0.05)^2} = 92.31$$

A closed-ended questionnaire was developed to collect data, which was divided into three sections:

1. Demographic information: Age, year of study, and level of familiarity with AI.
2. Pattern and frequency of use of ChatGPT: Frequency of use, purposes of use, and level of support for language skills.
3. Evaluation of the impact of ChatGPT: Learning support, cognitive impact, experience of information validity, and desire to be part of the curriculum.

The questionnaire included Likert-scale, Multiple-Choice, and yes/no questions. The analysis of the collected data was conducted using descriptive statistics. The following statistical criteria were used for the analysis: Frequency, Percentage, Mode (most recurring value), and Range & Spread. Through this method, a clear pattern in the students' opinions and comparisons of data across categories were achieved. The analysis was done in Excel/Statistical Sheets. All participants in the study were completely voluntary. Their personal information was kept confidential and used for academic purposes only. The participants were assured that the confidentiality of their responses would be respected. The collected data were analyzed using descriptive statistical techniques, including frequencies, percentages, modes, and ranges, to summarize participants' responses and identify overall usage patterns and perceptions. No inferential statistical analyses were conducted because the study's primary

objective was to provide a descriptive overview of students' experiences with ChatGPT.

4. Results

This section presents the results of a survey of students in the German Language Department. The data were analyzed from 90 valid questionnaires and presented as frequencies and percentages using descriptive statistics. For ease of presentation and readability, the findings have been organized into three main sections: (1) demographic characteristics of the participants, (2) patterns and purposes of using ChatGPT, and (3) students' perceptions of ChatGPT and related learning experiences. This organization provides a systematic, clear picture of students' levels of ChatGPT use, purposes for use, and their reported learning experiences.

Table 1. Demographic characteristics of participants (n = 90).

Variable	**Category**	**Frequency (n)**	**Percentage (%)**
Age	18–20	46	51.1
	21–23	32	35.6
	24–26	12	13.3
Year of Study	First Year	43	47.8
	Second Year	13	14.4
	Third Year	25	27.8
	Fourth Year	9	10.0
Familiarity with ChatGPT	Low–Moderate Familiarity	High Familiarity	Total
	36 (83.7%)	7 (16.3%)	43
	11 (84.6%)	2 (15.4%)	13
	15 (60.0%)	10 (40.0%)	25
	5 (55.6%)	4 (44.4%)	9
Totral	67 (74.4%)	23 (25.6%)	90
Chi-square test	$\chi^2 = 8.46$, $p = 0.037$		

Table 1 shows the demographic characteristics of the participants and their level of familiarity with ChatGPT. The majority of participants (51.1%) were aged 18–20 years, and first-year students had the highest proportion (47.8%). Regarding familiarity with ChatGPT, 74.4% of participants reported low to moderate familiarity (25%–50%), and 25.6% reported high familiarity (75%–100%). The results showed that low to moderate familiarity was 83.7% and 84.6% in the first and second years, respectively, while high familiarity increased to 40.0% and 44.4% in the third and fourth years, respectively. The results of the Chi-square test ($\chi^2 = 8.46$, $p = 0.037$) indicate a statistically significant association between academic year and familiarity with ChatGPT. This means that students in higher academic years generally have greater familiarity with ChatGPT.

Table 2. ChatGPT usage patterns

Frequency of Use	**Low–Moderate Improvement**	**High Improvement**	**Total**
Occasionally	29 (65.9%)	15 (34.1%)	44
Daily	12 (38.7%)	19 (61.3%)	31
Several times a week	8 (53.3%)	7 (46.7%)	15
Total	49 (54.4%)	41 (45.6%)	90
Chi-square test	χ^2 (2, N = 90) = 5.43, p = 0.066.		
Variable	**Category**	**Frequency**	**Percentage**
Main Purpose of ChatGPT Use	Homework	32	35.6
	Information	28	31.1
	Language Skills	17	18.9
	Research and Academic Writing	13	14.4
Learning Support	Yes	75	83.3
	No	15	16.7
Language Skill	Writing	39	43.3
	Reading	28	31.1
	Listening	14	15.6
	Speaking	9	10.0

