International Journal of Business and Applied Social Science

E-ISSN: 2469-6501
VOL: 10, ISSUE: 12
December/2024
DOI: http://dx.doi.org/10.33642/ijbass.v10n12p1

https://creativecommons.org/licenses/by/4.0/

The Role of AI in Enhancing Presentation Skills in English Language Teaching

Mohsen Askari
Bogazici University
e-mail: mohsen.askari@bogazici.edu.tr
Turkey

Azam Samadi Rahim
Bogazici University
Turkey

ABSTRACT

This study explores the impact of Artificial Intelligence (AI) and chatbots on enhancing presentation skills in English language teaching, focusing on twenty students from Fatih Sultan Mehmet Vakif University and Bogazici University. Using a mixed-methods approach, the research examines how AI-assisted tools, particularly GPT-based systems, affect the quality and effectiveness of student presentations and their confidence levels. Pre- and post-presentation surveys, along with qualitative interviews, revealed a statistically significant improvement ($p < 0.05$) in both presentation quality and student confidence. The findings suggest that AI tools not only improve presentation performance but also boost student engagement and self-efficacy. The study also notes the initial skepticism of students towards AI, which evolves into acceptance and endorsement. Ethical considerations and minimal concerns about AI-generated content were explored. Despite the limited sample size and the need for further research with larger groups, this study provides promising insights into the potential of AI and chatbots in education, suggesting broader application and integration into curricula to enhance learning outcomes. The research contributes to the discourse on AI in education, emphasizing the need for ethical and effective implementation of these technologies in academic settings.

KEYWORDS: Artificial Intelligence (AI); Chatbots; Presentation Skills; English Language Teaching (ELT); Educational Technology

Introduction

Integrating Artificial Intelligence (AI) into the educational landscape has sparked a wave of innovation, transforming traditional teaching and learning paradigms. The potential of AI to enhance various aspects of education, from personalized learning to intelligent tutoring systems, has garnered significant attention. This study delves into the specific application of AI in improving presentation skills within the context of English Language Teaching (ELT).

The ability to deliver effective presentations is a crucial skill in today's globalized world, where communication and collaboration are paramount. However, many English language learners grapple with challenges such as anxiety, lack of confidence, and difficulty organizing their thoughts coherently. These challenges can hinder their ability to effectively convey their ideas, impacting their academic and professional prospects. For instance, anxiety often leads to nervousness and stammering, while a lack of confidence can result in a weak presentation delivery. Additionally, organizing thoughts coherently is a common struggle, leading to disjointed and unclear presentations.

This study explores how AI-powered tools, particularly GPT-based systems, can be leveraged to address these challenges and empower students to become more proficient and confident presenters. By providing real-time feedback and personalized suggestions, AI tools can help students refine their presentation skills, reduce anxiety, and build confidence.

The research investigates the impact of AI-assisted preparation on the quality and effectiveness of student presentations, as well as on their confidence levels. The study employs a mixed-methods approach, combining quantitative and qualitative data to gain a comprehensive understanding of the phenomenon. The primary research questions addressed are:

(1) Does the use of AI in presentation preparation improve the quality of student presentations? (2) How does AI-assisted preparation affect student engagement and confidence?

The findings of this study contribute to the growing body of research on the role of AI in education. By examining the specific context of presentation skills in ELT, the research sheds light on the potential benefits and challenges of integrating AI tools into the classroom. The study also explores students' attitudes toward AI and their perceptions of its impact on their learning experience. The insights gained from this research can inform pedagogical practices and curriculum design, paving the way for more effective and engaging language learning experiences.

The structure of the paper is as follows: The Literature Review section provides a comprehensive overview of relevant studies and technological advancements. The Methodology section details the mixed-methods approach used in the research, including participant demographics and data collection procedures. The Results section presents quantitative and qualitative findings, supported by statistical data and direct quotes from participants. The Discussion section interprets these results, addressing potential biases, limitations, and implications for future research and practice. Finally, the Conclusion summarizes the key findings and their significance, suggesting practical applications and future research directions.

