

ARTIFICIAL INTELLIGENCE TOOLS IN WRITING CLASS: STUDENTS' PREFERENCES AND LECTURERS' PERCEPTIONS

Irma Suryani^{1*}, Rahma Fithriani²

¹irma0304203089@uinsu.ac.id, ²rahmahfithriani@uinsu.ac.id

UNIVERSITAS ISLAM NEGERI SUMATERA UTARA

ABSTRACT

One of the benefits of artificial intelligence in the field of education is that it aids in writing. The aims of this research are to explore University students' preferences in using AI for writing and investigate lecturers' perceptions regarding the use of artificial intelligence tools in EFL writing class. Qualitative research methods with case study design employed in this study. The data was collected by using questionnaires and interview. Ten EFL students and three lecturers from three different universities in Indonesia were involved as the respondents of this research. The findings revealed that there are nine types of AI tools used by students in writing classes such as Quillbot, Grammarly, Chat GPT, Humata AI, Resume AI, Jenni AI, Perplexity, Deapl, and AI writing. Apart from that, the data also revealed the views of the lecturers on the use of AI. The data showed that AI writing tool have the influences on students' writing that the use of AI has received positive responses. Therefore, it can be inferred that Artificial Intelligence tools can be used in writing classes as long as it does not violate code in writing and not dependency.

Keywords: Artificial Intelligence tools, Higher education, Impact, Perception, Writing class

A. INTRODUCTION

In this increasingly sophisticated era, students know more about the use of technology enhanced tools that can make it easier for them to write. Recently, artificial intelligence (AI-generated) has become popular among students. Previously, AI was only used to edit or correct writing. As AI technology advances, it can produce what we instruct. AI may generate textual material, including poetry (Köbis & Mossink, 2021), political remarks (Bullock & Luengo-Oroz, 2019), and educational works (Hu, 2023), which is challenging to differentiate features of human-generated material. New and sophisticated things like AI are bringing changes to a new era of development and technology, including in the field of education. AI has effectively solved complicated issues in several sectors, especially education (Ouyang et al., 2022). Even though this is something new, AI has good potential for students. These tools include Chat GPT and programmed applications that can create written works such as essays. These AI tools are very easy to use and do not waste a lot of time or drain energy (Chang et al., 2021; Gayed et al., 2022; Jeanjaroonsri, 2023; Zhao, 2022). Just by relying on the internet, students can use it and produce good writing.

The application of AI as a writing tool is able to carry out the tasks ordered. Like QuillBot, this is a tool that cannot produce its own writing, but must be based on existing writing and then improves it. Discovered that QuillBot improved students' paraphrasing skills, which is crucial for academic writing (Kurniati & Fithriani, 2022). Meanwhile, AI itself can produce writing according to what we want, one of which is Chat GPT. Chat GPT can provide individualized replies based on the context of a request (Haque et al., 2022). Chat GPT tends to show that it can contribute to student writing. However, there are also concerns about its use, such as plagiarism. This Chat GPT capability can have an impact on student writing, whether it is a good or bad effect. In writing activities, students do need writing skills. Even though there are students who have high writing skills, there are also those who experience difficulties (Defazio et al., 2010). If students in college are not good at writing, they will have difficulties in their education, because most of the assessments in college are based on writing. Writing is still a challenge for some students. As mentioned by Rusinovci (2015) that students' writing performance is worse when compared with their improvement in other subjects. For this reason, the use of AI writing tools has become a solution used by EFL students with low English language skills. By using this tool, students can get immediate help and accurate answers. Accurate here means according to what is asked by the AI tool. In terms of content and writing structure, there is research showing that this AI tool can be seen as efficient and the quality of the work is significantly more. AI tools, such as GPT-3, have been used to suggest the next word or even paragraph in a text, making the writing appear human-made (Zhang et al., 2023).

