Proceedings of ICILLP 2024 Workshop: Today's College Students and Faculty: How AI is Transforming Their Behaviors, Legally
DOI: 10.54254/2753-7048/74/2024.BO17885

Exploring Teachers' Perceptions of Generative AI (ChatGPT) Use on Undergraduate Teaching in EMI Context: A Literature Review

Runze Wang[1,a,*]

[1]*Institute of Education, University College London, London, WC1E 6BT, United Kingdom*
a. stnzrw4@ucl.ac.uk
**corresponding author*

Abstract: This literature review explores faculty perceptions of generative AI, and ChatGPT in particular, in English as a Medium of Instruction (EMI) undergraduate education. As AI technologies increasingly impact educational practices, they present unique opportunities and challenges, especially for non-native English speakers, navigating complex academic content. The paper synthesizes existing research on the advantages of AI teaching, including individualized learning and real-time feedback, while also discussing ethical issues, including academic integrity and the possibility of student dependence on AI technologies. It emphasizes the importance of comprehensive teacher training and the formulation of a clear code of ethics to promote the responsible integration of AI in EMI classrooms. In addition, the review points out gaps in the current literature, particularly addressing the long-term impact of AI on language acquisition and critical thinking skills. Finally, this study highlights the importance of providing educators with the required skills to effectively utilize AI in their teaching practices, ensuring that new technologies benefit students rather than degrade their learning outcomes.

Keywords: AI-assisted learning, Undergraduate education, ChatGPT, English Medium Instruction, Teacher perceptions.

1. Introduction

Generative AI technologies, including OpenAI's ChatGPT, are progressively influencing and transforming the educational landscape. These technologies are influencing conventional educational approaches through individualized learning design, content scheduling, and real-time feedback [1,2]. AI technologies offer distinct pedagogical opportunities and challenges in contemporary higher education, particularly concerning English as a Medium of Instruction (EMI). EMI denotes the utilization of English to instruct academic subjects to non-native English speakers and has emerged as a prevalent phenomenon as institutions endeavor to internationalize their curricula, broaden global perspectives, enhance English language proficiency, and improve English language skills [3,4]. Artificial intelligence tools, such as ChatGPT, exhibit considerable potential in English Medium Instruction contexts. These technologies provide linguistic assistance and scaffolding to aid students in comprehending academic information delivered in a second language. ChatGPT can produce writing prompts, condense intricate academic texts, and offer immediate feedback, enabling students

DOI: 10.54254/2753-7048/74/2024.BO17885

to interact more efficiently with language and material [5]. These characteristics are essential in EMI environments, where students encounter the simultaneous task of acquiring academic knowledge and enhancing their English proficiency. Nonetheless, despite the prospective advantages of AI, educators' perspectives on its incorporation into EMI settings are varied, encompassing apprehensions regarding the ethical ramifications of AI, assessments of academic integrity, and the readiness of instructors to proficiently implement AI [6,7]. This literature review consolidates prior studies on educators' opinions of generative AI utilization, emphasizing its function in undergraduate English Medium Instruction contexts. The review examines the pedagogical advantages and challenges of AI integration, offering perspectives on its function in improving learning and content comprehension, thereby addressing a gap in research regarding teachers' perceptions of AI usage in EMI contexts.

2. The Role of Generative AI in education

Generative AI technologies such as ChatGPT represent significant advancements in machines' ability to produce human-like text. These technologies hold immense potential for education, particularly in personalizing learning experiences and automating repetitive tasks [2,5]. One of the primary benefits of AI in education is its ability to provide personalized feedback and learning paths depending on students' specific needs. As an illustration, ChatGPT can be used to adjust the complexity of writing prompts based on a student's language proficiency, helping them progress at their own pace [1].