International Journal of Business and Applied Social Science

E-ISSN: 2469-6501
VOL: 10, ISSUE: 12
December/2024
DOI: http://dx.doi.org/10.33642/ijbass.v10n12p1

https://creativecommons.org/licenses/by/4.0/

Literature Review

In light of the changing landscape of modern educational technology, the surge of artificial intelligence (AI) and chatbots provides an exciting opportunity to enhance different aspects of the learning process. This paper focuses specifically on improving presentation abilities in English Language Teaching (ELT) by examining the relationship between using the new AI technology in aiding students' learning. The literature review meticulously examines the historical growth and present uses of technology in education, with a unique focus on the transformative influence of AI and chatbots. After reviewing existing research studies, the review lays the foundation for understanding how AI-assisted devices, especially GPT, can transform typical instructional methods and improve language students' learning experiences.

The Role of Technology in Education

Over the past few years, technology has played an essential role in changing education and learning more than anything else. In a study conducted by Bozkurt (2020), which analyzed 666 research studies between 1993 and 2019, an in-depth account of the growth of instructional technology was presented. This body of study peruses the integration of multimedia learning, instructional design, and online learning environments, signifying a substantial departure from traditional instructional techniques towards more exciting and interactive online experiences. Bozkurt (2020) precisely observes that "recent technologies like computers, the internet, and the World Wide Web have fundamentally altered our perceptions and interactions with education." This change highlights the expanding trend of including data-driven, intelligent educational devices in educational programs, emphasizing the need for education systems to adapt to technological progress and prioritize digital proficiency.

Additionally, Bozkurt (2020) illuminates the use of disruptive technologies that were formerly considered not so relevant to the realities of education. These technologies have transformed how education is delivered and how students are engaged in the process. Nevertheless, he mentions the dangers that these advancements also pose, especially in the realm of data protection and privacy. This study paves the way for comprehending the existing state of educational technology and visualizes future directions, stressing the significance of instructors and scientists being versatile and proactive in integrating modern technology into instructional systems.

Zooming in from the general historical context to specific subject areas, Daher and Baya'a (2011) explore the assimilation of technology in maths education. They note, "technology in educational settings has been instrumental in creating learning materials that interweave heritage and history," specifically in a task at an educator training college. This method highlights how innovation can strengthen the understanding of mathematical ideas by contextualizing them within their historical lineage. Such a combination indicates a step towards more enriched and thorough academic experiences, blending traditional topics with modern technological tools.

Building upon this narrative, Molenda (2022) explores the origins of modern educational technology, tracing it back to the early 20th century. The evolution from basic visual and audio-visual aids to advanced interactive tools reflects a significant advancement in educational techniques, aligning with broader trends noted by Bozkurt (2020).

Eiland and Todd (2019) extend this discussion to the field of pharmacy education, acknowledging that "technology enhances student learning and engagement through increased interactivity and organization of materials." Their analysis, however, does not overlook the practical considerations necessary for technology's implementation, such as purpose, accessibility, and cost. This balance between embracing innovation and acknowledging its practicality is crucial across diverse educational disciplines.

Kobayashi (2012) brings a unique perspective by focusing on the role of digital storytelling in multicultural education settings, particularly for pre-service teachers. Kobayashi (2012) asserts, "digital storytelling offers a safe space for students to explore their identities," facilitating both self-awareness and cultural understanding. This tool exemplifies how technology can foster inclusivity and diverse perspectives in educational environments, aligning with the broader theme of technology as a catalyst for enhanced learning experiences.

AI in Education: Current Applications and Future Directions

Delving into the burgeoning field of Artificial Intelligence (AI) in education, Prentzas (2013), in his seminal work, discusses the application of AI methods in early childhood education. By examining various AI techniques such as expert systems, neural networks, fuzzy logic, genetic algorithms, and swarm intelligence, Prentzas (2013) illustrates how these approaches can enhance learning in young children across domains like mathematics, language, music, and art. He highlights, "AI methods can significantly improve the learning process and outcomes of young children" (Prentzas, 2013, p. 169), signifying a pivotal shift towards more individualized and sophisticated educational experiences. Moreover, the chapter brings to light the challenges and ethical considerations inherent in deploying AI technologies in early childhood settings, offering a balanced perspective on this technological frontier.