More and more researches have been conducted related to how these writing tools like AI impact students' writing skills. There are several studies showing that AI tool can improve their writing skills (Kurniati & Fithriani, 2022; Zhao, 2022), while there are also other studies that revealed the role of artificial intelligence on higher education (Talan & Kalinkara, 2023). Furthermore, previous studies also discussed the influence of these tools on students' writing regarding content and organization (Marzuki et al., 2023). Despite the prevalence of studies focusing on AI tools, usually the focus is on how students' writing can be better. There are still very few who focus on progress in its use in the writing classroom, and what is the potential for its use in English writing classrooms, it is necessary to find out the lecturers' perceptions of this AI tool. This is because Chat GPT capability is one of the things that are still controversial in its use; there are some who agree and some who don't. Therefore, the aims of this research are to explore the use of this AI tool in writing classes conducted by students and to investigate the perceptions of lecturers towards the use of AI tools in writing class.

B. METHOD

This research used qualitative methods. Meanwhile, the design used is a case study. Case studies are empirical investigations that investigate contemporary phenomena within the framework of real-life situations (Yin, 2009). Through the research methodology used, researchers can explore in depth the types of AI for writing assistance tools used by students, as well as focus on lecturers' perceptions about the impact of these tools on the quality of students' writing and whether the application is allowed to be used. The research was carried out at a governmental university in North Sumatra. Ten undergraduate students majoring in English were selected to take part in this research. Experienced lecturers proficient in AI writing tools, particularly Chat GPT, are engaged to assess the usage of this tool in student writing. One male and two female lecturers will be hired from various university institutions.

Their observations were derived from their hands-on experience with AI writing tools in an educational setting. Recruited lecturers must possess a minimum of two years of experience in teaching writing courses. Participants were chosen based on purposive sampling approaches that are compatible with this study. The sample meets the research requirements due to their proficiency in utilizing AI technologies. In simple terms, the researchers made a deliberate choice to identify and select an individual who possesses the necessary expertise or experience to offer information (Bernard 2002; Lewis & Sheppard 2006).

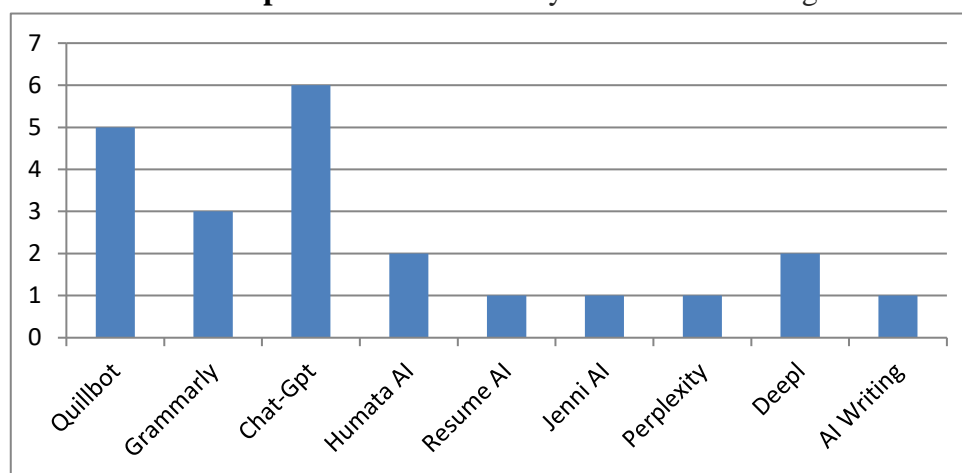
The instruments used to collect data were questionnaires and direct interviews. Questionnaires can reveal patterns in large populations, qualitative interviews offer a deeper understanding of individuals' attitudes, beliefs, and actions (Kendall, 2014). A questionnaire with open questions was given to get results from various AI tools used by students. And the questionnaire was used directly so that the data obtained was clearer. Meanwhile, the interview process was carried out to dig deeper into the participants' answers. This instrument allows researchers to obtain qualitative data regarding the use of AI writing tools and their perceptions of the impact on students' writing. Questionnaire data collection was carried out by distributing questions to participants, using a Google form. Meanwhile, interviews were conducted in several places that had been promised and agreed upon by both parties. The language used is Indonesian to make it easier to filter the data obtained. The time required for the interview process for each participant is around 20-40 minutes.