In EMI classrooms, where students frequently face the dual challenge of understanding topic knowledge while also improving their English language proficiency, AI technologies can provide invaluable support. Research by Marzuki and colleagues indicates that students using AI technologies in language learning environments were able to better engage with the topic, experiencing enhanced comprehension and higher confidence in their academic writing [8]. ChatGPT's ability to scaffold complex academic concepts, generate summaries, and provide instant feedback on grammar and vocabulary allows students to manage cognitive load more effectively [9].

Moreover, AI technologies have the ability to extend learning beyond the classroom by offering students interactive practice sessions. ChatGPT, for example, can simulate real-world conversations, helping students practice academic discourse in English without the pressure of performing in front of their peers [10]. This use of AI aligns with findings that self-paced, interactive learning environments contribute positively to student engagement and motivation [11].

Previous studies have documented notable advancements in AI technology and research trends. For instance, Meniado et al. investigated the experiences and perceptions of Vietnamese and Thai EFL learners regarding the use of ChatGPT for L2 writing, finding that students generally viewed it positively as a helpful tool for organizing ideas, brainstorming, and revising drafts, with Vietnamese students expressing higher levels of satisfaction than their Thai counterparts [9]. In 2024, Karatay and Karatay's study synthesized 40 research articles on the use of Automated Writing Evaluation (AWE) in second language writing classrooms, finding that AWE improves students' writing accuracy, promotes learner autonomy, provides instant feedback, and reduces teachers' workload while enhancing the overall learning experience for students [12]. Other review studies have looked into specific AI technologies, including conversational AI and AI for story writing, examining their collaborative potential in language classrooms [13,14]. While these studies illustrate the benefits and problems of AI integration in education, they note a lack of empirical evidence supporting effective collaboration between AI and teachers. Other assessments have reviewed pedagogical, AI's technological, and social potential in teaching languages [15].

Since its inception in November 2022, ChatGPT has spurred conversations and trials about its function in language instruction. Numerous studies have been published regarding the usage of ChatGPT in language learning [16-18]. However, a literature review specifically addressing the role of ChatGPT in language learning has yet to be conducted. Given the ongoing debates in this area,

DOI: 10.54254/2753-7048/74/2024.BO17885

there is a critical need to support educators, researchers, and policymakers by analyzing the findings from the first year of the study on the implementation of ChatGPT in language acquisition [15]. This study seeks to provide a complete overview of articles relevant to language learning and ChatGPT from its introduction, reflecting current knowledge on the topic. The literature review adopts a broad definition of language learning, encompassing the enhancement of native language skills as well as the acquisition of new languages beyond one's first language.

3. Teachers' Perceptions of AI in EMI Contexts

3.1. Attitudes Toward AI Integration

Teachers' perspectives on AI in EMI contexts vary significantly and are frequently influenced by their technological experiences, institutional backing, and pedagogical beliefs. Some educators regard AI as a beneficial resource for vital language assistance, while others raise apprehensions regarding its capacity to undermine students' critical thinking and involvement in the learning process [19]. Lin and Chen discovered that educators with greater familiarity with AI tools exhibited a generally favorable attitude towards its application in EMI classrooms [20]. These educators suggested that AI could enhance conventional teaching methods by providing learners supplementary practice and feedback on language assignments beyond classroom hours.

However, educators with limited experience in AI integration exhibited greater skepticism. Wei contends that although AI can automate certain tasks, it may diminish prospects for genuine engagement in language acquisition processes [21]. Educators have voiced apprehensions that students would excessively depend on AI-generated feedback, so circumventing the necessary challenges of language acquisition that foster profound learning and critical analysis [22]. The dichotomy between the ease provided by AI technologies and the risk of over-dependence on them is a significant concern for educators, particularly regarding the cultivation of students' long-term language proficiency.

3.2. Ethical Concerns and Academic Integrity

One of the most concerning issues with the usage of generative AI in education is the potential for academic misconduct. The ability of ChatGPTs to generate coherent, contextually appropriate text raises the issue of plagiarism and over-reliance on AI-generated content [7]. This problem may be particularly acute in EMI environments that require high levels of language proficiency. Teachers are concerned that pupils may utilize AI technologies to write essays or complete projects without really engaging in the process of understanding knowledge or developing their language skills [23].