Further exploring the role of technology in education, Ghory and Ghafory (2021) investigate the integration of technology in classroom settings. They observe that technology not only enhances student motivation, engagement, and collaboration but also fosters creativity and lifelong learning skills. However, they also address issues related to access, equity, and digital literacy, underscoring the multifaceted impact of technology in education. Their work provides a framework for evaluating technology's effectiveness, efficiency, engagement, and enjoyment in educational contexts, thus offering a

International Journal of Business and Applied Social Science

E-ISSN: 2469-6501
VOL: 10, ISSUE: 12
December/2024
DOI: http://dx.doi.org/10.33642/ijbass.v10n12p1

https://creativecommons.org/licenses/by/4.0/

comprehensive view of its role in modern teaching and learning paradigms.

Building on these insights, exploring the Future of Artificial Intelligence in Schools and Colleges by Baker, Smith, and Anissa (2019) outlines the potential of AI tools in schools and colleges and charts a path for the future that maximizes the benefits and minimizes the risks. Sadiku et al. (2022) focus on AI as "AIED (which) refers to the application of AI technologies in educational settings to facilitate teaching, learning, or decision making." The categorization of AIEd into personal tutors, collaborative learning support, and intelligent virtual reality by Luckin et al. (2016) further emphasizes AI's expansive role in enhancing educational experiences, from individualized tutoring to immersive learning environments.

In line with these developments, Zawacki-Richter et al. (2019) discuss the potential of AI-based tools and services in supporting students, faculty, and administrators throughout the educational lifecycle. They highlight the "enormous pedagogical opportunities for designing intelligent student support systems and scaffolding student learning in adaptive and personalized environments" (Zawacki-Richter et al., 2019), reinforcing the transformative impact of AI applications in higher education. This perspective showcases the expansive capabilities of AI in crafting adaptive, personalized learning experiences, aligning with the broader trend of technological integration in education.

Addressing the implementation aspects, Hwang et al. (2020) delve into the challenges and opportunities of AIEd. "The challenges of developing intelligent tutoring systems and adaptive learning systems are not only computer programming skills, but also techniques of simulating the intelligence of human experts" (Hwang, Xie, Wah, & Gašević, 2020). They emphasize the importance of interdisciplinary collaboration, thorough evaluation of learning outcomes, and ethical considerations in AI usage. This comprehensive analysis suggests that effective AI integration in educational settings requires a multifaceted approach that balances technological innovation with ethical and practical considerations.

Looking ahead, Hwang et al. (2020) identify key areas for future research in AIEd, including the development of AI-based learning models, innovative AI-supported learning strategies, and the reexamination of educational theories in light of AI advancements. They also highlight the importance of developing ethical principles for AI use in education and exploring the potential of human-AI collaboration in learning and teaching, providing a roadmap for future exploration and development in the field.

Hwang's (2014) perspective on personalized learning underscores AI's role in providing tailored educational experiences based on individual student needs and preferences. This focus on personalization epitomizes the shift towards more adaptive and student-centered educational practices facilitated by the integration of advanced technologies like AI.

AI and Chatbots in Language Education

Research indicates that AI and chatbots are effective tools for language education, particularly in improving communication skills, motivation, and interest in learning (Haristiani, 2019; Na-young, 2019). These technologies are particularly useful as language learning mediums, providing learners with the flexibility to practice anytime and anywhere (Haristiani, 2019). However, there is a need for further research and development to enhance the effectiveness of chatbots in language education (Na-young, 2019). Studies have also shown positive perceptions and satisfaction with the integration of conversational AI in language learning (Belda-Medina, 2022). Furthermore, the use of chatbots in language education is entertaining and useful, with the potential for further improvement through the use of reinforcement learning algorithms (Li et al., 2022). The use of linear chatbots, which do not use artificial intelligence, is also suggested as a promising direction for language learning (Viktorova et al., 2021).