In analyzing the data, the researchers applied thematic analysis. Thematic analysis is the identification of patterns or themes within qualitative data (Braun & Clarke, 2006). In the first step, researchers looked at the data results from students and then grouped them into several parts to get more optimal results. After that, the researcher linked it to the lecturer's perception of the tool. For the interview process, the researcher listened to the results of the recorded interview several times. Then, convert the recording into text so that it is easier to read and understand the contents. The second step then involved developing initial codes and grouping words and phrases related to this research. In the third step, here the researchers analyzed these codes in detail, then groups them into each word. After that, the researchers also compared the results to identify any relationships or patterns. The final step, the researchers determined a series of categories from these grouped codes.

C. FINDINGS AND DISCUSSION

1. Types of AI tools used by the students

Based on the results of the responses to the questionnaire taken by 10 student participants regarding the AI tools they often use, they are attached in graphic form to make it clearer. The use of AI tools used by students is varied and different. All the AI tools they use depend on their needs. Students are asked to name the applications or websites they use to help them in writing class. (See Graph 1 for more details).

Graphic1. AI tools used by students in Writing.

The data from questionnaire showed that there are nine types of AI tools that are often used by students. Shown in Graph 1 includes the names of AI tools utilized by students, namely Quillbot, Grammarly, Chat GPT, Humata AI, Jenni AI, Perplexity, DeepL, AI Writing. Students are more likely to utilize Chat GPT as a tool to assist them with their writing. The presentation featured six participants who picked Chat GPT as a method of honing their intended responses. This relatively simple access to information is a compelling reason for students to utilize Chat GPT. Another reason why this is a more efficient tool than other AI tools is that if use Chat GPT, the pre-programmed application will quickly deliver textual responses, and capable of quickly finding and summarizing important details. According to the researcher's findings, more pupils will use Chat GPT as a writing tool. Chat GPT is the most extensively utilized because it may supply information that can enhance student understanding. When compared to alternative technologies, the majority of students utilize Chat GPT as their primary means of obtaining desired information. Chat GPT has the ability to provide responses with various tones and structures, which may be tailored to suit the preferences and requirements of the user (Aljanabi, 2023).

This AI tool contains several categories, QuillBot is the second favorite writing tool among students. Unlike the Chat GPT function, which can provide answers directly to what we instruct, when using QuillBot, we can only submit our writing, and then the machine will work to paraphrase the results of the writing, so this is an interesting choice for student writing to avoid plagiarism. Another function of QuillBot is not just to paraphrase writing but more broadly, such as seeing the grammar in the sentence and whether it is correct or not. And can summarize long texts into what we want and one more advantage of this tool is that it acts as a translator between one language and another. AI tools, which have many advantages, are the basis for students to improve their writing. This argument is correct because QuillBot is widely utilized by students as a tool to enhance their writing. Quillbot eliminates the challenge of addressing plagiarism in academic writing for pupils. Hence, by utilizing the QuillBot application, people may enhance their writing efficiency and achieve superior outcomes (Kurniati & Fithriani, 2022).

Furthermore, the data also showed that the AI tool used to find grammatical errors also has Grammarly as a student choice (see Graph 1). It seems that this tool is also often used by them in helping and providing choice options for correcting vocabulary or sentences. Grammarly plays an important role in correcting and presenting writing properly. Basically,

students who tend to have difficulty knowing grammar correctly will open this Grammarly web to help them. The feedback obtained from Grammarly will have an impact on student writing. Grammarly and QuillBot are on the same level and have similarities in improving writing. Some students who have used QuillBot also use Grammarly to improve their writing. They also compared the better writing after using both AI tools and decided to use the more accurate writing results.