Tang and Su indicated that the development of clear ethical guidelines governing the usage of AI in academic settings is essential [7]. While AI is able to provide a valuable aid to language learning, teachers have to explore strategies for detecting AI-generated content and ensure that students are using these tools in line with the norms. This requires a shift in the way institutions approach academic integrity, with a focus on transparency and the ethical use of technology in education. Educators are also calling for stronger binding norms and adjudication policies that specify acceptable uses of AI in academic work [7].

Moreover, to reduce the risk of academic dishonesty, scholars have suggested integrating AI tools into formative rather than summative assessments. To illustrate, AI could be used to provide continuous feedback during the essay drafting process, helping students to adjust and polish their writing before submitting the final version for marking. This approach is in line with the principles of formative assessment, focusing on the learning process and improvement rather than final grades [24]. These help students develop language skills and minimize the temptation to misuse or overuse AI tools for academic misconduct.

DOI: 10.54254/2753-7048/74/2024.BO17885

3.3. Pedagogical Potential of AI in EMI Classrooms

Despite the contentious ethical considerations surrounding the use of AI, many educators recognize the instructional potential of these technologies in the classroom. This is especially true for more established AI systems, such as ChatGPT, which may provide personalized learning recommendations. According to Macaro, ChatGPT may mitigate cognitive stress by offering real-time corrections and simplified explanations [4]. AI can improve students' language accuracy and fluency by offering grammatical corrections, vocabulary suggestions, and scaffolding complicated linguistic structures in academic writing [1]. Furthermore, Zawacki-Richter et al. discovered that students who got AI-generated feedback had higher content acceptability and were more inclined to alter their assignments based on the comments than students who only received feedback from the teacher [5].

Incorporating AI into the EMI classroom also promotes inclusive learning. Because each student's English level varies, and undergraduate education in the EMI model is frequently taught in large class sizes, it not only makes it difficult for students to understand and engage with course content, but it also challenges teachers to provide individualized instructional attention and feedback [25].

Therefore, AI systems can be utilized to imitate instructors and provide support to students. They change the degree of comprehension of the learning material in response to the students' dynamic development, guaranteeing that students do not lose confidence and motivation because the content is too tough to understand, or delay the learning process since the content is too easy.

Furthermore, AI tools enable students to study languages more relaxed and independently. The study explored that when students applied AI technologies for language practice, they had more confidence in their English competence and capacity to engage with the topics of their EMI classes [8]. This type of practice outside of the conventional classroom enables students to accept responsibility for their own learning, enhancing autonomy, which is a crucial ability in higher education [11]. Overall, these tools will provide students with an effective and personalized learning environment while also increasing their self-confidence.

4. Challenges of Implementing AI in EMI Contexts

4.1. Teacher Training and Preparedness

The need for comprehensive teacher training is one of the obstacles in effectively incorporating AI into EMI classrooms. Many educators believe they are unprepared to incorporate AI technologies into their instruction due to limited exposure or training opportunities [19]. Teachers must be well-versed in technology and the function of these tools in teaching and learning; inadequate preparation may result in AI being utilized inefficiently or even misused, preventing teachers from realizing their full potential and so having a negative influence. Furthermore, teachers must consider how students use these tools to build instructional tactics for their classes. For example, teachers must grasp how AI tools provide formative feedback to support differentiated instruction and student autonomy [11].

The study emphasized the need to continue to develop competencies in the use of AI tools, stating that teachers who receive ongoing assistance and training are more likely to effectively integrate AI into their curriculum [24]. Teachers were able to employ AI not only to automate chores in their everyday work (such as grading and correcting), but also to enhance students' language learning by offering personalized feedback and practice opportunities [26]. Teachers who have not received skill training, on the other hand, are more likely to have a negative attitude and see AI as an added responsibility.