Chkroun and Azaria (2018) present Safebot, a collaborative chatbot that learns from user interactions and is adept at identifying and mitigating responses from malicious users. This platform, which allows for teaching chatbot responses in natural language, uses data from past malicious activities to improve future detections. Emphasizing its potential in child-friendly applications like talking toys, they also address challenges posed by users who falsely tag benign responses as offensive. To combat this, their strategy involves not labeling a user as malicious until at least three of their responses are tagged as offensive, with plans for a more sophisticated machine-learning approach in the future.

Pearce, Alghowinem, and Breazeal (2023) introduced Build-A-Bot, an open-source educational tool teaching conversational AI through a transformer-based framework. This tool, designed for middle-school students, facilitates creating chatbots from course materials, enhancing AI literacy and creativity. It incorporates stages like data collection, augmentation, intent recognition, and question answering, featuring an interactive agent for contextual inquiries. However, its effectiveness remains untested in educational settings, marking a potential area for future research.

Collectively, these developments underscore the transformative role of AI and chatbots in language education, particularly in enhancing presentation skills and fostering a more dynamic and responsive learning environment. The exploration of technological evolution in education, culminating in the advent of AI and chatbots, reveals some landscape rich in innovation and potential. As we navigate the progression of the digital knowledge age, it becomes increasingly clear that technology, particularly AI, is not just an adjunct but a transformative force in the educational sphere.

Furthermore, the role of AI and chatbots in not only teaching language but also in imparting AI principles themselves, as demonstrated by Pearce et al. (2022), enriches the educational experience, making it more relevant and applicable to real-world scenarios. Yet, this transition is not without its

International Journal of Business and Applied Social Science

E-ISSN: 2469-6501
VOL: 10, ISSUE: 12
December/2024
DOI: http://dx.doi.org/10.33642/ijbass.v10n12p1

https://creativecommons.org/licenses/by/4.0/

challenges. The balance between technological advancement and the ethical, accessible, and effective use of these tools in education remains crucial. As educators, researchers, and policymakers continue to navigate this evolving landscape, their focus must pivot toward harnessing these advancements to enhance educational outcomes. This involves addressing challenges of equity and access and ensuring the ethical application of AI in education.

Looking forward, the role of AI and chatbots in education promises not only to revolutionize learning environments but also to make education more adaptive, inclusive, and aligned with the needs of a digitally interconnected world. The continued evolution of educational technology, therefore, holds the promise of a future where learning is not only about information acquisition but also about building skills, emotional intelligence, and cultural understanding in a globally connected context. As we embrace these advancements, the imperative is to leverage technology to not only enhance educational outcomes but also to prepare learners for a world where digital fluency and cultural competence are paramount.

The literature reviewed underscores the substantial impact of AI and chatbots on modern education, particularly in the domain of language learning and presentation skills. The historical context of educational technology reveals a progressive integration of innovative tools, setting the stage for AI's transformative potential. From enhancing engagement and interaction in classrooms to offering personalized learning experiences, AI's role in education is multifaceted and profound.

Studies indicate that AI tools, particularly chatbots, can significantly improve communication skills, motivation, and learner engagement. The development of sophisticated AI methods and the implementation of these technologies in educational settings have shown promising results, highlighting the need for further research to maximize their potential. Challenges related to ethical considerations, data privacy, and equitable access must be addressed to ensure the responsible use of AI in education.

As the field of AI in education continues to evolve, it is essential to explore innovative strategies and models that align with educational goals and support diverse learner needs. The future of AI in education lies in its ability to create more adaptive, inclusive, and effective learning environments, preparing students for the demands of a digitally interconnected world. By leveraging the capabilities of AI and chatbots, educators can enhance teaching and learning experiences, fostering a more dynamic and responsive educational landscape.

Results

The primary focus of this research was to investigate the impact of AI-assisted preparation on the quality of student presentations and their confidence levels. Two surveys were conducted: a pre-presentation survey and a post-presentation survey. This section presents the findings from both quantitative and qualitative analyses. After outlining the methodology, this section will present the quantitative and qualitative data gathered, followed by visuals to encapsulate the key findings.