Table 2 presents the students' usage patterns of ChatGPT and their perceived skill development. In terms of ChatGPT usage, 48.9% of students reported using the tool occasionally, 34.4% daily, and 16.7% several times a week. Among the purposes of use, completing homework (35.6%) was the most important purpose, followed by obtaining information (31.1%) and using it to improve language skills (18.9%). Also, 83.3% of participants considered ChatGPT a useful support for learning, and among the language skills, writing skills (43.3%) showed the highest reported improvement. The results show that 61.3% of daily users reported a high level of skill development, compared with 34.1% among occasional users and 46.7% among several-time users. Thus, there is a clear trend toward increased perceived skill development with increasing frequency of ChatGPT use. This finding supports the possibility that regular use is associated with positive perceptions of student skill improvement; however, due to the cross-sectional nature of the study, this relationship should not be interpreted as direct evidence of cause and effect. The results of the Chi-square test show that the observed relationship between the frequency of ChatGPT use and students' perceived skill growth was not statistically significant at the 0.05 level, $\chi^2(2, N = 90) = 5.43$, $p = 0.066$. Although the daily users group reported higher skill growth (61.3%) than the occasional users (34.1%) and students who used ChatGPT several times a week (46.7%), this difference did not reach the required level of statistical significance. Therefore, based on the available data, a strong statistical relationship between the frequency of ChatGPT use and perceived skill growth cannot be claimed. However, the observed trend suggests that regular use of ChatGPT may be associated with greater perceived skill growth, indicating the need for further in-depth evaluation in future studies.

Table 3. Students' perceptions of ChatGPT.

Variable	Category	Frequency	Percentage
Encountered Incorrect Information	Yes	35	38.9
	No	55	61.1
Reliability	25%	29	32.2
	50%	38	42.2
	75%	14	15.6
	100%	9	10.0
Cognitive Effect	Positive	58	64.4
	Negative	17	18.9
	Neutral	15	16.7
Curriculum Integration	Yes	62	68.9
	No	28	31.1
Independent Thinking	Positive	45	50.0
	Negative	26	28.9
	Neutral	19	21.1
Need Training Workshop	Yes	80	88.9
	No	10	11.1
Perceived Reliability	Positive Cognitive Effect	Negative/Neutral Effect	Total
Low–Moderate Reliability	38 (56.7%)	29 (43.3%)	67
High Reliability	20 (87.0%)	3 (13.0%)	23
Total	58 (64.4%)	32 (35.6%)	90
Chi-square test	$\chi^2(1, N = 90) = 7.18, p = 0.007$		

The results in Table 3 show the students' general perceptions of ChatGPT and the relationship between Perceived Reliability and Cognitive Effect. Overall, 38.9% of participants reported encountering misinformation on ChatGPT, while 61.1% did not. Regarding ChatGPT's reliability, the majority of participants (74.4%) had low to moderate levels of trust, while 25.6% considered ChatGPT a highly reliable tool. Regarding cognitive effects, 64.4% of the students expressed positive opinions, 18.9% negative, and 16.7% neutral. Also, 68.9% of participants supported integrating ChatGPT into the curriculum, 50.0% reported a positive effect on independent thinking, and 88.9% indicated the need for a training workshop on the appropriate and effective use of ChatGPT. The results showed that 87.0% of students with high confidence reported a positive cognitive impact from ChatGPT, compared with 56.7% among students with low to moderate confidence. The result of the chi-square test, $\chi^2(1, N = 90) = 7.18, p = 0.007$, indicates a statistically significant relationship between ChatGPT's confidence and students' perceived cognitive impact. In other words, students who rated ChatGPT as more reliable also perceived a greater positive cognitive impact from this tool. This analysis extends the study findings beyond mere frequencies and percentages to an assessment of the relationship between variables.

5. Discussion

The findings of this study indicate that most students in the German Language Department at Nangarhar University consider ChatGPT a useful and accessible educational tool for their studies. According to the results, most participants indicated that ChatGPT has helped them with homework, information retrieval, and especially with practicing writing and reading skills. These findings suggest that in countries like Afghanistan, where language learning resources and opportunities for practical practice are limited, AI-based tools can play an important role as a complementary tool to traditional teaching. However, these results should be interpreted in the context of students' perceptions and personal experiences, as this study did not assess actual language-skill development through tests.

The results of this study are consistent with the findings of previous studies. For example, Dempere et al. (2023) and Seddik (2025) found that ChatGPT provides a suitable environment for students to practice language, provide immediate feedback, and engage in independent learning. Similarly, Jmaiel et al. (2025) and Mahapatra (2024) demonstrated that AI tools provide effective support, particularly in strengthening writing skills, which is consistent with the findings of this study, as writing was the skill participants practiced most with ChatGPT. On the other hand, findings by Godwin-Jones (2024) and Stockwell and Reinders (2019) also show that AI-based interactive tools encourage active participation, self-reliance, and continuous learning, which is consistent with the positive experiences reported by our participants.

According to Vygotsky's Social Constructivism theory, learning is most effective when a knowledgeable and supportive instructor supports the learner. The results of this study show that most students found ChatGPT useful for immediate feedback, error correction, and language practice. This suggests that ChatGPT acts as a virtual supportive partner from the learners' perspective. In addition, the theory of communicative language teaching emphasizes that language is learned through continuous interaction and practical communication. The participants in this study also reported that ChatGPT provided an opportunity for active language use through questions, answers, and writing exercises. Therefore, the results of this study demonstrate logical coherence with both theoretical frameworks.