Furthermore, Humata AI and DeepL were used by the 2 participants. Humata AI is known for its ability to summarize long documents and review journals, compared to Chat GPT. Humata AI offers the ability to analyze and understand long documents more quickly. Using it is quite simple, users can upload documents that they want to analyze, and this feature can also perform questions and answers as desired and generate new writings from existing documents. On the other hand, DeepL is one of the most accurate translation tools, used by students to transfer one language to another. DeepL is similar to Google Translate as a tool used to translate English texts. However, most people find that DeepL's translations are more accurate and natural-sounding. Therefore, DeepL is definitely often used in translating texts and also for knowing languages that are difficult to understand.

Moreover, there are four AI tools such as Resume AI, Jenni AI, Perplexity AI, and AI Writing, which have been used by the four participants. Resume AI makes it easy to create a resume of a text, like QuillBot, which has the same features, but this AI Resume can be used to create application letters. As for Jenni AI, Perplexity and Chat GPT have little similarity in being able to respond to a question and provide an answer quickly. The Jenni AI feature can help answer student questions with a deeper explanation. In addition, another benefit is that it can easily create essays and make interesting speeches in a short time. If perplexity is also like that, on this web it also attaches the source where it was obtained from. Thus, from the answers that are produced, students can see the source at the same time. For the AI writing tool, it is also at the same level as Jenni AI, which can produce writing and create unique texts.

Students can make the best use of various kinds of tools according to their individual needs. Thus, the existence of AI technology makes it possible for students to know more about the use of AI tools. As supported by Chiu (2023) that students must have the technical and cognitive abilities to access, evaluate and use the information needed by making the best use of digital media platforms for a task when accessing and learning with GenAI. Then what they get from using this AI tool is that it makes writing easier, which indirectly will increase their level of confidence in writing. It is in line with the statement of Mokmin (2020) that feedback enabled by AI learning systems improves students' problem solving skills. Therefore, it can be inferred that nine types of AI used by the students have a positive impact on students' writing skills.

2. Lecturers' perceptions toward the Use of AI

The influence of AI on students' vocabulary and language structure

One of the findings derived from the collected interview data shows that lecturers perceive AI to have an impact on students' writing in terms of vocabulary and language usage. The benefits of AI as a tool for student academic assistance whether or not it influences writing results can be seen in the answers from lecturers as follows:

"It has a big impact on students' writing, but it depends on how it is used. The influence is on vocabulary and language structure in accordance with grammatical norms." (P1)

"Yes, it affects students' vocabulary and writing quality..." (P2)

The data above showed P2 has the same opinion as P1 that there are many kinds of AI tools that the impact of on their writing. Their writings are more organized and adheres to good syntax. This indicates that the use of AI help students in writing English with correct grammar. It is in line with Kurniati & Fithriani (2022) that AI tool can improve their writing skills.

AI can be utilized as an effective teaching assistant

The use of AI also can help to enhance students' understanding and engagement through personalized feedback as stated by P3 in the following excerpt:

"...I only teach and never check whether to use it or not, because I only introduce students to the fact that there are many AI tools that can be used, as long as they are ethical..., with these facilities still categorized according to ethics" (P3)

Based on the data above, it can be inferred that AI writing tools have shown their potential in student writing. As stated by Pokrivcakova (2019) that AI can encourage personalized learning and provide immediate feedback that can increase learning satisfaction. The feedback received provides encouragement to student creativity.

The Use of AI can Help Students in Completing the Task

The views given by P2 provide good input for making the best use of this tool by just being a discussion partner. In addition, P3 adds that AI is helpful for obtaining references or improving a paragraph. As shown in the interview excerpt below:

"Agree, with AI's function only as a virtual discussion friend. Not as a solution to complete all your college assignments." (P2)

Actually, it's okay, but for specific needs in looking for references or helping in improving a paragraph to make it clearer..., or summarizing a sentence. But you still have to read the results of the AI training. (P3)

The data above showed that the use of Chat GPT was only as an aid in completing tasks. What is given by Chat GPT must be filtered in order to get good ideas in seeking insight. It is supported by Marzuki et al. (2023) that AI tools are useful for fostering idea generation. Since the AI could help in making reference lists, generating first drafts as well as solving equations as found by Uddin et al., (2023).