To close this gap, organizations must offer long-term and professional training options that focus on the integration of AI in the EMI classroom. The training should include both the technical

DOI: 10.54254/2753-7048/74/2024.BO17885

operation of AI tools and the instructional tactics that will maximize their usefulness. Furthermore, teachers can be given a forum to communicate their AI-related experiences, challenges, and accomplishments, as well as foster collaborative methods to AI integration [5].

4.2. Student Dependency and Learning Outcomes

Another concern associated with the usage of AI in EMI contexts is the risk of student dependency on AI tools. While AI can provide valuable support, there is a worry that students will rely too much on these technologies, using them as a crutch rather than a tool for learning. Students may use AI-generated content or feedback without fully participating in the problem-solving processes and critical thinking required for language and content mastery [6].

In EMI-specific contexts, AI techniques must be used to enable active learning. Teachers must guide students to use AI tools to enhance their understanding, not as a shortcut to completing assignments. For example, AI can be used to generate multiple versions of writing prompts, allowing students to explore different approaches to a topic before submitting a final draft. This process encourages students to think critically about their writing and engage more deeply with the topic [11]. To mitigate the risk of dependency, academics suggest that AI should be integrated into the learning process in a manner that complements rather than substitutes traditional teaching techniques. In addition, long-term research on the effect of AI on the learning outcomes of students remains limited. While short-term studies have indicated that AI is able to boost student performance, particularly in language development, it is unclear whether these improvements are sustained over the long term [7]. Therefore, future research ought to examine the long-term impacts of AI on student learning in EMI contexts, especially critical thinking, language skills, and content mastery.

5. Conclusion

Integrating generative AI into EMI classrooms opens up many teaching opportunities, but it also raises some important issues that need to be explored further. To effectively integrate AI into EMI environments, educational institutions must provide ongoing support in the form of teacher training, clear ethical guidelines, and institutional policies that promote the responsible use of AI. Without these support structures, AI's full potential for improving language learning and content understanding in EMI environments may not be realized.

In addition, future research should address several critical topics. First, longitudinal investigations are required. Research should look into whether the short-term benefits of AI, such as improvements in writing and increased engagement, translate into long-term improvements in language skills and critical thinking skills. Second, cross-cultural research should explore how teachers in different EMI environments view and integrate AI tools. As mentioned earlier, teachers in different regions may have varying levels of familiarity with technology, and some may even have minimal exposure to AI technology, which may affect how they use AI in the classroom. Understanding these cultural differences can help educational institutions develop more targeted professional development programs and support networks for teachers. Finally, further research should be conducted on the ethical implications of AI in education, particularly as it relates to academic integrity. As AI technologies get more advanced, the distinction between academic dishonesty and acceptable use may blur. Institutions must develop explicit norms for using AI tools in academic settings and provide teachers with tools to detect and address potential abuse. By addressing these challenges, this review helps to deepen our awareness of the pedagogical, ethical and practical implications of AI in EMI settings, providing the groundwork for further research and effective application techniques

DOI: 10.54254/2753-7048/74/2024.BO17885

References

[1] Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial intelligence in Education: Promises and implications for teachig and learning. http://oro.open.ac.uk/60255/

[2] Luckin, R. (2017). Towards artificial intelligence-based assessment systems. Nature Human Behaviour, 1(3).

[3] Dearden, J. (2014). English as a medium of instruction – A growing global phenomenon. British Council. https://www.britishcouncil.org/sites/default/files/english-as-a-medium-of-instruction.pdf

[4] Macaro, E. (2018). English Medium Instruction. In Studi e ricerche.

[5] Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019b). 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).

[6] Selwyn, N. (2019). Should robots replace teachers? AI and the future of education. Learning, Media and Technology, 44(2), 102-115.

[7] Tang, L., & Su, Y. (2024). Ethical Implications and Principles of Using Artificial intelligence models in the Classroom: A systematic literature review. International Journal of Interactive Multimedia and Artificial Intelligence, In press(In press), 1.