However, the findings of this study should also be examined critically. However, 83.3 percent of participants found ChatGPT useful for learning, nearly 38.9 percent said they had encountered incorrect information from ChatGPT. This finding suggests that the use of artificial intelligence is not without risks. On the other hand, 61.1 percent of students said they had not encountered incorrect information, but this alone is not proof of the information's complete accuracy. One possible interpretation is that students with High German language proficiency are more likely to recognize potential AI errors, whereas students with lower language proficiency may be less able to do so. Therefore, accepting AI responses should always be accompanied by critical thinking, data evaluation, and comparison with reliable scientific sources. Another

important finding of this study is that 68.9 percent of participants considered it appropriate to include ChatGPT in the official curriculum, and 88.9 percent requested the creation of AI-related training workshops. These results show that students consider artificial intelligence not just a temporary technical tool but an important part of the future of higher education. However, the implementation of this demand must be accompanied by a clear academic policy, capacity building of lecturers, and guidelines for the ethical and responsible use of AI, because without an appropriate academic framework, the excessive use of AI may also pose a risk of weakening independent thinking, academic integrity, and analytical capabilities.

6. Conclusion

The purpose of this study was to evaluate the use, perceptions, and reported learning outcomes of ChatGPT in German-language learning from the perspectives of students in the German Language Department at Nangarhar University. The study findings revealed that most participants considered ChatGPT a useful tool for language learning and used it most frequently to complete homework, obtain information, and practice reading and writing skills. Furthermore, the majority of participants believed that ChatGPT facilitated their learning process and provided appropriate opportunities for independent learning. On the other hand, reports that some participants received incorrect information indicate that the use of artificial intelligence should always be accompanied by critical thinking, data evaluation, and academic guidance from the instructor.

Although the results of this study provide valuable information about the usefulness of ChatGPT in German language learning, these findings are based on students' personal perceptions and reported experiences, not on direct assessments of language skills. Also, the final study sample was smaller than the intended sample size, and data were collected from students at only one university, so caution is warranted when generalizing the results. Therefore, future studies should evaluate the actual learning effects of ChatGPT through experimental research designs, pre- and post-tests, and standardized assessments of language skills, and include students from other universities and language programs in Afghanistan.

In light of the findings of this study, especially since 88.9 percent of the participants requested training workshops on AI, it is recommended that the Nangarhar University administration initiate regular training workshops and short-term training programs on the responsible and academic use of AI, so that students are familiar with the principles of effective use of ChatGPT, data evaluation, and academic integrity. In addition, the German language department and the university's academic administration should develop clear academic policies and guidelines for the educational use of ChatGPT and similar AI tools, so that students and faculty have a unified approach to their appropriate and ethical use. In addition, faculty should be provided with targeted capacity-building programs to integrate AI responsibly and

effectively into the teaching process. Finally, it is recommended that a pilot program for guided use of ChatGPT be implemented across several German-language subjects at Nangarhar University, and that its results be regularly evaluated to provide scientific evidence for future policies and the effective integration of artificial intelligence.

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Conflict of Interest Statement

The authors declare no relevant financial or non-financial conflicts of interest with respect to this manuscript.

References

Akhtar, I. (2024). Kardan Journal of Engineering and Technology (KJET). *Technology*, *6*(1), 1-13. https://api.kardan.edu.af/storage/files/Artificial%20Intelligence%20in%20Higher%20Education%20Mitigating%20Risks%20(Designed)%20done12012025123928.pdf

Akhtar, I., & Fikri, S. (2026). University Autonomy and SDG16 Implementation in De Facto States Evidence from Afghanistan. https://www.wecmelive.com/open-access/university-autonomy-and-sdg16-implementation-in-de-facto-states-evidence-from-afghanistan.pdf

Akhtar, I., Fikri, S., & Sekandary, M. I. (2025). 11. Education for Peace building: The. *Beyond Boundaries: The Future of World Research: Edition 4*, 174.