Preventive Strategies in using AI tools

Since the use of AI has raised various ethical issues such as encouraging plagiarism and cheating (Gašević et al., 2023). Thus, there were several experts worried about Chat GPT's ethical considerations (Mhlanga, 2023). According to Dehouche (2021), when students have the potential to use this system to cheat on their assignments by submitting essays that are

not their own work. This can weaken their abilities and tend to rely only on AI tools. As P1 responded to address this issue:

"I have to look for ways and learning strategies to strengthen students' learning of basic skills, including writing. Look for ways to always contract you regularly and regularly in order to motivate students and understand their abilities and weaknesses in writing, especially in writing. The effort is collaboration and discussion with students to stimulate their knowledge, as well as collaboration and training and understanding and consequences of plagiarism or unethical use of AI tools." (P1)

The data above showed that the teacher need to raise students' awareness of the importance of avoiding acts of plagiarism. It is in line with the statement of (Mijwil et al., 2023) that institutions of higher education have a moral duty to popularize preventive strategies to remedy cheating, plagiarism and copyright infringements and advance academic integrity. It is supported by Cotton et al., (2023) that there are several strategies that universities can adopt to ensure ethical and responsible use of these tools. These strategies include developing policies and procedures, providing training and support, and using various methods to detect and prevent cheating.

Furthermore, P2 suggested that every student must possess originality or a unique writing style to prevent its replacement. However, it is crucial to keep in mind the following in a section where AI tools are extremely popular and students utilize them to assist with writing assignments it is crucial that in the future, rapidly evolving technology does not replace human creativity with AI tools that lack emotions because they will not be the same as the human mind. The potential for AI systems to supplant human writers is a significant concern, as it could result in employment reductions and a decline of scientific writing standards (Parker, 2014). The following is an excerpt from the interview:

"In order for students' work to be better, students must have certain characteristics and characteristics so that what they think cannot be the same as AI. In the future, creativity is very necessary if our position is not to be replaced by AI." (P2)

Therefore, following the steps taken by some lecturers raises their concern for the use of AI tools by students. The efforts they mentioned will be something that can be done to build the progress of using AI in the classroom. To achieve high-quality writing, one can utilize a sufficient number of AI tools. Thus, in order to generate exceptional writing, it is necessary to go through a creative procedure and actively participate in consistent training, as advised by Arianti (2020). It is desirable that you do not consistently rely on AI tools or Chat GPT. The sole purpose of AI technology is to enhance the simplicity of use and stimulate creativity in writing.

D. CONCLUSION

Based on the results presented above, it can be concluded that these findings reveal that students using AI tools to help them in writing can no longer be avoided. Basically, lecturers consider that AI tools have a positive role and can be used as long as they comply with the writing code of ethics. These findings emphasize the importance of avoiding the use of AI tools as an immediate solution for student assignments. It is evident that AI tools are primarily employed as writing aids; therefore, it is desirable that students do not develop an unhealthy reliance on these tools, which could impede their ability to think critically.

This research offers a comprehensive analysis of the utilization of AI tools in EFL writing classes. Specifically, it elucidates the advantages of each AI tool employed by students. However, it should be noted that there are several limited circumstances in this research. The data obtained from this research were only three lecturers each from three different universities, so this was limited in the scope of the research. Lecturers' attitudes and views towards this AI tool may vary regarding its use with students. In addition, this research only focuses on lecturers' perceptions of AI tools and does not present an in-depth influence on the quality of students' writing because the researchers did not measure their writing improvement. Therefore, to overcome this limitation, it is hoped that future research can measure the potential of AI tools to see how much influence they have on the quality of students' writing. This will provide new discoveries in the world of education so that the application of AI tools can be applied in writing classes by students effectively and with positive openness in using them as writing aids.