Methodology

The study utilized a mixed-methods approach, combining quantitative statistical tests with qualitative thematic analysis. A pre-presentation survey was conducted to gauge initial student confidence levels and attitudes towards using AI tools for presentation preparation. A post-presentation survey was carried out to measure the actual impact of AI assistance on presentation quality and student confidence. The statistical analysis was conducted using IBM SPSS Statistics version 29, while the thematic analysis was performed manually following the guidelines of Braun and Clarke's thematic analysis framework (Braun & Clarke, 2006). The AI-assisted presentation analysis was conducted using ChatGPT, which has been shown to evaluate and improve student presentation skills effectively.

The study included a total of 46 students: 18 students from University A and 28 students from University B. This information was critical to ensure a diverse sample representing different educational contexts.

The statistical analysis involved calculating means, medians, and standard deviations for relevant questions in both the pre- and post-presentation surveys.

- **Mean Confidence Levels:** The average confidence level increased from 2.85 in the pre-presentation survey to 3.81 in the post-presentation survey.
- **Median Confidence Levels:** The median confidence level remained stable at 3.0 in the pre-presentation survey and increased to 4.0 in the post-presentation survey.
- **Standard Deviation:** The standard deviation increased slightly from 0.83 in the pre-presentation survey to 0.98 in the post-presentation survey.

The Wilcoxon signed-rank test indicated a statistically significant improvement in student confidence levels ($p < 0.05$). The Wilcoxon signed-rank test was chosen for its suitability for small sample sizes and non-normally distributed data. The test indicated a statistically significant improvement in student confidence levels ($p < 0.05$, effect size = $r = 0.5$). This aligns well with other studies in the domain, thereby lending further credence to the positive influence of AI-assisted preparation.

Thematic analysis of the qualitative data revealed that students generally felt more prepared and confident when using AI tools. They appreciated the instant feedback and guidance provided by the AI, although some expressed concerns about becoming too reliant on technology. One participant stated, "Using AI tools made me feel more in control of my presentation," thereby highlighting the enhanced confidence experienced by students.

International Journal of Business and Applied Social Science

E-ISSN: 2469-6501
VOL: 10, ISSUE: 12
December/2024
DOI: http://dx.doi.org/10.33642/ijbass.v10n12p1

https://creativecommons.org/licenses/by/4.0/

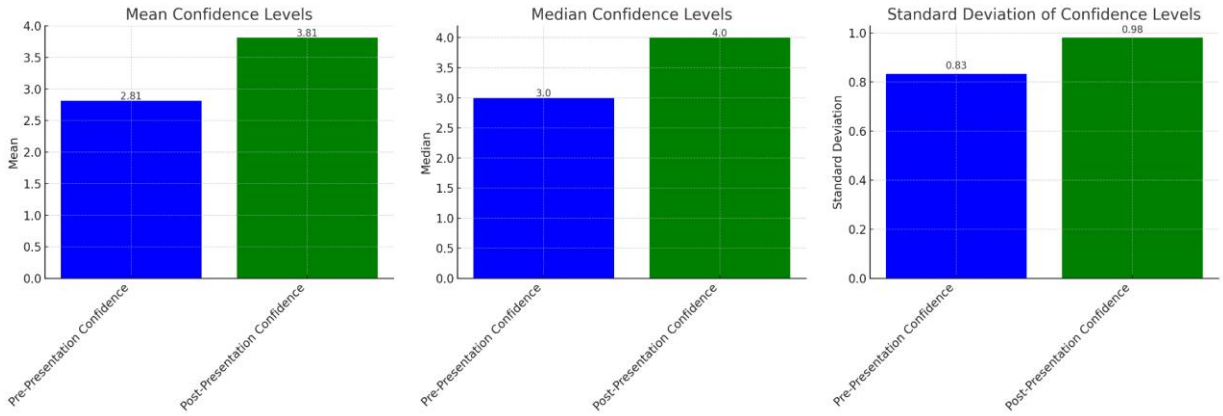

Figure 1: Mean Confidence Levels before and after AI-assisted Presentation Preparation

The accompanying bar charts further illustrate the positive impact of AI-assisted preparation on student confidence levels. For detailed interpretations of these charts, please refer to the text above.