[8] 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).

[9] Meniado, J. C., Huyen, D. T. T., Panyadilokpong, N., & Lertkomolwit, P. (2024). Using ChatGPT for second language writing: Experiences and perceptions of EFL learners in Thailand and Vietnam. Computers and Education Artificial Intelligence, 100313.

[10] Gay, F. (2021). Investigating the effects of technology-enhanced vocabulary learning strategy instruction on supporting mixed-ability EMI learners studying a journalism and communication major: An action research project at a university in China. Journal of English for Academic Purposes, 55, 101068.

[11] Mohamed, A. M., Shaaban, T. S., Bakry, S. H., Guillén-Gámez, F. D., & Strzelecki, A. (2024). Empowering the Faculty of Education students: Applying AI's potential for motivating and enhancing learning. Innovative Higher Education.

[12] Karatay, Y., & Karatay, L. (2024). Automated Writing Evaluation Use in second language Classrooms: a research synthesis. System, 123, 103332.

[13] Ji, H., Han, I., & Ko, Y. (2022). A systematic review of conversational AI in language education: focusing on the collaboration with human teachers. Journal of Research on Technology in Education, 55(1), 48–63.

[14] 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).

[15] Li, B., Lowell, V. L., Wang, C., & Li, X. (2024). A systematic review of the first year of publications on ChatGPT and language education: Examining research on ChatGPT's use in language learning and teaching. Computers and Education Artificial Intelligence, 7, 100266.

[16] Kostka, I., & Toncelli, R. (2023). Exploring Applications of ChatGPT to English Language teaching: Opportunities, challenges, and recommendations. Teaching English as a Second or Foreign Language--TESL-EJ, 27(3).

[17] Warschauer, M., Tseng, W., Yim, S., Webster, T., Jacob, S., Du, Q., & Tate, T. (2023). The affordances and contradictions of AI-generated text for writers of english as a second or foreign language. Journal of Second Language Writing, 62, 101071.

[18] Tlili, A., Shehata, B., Adarkwah, M. A., Bozkurt, A., Hickey, D. T., Huang, R., & Agyemang, B. (2023). What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education. Smart Learning Environments, 10(1).

[19] Fošner, A. (2024). University Students' Attitudes and Perceptions towards AI Tools: Implications for Sustainable Educational Practices. Sustainability, 16(19), 8668.

[20] Lin, H., & Chen, Q. (2024). Artificial intelligence (AI) -integrated educational applications and college students' creativity and academic emotions: students and teachers' perceptions and attitudes. BMC Psychology, 12(1).

[21] Wei, L. (2023). Artificial intelligence in language instruction: impact on English learning achievement, L2 motivation, and self-regulated learning. Frontiers in Psychology, 14.

[22] Zhai, C., Wibowo, S., & Li, L. D. (2024). The effects of over-reliance on AI dialogue systems on students' cognitive abilities: a systematic review. Smart Learning Environments, 11(1).

[23] Tang, L., & Su, Y. (2024). Ethical Implications and Principles of Using Artificial intelligence models in the Classroom: A systematic literature review. International Journal of Interactive Multimedia and Artificial Intelligence, In press(In press), 1.

[24] Moorhouse, B. L., & Kohnke, L. (2024). The effects of generative AI on initial language teacher education: The perceptions of teacher educators. System, 122, 103290.

DOI: 10.54254/2753-7048/74/2024.BO17885

[25] Ismail, S. M., Rahul, D. R., Patra, I., & Rezvani, E. (2022). Formative vs. summative assessment: impacts on academic motivation, attitude toward learning, test anxiety, and self-regulation skill. Language Testing in Asia, 12(1).

[26] Gratani, F., Screpanti, L., Giannandrea, L., Scaradozzi, D., & Capolla, L. M. (2024). Personalized feedback in university contexts: Exploring the potential of AI-Based techniques. In Communications in computer and information science (pp. 440–454).