E. REFERENCES

- Aljanabi, M. (2023). ChatGPT: Future directions and open possibilities. *Mesopotamian journal of Cybersecurity*, 2023, 16-17. <https://doi.org/10.58496/mjcs/2023/003>
- Arianti, R. (2020). Pelatihan Menulis Kreatif Puisi Pada Siswa Kelas Tinggi SD Negeri 006 Rambah Kabupaten Rokan Hulu. *Jurnal Masyarakat Negeri Rokania*, 1(1), 1– 5. <https://doi.org/10.56313/jmnr.v1i1.1>
- Bernardco, H.R. (2002). *Research Methods in Anthropology: Qualitative and quantitative methods*. 3rd edition. AltaMira Press.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- Bullock, J., & Luengo-Oroz, M. (2019). *Automated Speech Generation from UN General Assembly Statements: Mapping Risks in AI Generated Texts*. 1–5. <http://arxiv.org/abs/1906.01946>
- Chang, T. S., Li, Y., Huang, H. W., & Whitfield, B. (2021, March). Exploring EFL students' writing performance and their acceptance of AI-based automated writing feedback. In *Proceedings of the 2021 2nd International Conference on Education Development and Studies* (pp. 31-35).
- Chiu, T. K. F. (2023). The impact of Generative AI (GenAI) on practices, policies and research direction in education: a case of ChatGPT and Midjourney. *Interactive Learning Environments*, 1–17. <https://doi.org/10.1080/10494820.2023.2253861>
- Cotton, D. R. E., Cotton, P. A., & Shipway, J. R. (2023, March 13). Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*, 61(2), 228–239. <https://doi.org/10.1080/14703297.2023.2190148>
- Defazio, J., Jones, J., Tennant, F., & Hook, S. A. (2010). Academic literacy: The importance and impact of writing across the curriculum—A case study. *Journal of the Scholarship of Teaching and Learning*, 10(2), 34–47.
- Dehouche, N. (2021). Plagiarism in the age of massive Generative Pre-trained Transformers (GPT-3). *Ethics in Science and Environmental Politics*, 21, 17–23. <https://doi.org/10.3354/ese00195>
- Gašević, D., Siemens, G., & Sadiq, S. (2023). Empowering learners for the age of artificial intelligence. *Computers and Education: Artificial Intelligence*, 4(February). <https://doi.org/10.1016/j.caeai.2023.100130>