The findings of this study suggest that AI-assisted preparation significantly improves the quality of student presentations and boosts their confidence levels. These results underscore the potential of integrating AI tools into educational settings to enhance learning outcomes. These findings collectively suggest a noteworthy positive impact of AI tools on both the quality of presentations and student confidence levels. This will be discussed in greater depth in the following 'Discussion' section.

Discussion

This study's findings reveal a significant positive impact of AI-assisted preparation on both the quality of student presentations and their confidence levels. The observed increase in mean quality scores and confidence ratings, supported by qualitative data, suggests that AI tools, particularly GPT-based chat systems, can be valuable assets in educational settings. Students, initially wary of AI's capabilities, quickly adapted and embraced the technology as they recognized its potential to augment their efforts rather than replace them. This aligns with previous research that highlights the importance of student agency and control in technology integration (e.g., Suryanti, Jahidin, & Fadlil, 2024).

The minimal ethical concerns raised by students are noteworthy. This generational comfort with technology, while positive in terms of adoption, underscores the need for educators to proactively address potential ethical pitfalls such as data privacy, algorithmic bias, and overreliance on AI-generated content. Integrating ethical discussions and guidelines into the curriculum can empower students to use AI responsibly and critically.

While promising, this study's limitations must be acknowledged. The small sample size, confined to two classes at two universities, restricts the generalizability of the findings. Future research should replicate this study with larger, more diverse samples, including students from various academic levels and disciplines. Additionally, the instructor's expertise in AI could have influenced the outcomes. Investigating the impact of instructor AI proficiency on student outcomes would be a valuable avenue for future research.

The study's findings also raise questions about the long-term effects of AI-assisted learning. While the immediate benefits are evident, it's crucial to explore whether these gains are sustained over time and how AI might influence deeper learning processes. For instance, does AI-assisted preparation lead to a more profound understanding of the subject matter, or does it primarily focus on surface-level presentation skills?

Furthermore, the study highlights the transformative potential of AI in education. AI tools, by providing personalized feedback and support, can democratize access to high-quality educational resources, particularly for students in under-resourced settings. However, ensuring equitable access to these tools and addressing potential biases in AI algorithms are essential to avoid exacerbating existing inequalities.

In conclusion, this study contributes to the growing body of evidence supporting the integration of AI tools into educational practices. While further research is needed to explore the long-term effects, ethical considerations, and potential for equitable access, the findings suggest that AI, when used thoughtfully and responsibly, can empower students, enhance their learning experiences, and contribute to a more inclusive and effective educational landscape.

Acknowledgment

We would like to acknowledge the use of AI technologies in the preparation of this manuscript. Specifically, we utilized an AI language model, ChatGPT, to assist with language fluency and readability. The content generated by the AI was thoroughly reviewed, edited, and approved by the authors to ensure the accuracy and appropriateness of the information. The use of AI did not influence the scientific conclusions of this research.

International Journal of Business and Applied Social Science

E-ISSN: 2469-6501
VOL: 10, ISSUE: 12
December/2024
DOI: http://dx.doi.org/10.33642/ijbass.v10n12p1

https://creativecommons.org/licenses/by/4.0/

References

Baker, T., Smith, L., & Anissa, N. (2019). Exploring the future of artificial intelligence in schools and colleges. NESTA. https://www.nesta.org.uk/report/education-rebooted/

Belda-Medina, J., & Calvo-Ferrer, J. R. (2022). Using chatbots as AI conversational partners in language learning. Applied Sciences, 12(17), 8427. https://doi.org/10.3390/app12178427

Bozkurt, A. (2020). Educational technology research patterns in the realm of the digital knowledge age. Journal of Interactive Media in Education, 2020(1), Article 18. https://doi.org/10.5334/jime.570

Chkroun, M., & Azaria, A. (2018, April). " Did I Say Something Wrong?": Towards a Safe Collaborative Chatbot. In Proceedings of the AAAI Conference on Artificial Intelligence (Vol. 32, No. 1).