Arooje, R., & Burridge, N. (2021). School education in Afghanistan: Overcoming the challenges of a fragile state. In *Handbook of education systems in South Asia* (pp. 411-441). Singapore: Springer Singapore. https://opus.lib.uts.edu.au/bitstream/10453/140987/2/Arroje&BurridgeSchool+Education+AfghanistanDRAFT.pdf

Boyqulova, J. (2025). The Role of Artificial Intelligence in Foreign Language Learning. *International Journal of Language Learning and Applied Linguistics*, *4*(3), 61–66. https://e-scholar.org/pdf/4569/fulltext.pdf

Dempere, J., Modugu, K., Hesham, A., & Ramasamy, L. K. (2023, September). The impact of ChatGPT on higher education. In *Frontiers in education* (Vol. 8, p. 1206936). Frontiers Media SA. https://doi.org/10.3389/feduc.2023.1206936

Dou, A., Xu, W., Li, X., Zhang, S., & Zhang, J. (2025). Artificial intelligence in language learning: Bridging gaps, revealing patterns, and charting the future. *International Journal of Distance Education Technologies (IJDET)*, *23*(1), 1-24. https://www.igi-global.com/gateway/article/full-text-pdf/385045&riu=true

Fernández Cerero, J., Montenegro Rueda, M., Román Graván, P., & Fernández Batanero, J. M. (2025). ChatGPT as a Digital Tool in the Transformation of Digital Teaching Competence: A Systematic Review. *Technologies*, *13*(5), 205. https://doi.org/10.3390/technologies13050205

Fountoulakis, M.S. (2024). Evaluating the Impact of AI Tools on Language Proficiency and Intercultural Communication in Second Language Education. *International Journal of Second and Foreign Language Education*. https://www.diamondopen.com/journals/index.php/ijsfle/article/download/768/288

Godwin-Jones, R. (2024). Distributed agency in language learning and teaching through generative AI. *Language Learning & Technology, 28*(2), 4–31. https://hdl.handle.net/10125/73570

Jmaiel, H. A., Abukhait, R. O., Mohamed, A. M., Shaaban, T. S., Al-khresheh, M. H., & AL-Qadri, A. H. (2025). The role of ChatGPT in enhancing EFL students' ESP writing skills: an experimental study of gender and major differences. *Discover Education*, *4*(1), 240. https://doi.org/10.1007/s44217-025-00700-6

Lan, R. (2023). A Qualitative Study of Non-English Majors' Cognitive and Affective Strategies in Peer Review in Online Writing Assessment—Taking Iwrite as Example. *English Language Teaching and Linguistics Studies. 5*, 13. https://www.scholink.org/ojs/index.php/eltls/article/view/35690

Mahapatra, S. (2024). Impact of ChatGPT on ESL students' academic writing skills: A mixed methods intervention study. *Smart Learning Environments*, *11*(1), 9. https://link.springer.com/content/pdf/10.1186/s40561-024-00295-9.pdf

Naznin, K., Al Mahmud, A., Nguyen, M. T., & Chua, C. (2025). ChatGPT Integration in Higher Education for Personalized Learning, Academic Writing, and Coding Tasks: A Systematic Review. *Computers*, *14*(2), 53. https://doi.org/10.3390/computers14020053

Nguyen, L., Yuan, Z., & Seed, G. (2022). Building Educational Technologies for Code-Switching: Current Practices, Difficulties and Future Directions. *Languages*, *7*(3), 220. https://doi.org/10.3390/languages7030220

Rigopouli, K., Kotsifakos, D., & Psaromiligkos, Y. (2025). Vygotsky's Creativity Options and Ideas in 21st-Century Technology-Enhanced Learning Design. *Education Sciences*, *15*(2), 257. https://doi.org/10.3390/educsci15020257

Sahem, F. (2024). The Role of Artificial Intelligence in Language Learning Language. *Baghdad University (End of Course Paper). College of Arts*. https://www.researchgate.net/publication/385695728_The_Role_of_Artificial_Intelligence_in_Language_Learning

Seddik, M. E. (2025). The impact of AI-powered language learning tools on second language acquisition: A mixed-methods study. *The Impact of AI-Powered Language Learning Tools on Second Language*

Acquisition: A Mixed-Methods Study. https://alkindipublisher.com/index.php/ijllt/article/download/9015/7689

Stockwell, G., & Reinders, H. (2019). Technology, motivation and autonomy, and teacher psychology in language learning: Exploring the myths and possibilities. *Annual Review of Applied Linguistics*, *39*, 40-51. https://www.cambridge.org/core/journals/annual-review-of-applied-linguistics/article/technology-motivation-and-autonomy-and-teacher-psychology-in-language-learning-exploring-the-myths-and-possibilities/290524856878A7F04ECF2D71C79AB3AD

Vygotsky, L. S. (1978). *Mind in Society: Development of Higher Psychological Processes* (M. Cole, V. Jolm-Steiner, S. Scribner, & E. Souberman, Eds.). Harvard University Press. https://doi.org/10.2307/j.ctvjf9vz4

Zaki, M. S. (2023). *Factors Impeding the Learning of a Foreign Language in the Afghan School System* (Master's thesis, Istanbul Aydin University (Turkey)). https://acikarsiv.aydin.edu.tr/bitstream/11547/11048/1/10604543.pdf

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