- Gayed, J. M., Carlon, M. K. J., Oriola, A. M., & Cross, J. S. (2022). Exploring an AI-based writing assistant's impact on English language learners. *Computers and Education: Artificial Intelligence*, 3, 100055. <https://doi.org/10.1016/j.caeai.2022.100055>
- Haque, M. U., Dharmadasa, I., Sworna, Z. T., Rajapakse, R. N., & Ahmad, H. (2022). "I think this is the most disruptive technology": Exploring sentiments of ChatGPT early adopters using Twitter data. arXiv. <https://doi.org/10.48550/arXiv.2303.03836>.
- Hu, G. (2023). Challenges for enforcing editorial policies on AI-generated papers. *Accountability in Research*, 1–4. <https://doi.org/10.1080/08989621.2023.2184262>
- Jeanjaroonsri, R. (2023). Thai EFL learners' use and perceptions of mobile technologies for writing. *Learn Journal: Language Education and Acquisition Research Network*, 16(1), 169–193. <https://so04.tci-thaijo.org/index.php/LEARN/article/view/263438>
- Kendall, L. (2014). The conduct of qualitative interviews: Research questions, methodological issues, and researching online. In *Handbook of research on new literacies* (pp. 133-150). Routledge.
- Köbis, N., & Mossink, L. D. (2021). Artificial intelligence versus Maya Angelou: Experimental evidence that people cannot differentiate AI-generated from human-written poetry. *Computers in Human Behavior*, 114, 106553. <https://doi.org/10.1016/j.chb.2020.106553>
- Kurniati, E. Y., & Fithriani, R. (2022). Post-Graduate Students' Perceptions of Quillbot Utilization in English Academic Writing Class. *Journal of English Language Teaching and Linguistics*, 7(3), 437. <https://doi.org/10.21462/jeltl.v7i3.852>
- Lancaster, T. (2023, June 5). Artificial intelligence, text generation tools and ChatGPT – does digital watermarking offer a solution? *International Journal for Educational Integrity*, 19(1). <https://doi.org/10.1007/s40979-023-00131-6>
- Lewis, J. L., & Sheppard, S. R. (2006). Culture and communication: can landscape visualization improve forest management consultation with indigenous communities?. *Landscape and urban planning*, 77(3), 291-313.
- Marzuki, Widiati, U., Rusdin, D., Darwin, & Indrawati, I. (2023). The impact of AI writing tools on the content and organization of students' writing: EFL teachers' perspective. *Cogent Education*, 10(2). <https://doi.org/10.1080/2331186X.2023.2236469>
- Mhlanga, D. (2023). Open AI in education, the responsible and ethical use of ChatGPT towards lifelong learning. In *FinTech and Artificial Intelligence for Sustainable Development: The Role of Smart Technologies in Achieving Development Goals* (pp. 387-409). Cham: Springer Nature Switzerland.
- Mijwil, M. M., Hiran, K. K., Doshi, R., Dadhich, M., Al-Mistarehi, A.-H., & Bala, I. (2023). ChatGPT and the future of academic integrity in the artificial intelligence era: A new frontier. *AlSalam Journal for Engineering and Technology*, 2(2), 116-127.
- Mokmin, N. A. M. (2020). The effectiveness of a personalized virtual fitness trainer in teaching physical education by applying the artificial intelligent algorithm. *International Journal of Human Movement and Sports Sciences*, 8(5), 258–264. <https://doi.org/10.13189/saj.2020.080514>
- Ouyang, F., Zheng, L., & Jiao, P. (2022). Artificial intelligence in online higher education: A systematic review of empirical research from 2011 to 2020. *Education and Information Technologies*, 27(6), 7893–7925. <https://doi.org/10.1007/s10639-022-10925-9>
- Parker, S. (2014). The impact of AI on jobs in scientific figure-making. *Journal of Science Writing*, 23(1), 31-35.
- Pokrivcakova, S. (2019). Preparing teachers for the application of AI-powered technologies in foreign language education. *Journal of Language and Cultural Education*, 7(3), 135–153. <https://doi.org/10.2478/jolace-2019-0025>

- Rusinovci, X. (2015). Teaching writing through process-genre based approach. *US-China Education Review*, 5(10), 699–705.
- Talan, T., & Kalinkara, Y. (2023). The role of artificial intelligence in higher education: ChatGPT assessment for anatomy course. *Uluslararası Yönetim Bilişim Sistemleri ve Bilgisayar Bilimleri Dergisi*, 7(1), 33-40.
- Uddin, S. J., Albert, A., Ovid, A., & Alsharif, A. (2023). Leveraging ChatGPT to aid construction hazard recognition and support safety education and training. *Sustainability*, 15(9), 7121.
- Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Sage Publications.
- Zhang, C., Zhang, C., Li, C., Qiao, Y., Zheng, S., Dam, S. K., Zhang, M., Kim, J. U., Kim, S. T., Choi, J., Park, G.-M., Bae, S.-H., Lee, L.-H., Hui, P., Kweon, I. S., & Hong, C. S. (2023). *One Small Step for Generative AI, One Giant Leap for AGI: A Complete Survey on ChatGPT in AIGC Era*. 1(1), 1–29. <http://arxiv.org/abs/2304.06488>
- Zhao, X. (2022). Leveraging artificial intelligence (AI) technology for English writing: Introducing wordtune as a digital writing assistant for EFL writers. *RELC Journal*, 00336882221094089. <https://doi.org/10.1177/00336882221094089>