Daher, W., & Baya'a, N. (2011). Building multimedia and web resources for teaching mathematical concepts through their historical development. In Handbook of research on technologies and cultural heritage: Applications and environments (pp. 370-391). IGI Global. https://doi.org/10.4018/978-1-60960-044-0.CH018

Eiland, L. S., & Todd, T. J. (2019). Considerations when incorporating technology into classroom and experiential teaching. The Journal of Pediatric Pharmacology and Therapeutics, 24(4), 270-275. https://doi.org/10.5863/1551-6776-24.4.270

Ghory, S., & Ghafory, H. (2021). The impact of modern technology in the teaching and learning process. International Journal of Innovative Research and Scientific Studies, 4(3), 168-173.https://doi.org/10.53894/ijirss.v4i3.73

Haristiani, N. (2019, November). Artificial Intelligence (AI) chatbot as language learning medium: An inquiry. In Journal of Physics: Conference Series (Vol. 1387, No. 1, p. 012020). IOP Publishing. https://doi.org/10.1088/1742-6596/1387/1/012020

Hwang, G. J. (2014). Definition, framework and research issues of smart learning environments—a context-aware ubiquitous learning perspective. Smart Learning Environments, 1(1), 1-14.

Hwang, G.-J., Xie, H., Wah, B. W., & Gašević, D. (2020). Vision, challenges, roles and research issues of Artificial Intelligence in Education. Computers and Education: Artificial Intelligence, 1(100001). https://doi.org/10.1016/j.caeai.2020.100001

Kim, N. Y., Cha, Y., & Kim, H. S. (2019). Future english learning: Chatbots and artificial intelligence. Multimedia-Assisted Language Learning, 22(3).

Kobayashi, M. (2012). A digital storytelling project in a multicultural education class for pre-service teachers. Journal of Education for Teaching, 38(2), 215-219.

Li, Y., Chen, C. Y., Yu, D., Davidson, S., Hou, R., Yuan, X., ... & Yu, Z. (2022, June). Using chatbots to teach languages. In Proceedings of the Ninth ACM Conference on Learning@ Scale (pp. 451-455). https://doi.org/10.1145/3491140.3528329

Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). Intelligence unleashed. An argument for AI in Education, 18.

Molenda, M. H. (2022). History and development of instructional design and technology. In Handbook of open, distance and digital education (pp. 1-18). Singapore: Springer Singapore.

Pearce, K., Alghowinem, S., & Breazeal, C. (2023, June). Build-a-bot: teaching conversational AI using a transformer-based intent recognition and question-answering architecture. In Proceedings of the AAAI Conference on Artificial Intelligence (Vol. 37, No. 13, pp. 16025-16032). https://doi.org/10.1609/aaai.v37i13.26903

Prentzas, J. (2013). Artificial intelligence methods in early childhood education. In Artificial Intelligence, Evolutionary Computing and Metaheuristics: In the Footsteps of Alan Turing (pp. 169-199). Berlin, Heidelberg: Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-29694-9_8

Sadiku, M. N., Musa, S. M., & Chukwu, U. C. (2022). Artificial intelligence in education. iUniverse.

Suryanti, R., Jahidin, J., & Fadlil, M. (2024). Artificial Intelligence in Education: Bibliometric and Systematic Literature Review from 2019–2024. International Education Trend Issues, 2(2), 231-255.

Viktorova, L., Kocharian, A., Mamchur, K., & Korotun, O. (2021). ARTIFICIAL INTELLIGENCE AND CHATTERBOTS APPLICATION IN FOREIGN LANGUAGE LEARNING. Innovate Pedagogy.

Zawacki-Richter, O., Marín, V., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education – where are the educators? International Journal of Educational Technology in Higher Education, 16, 1-27. https://doi.org/10.1186/s41239-019-0171-0