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The use of ai in learning English: A comparative study between Moroccan and Indonesian undergraduate students from the English department

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Abstract: It is generally understood that people's attitudes influence and shape their behavior. However, there is still a gap in knowledge regarding how undergraduate students from different countries perceive AI in learning English. This paper aims to compare two groups of undergraduate students from the English departments of Morocco and Indonesia. To achieve this, an online structured questionnaire was administered to 240 undergraduate students from these two countries. Data collected were analyzed using SPSS version 25 and the Mann-Whitney test. The findings revealed that both groups are optimistic about using AI for learning English. They utilize AI tools for feedback, engagement, motivation, personalized learning, and autonomy. However, there is a disparity in how each group uses AI for translation. Additionally, participants expressed concerns about AI related to privacy and security, overreliance and lack of responsibility, critical thinking and creativity issues, and plagiarism. The study suggests that AI can be both beneficial and detrimental. Incorporating AI into the classroom is essential for improving students' AI literacy and enhancing their academic and language skills. A balanced approach to AI use involves not only providing students with diverse AI tools suited to their academic needs but also raising awareness about the ethical issues associated with AI.

Keywords: *Indonesia, Learning English, Morocco, Undergraduate students.*

1. Introduction

The rise of digitalized learning methods has profoundly transformed the terrain of higher education (Khoza & Mpungose, 2022). This paradigm shift has been accelerated by various factors, including traditional classroom dynamics and unprecedented events such as the COVID-19 pandemic, thereby prompting a significant evolution in educational practices driven by Artificial Intelligence (Karaca & Kılcan, 2023). The widespread adoption of conventional teaching approaches often fails to sufficiently engage students with diverse learning preferences, thereby impeding the promotion of active participation and critical thinking abilities (Kistyanto et al., 2022). Additionally, the lack of opportunities for international collaboration and cultural exchange in higher education exacerbates these challenges. To address these gaps, the incorporation of artificial intelligence (AI) emerges as a crucial solution (Rahiman, H. U., & Kodikal, R., 2024).

Klimova et al. (2023) assert that contemporary undergraduate students from Generation Z are recognized for their adeptness with digital technologies, having been raised in a digital milieu. Consequently, the profound impact of AI on education becomes indisputable (Fullan et al., 2023). Recently, there has been a notable rise in research dedicated to integrating AI into language learning, with various studies exploring different facets of AI's influence on language education (Forero-Corba & Bennasar, 2024; Liang et al., 2023; Steiss et al., 2023). Similarly, Solak (2024) contends that Artificial

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Intelligence has revolutionized the domain of English language learning, offering an immersive instructional environment that significantly enhances language acquisition.

El Bakkouri and Raki (2023) stress the significant influence of students' attitudes on the adoption and effectiveness of educational technology. Kelly et al. (2023) note that learners' readiness to adopt AI depends largely on their perceptions. Existing studies on AI in education have primarily focused on the attitudes of EFL teachers (Kohnke et al., 2023b; Ulla et al., 2023) or targeted pre-college EFL learners with limited exposure to AI applications, leaving a gap in understanding the perspectives and behaviors of EFL college learners (Wu et al., 2024; Arbi, 2024). Additionally, Alexander et al. (2023) explain that research into generative AI technology is still in its infancy, striving to keep pace with the rapid advancements in this field. Furthermore, research conducted by Kasneci et al. (2023) indicates that AI has the potential to greatly impact language education. However, there is a gap in understanding how AI is perceived by EFL students in relation to their learning experiences.

Therefore, this study aims to examine the perceptions of Moroccan and Indonesian undergraduate students regarding the use of AI in learning English as a foreign language. Additionally, it seeks to establish a comparative analysis between these two student groups.

1.1. Research Questions

To achieve the purpose of this paper, the researchers try to answer the following questions:

1. To what extent are Moroccan and Indonesian undergraduate students from the English department optimistic about using AI for learning English?
2. For what purposes do Moroccan and Indonesian undergraduate students use AI, and what concerns do they have?

2. Literature Review

Sharifuddin and Hashim (2024) argue that the Covid-19 outbreak has prompted the widespread adoption of numerous applications in ESL classrooms, facilitating continued learning through online platforms. This supports Pazilah et al.'s (2019) assertion that technology serves as an effective tool for teaching and learning foreign languages. Moussa and Belhiah (2024) argue that the widespread use of AI tools in education prompts important questions about how students navigate and utilize these technological supports. Students' perceptions serve as practical tools that influence their behavior (Scherer et al., 2016). Before examining students' attitudes toward using AI in learning English, it is essential to understand what AI is and its relationship with education. This includes exploring the role of AI in the 21st century, its challenges and benefits, and reviewing previous studies on students' perceptions in both Morocco and Indonesia.

2.1. Artificial Intelligence (AI)

The concept of AI is older than some may realize (Akhiat, 2024). It was coined in 1956 by McCarthy (Cristianini, 2016), who expanded upon the foundational work of Turing (e.g., Turing, 1937, 1950). Turing explored the idea that machines could possess intelligent reasoning and thinking capabilities. The interdisciplinary interest from scholars in fields such as linguistics, psychology, education, and neuroscience, who relate AI to the terminology, perceptions, and knowledge in their own disciplines, presents a challenge in defining AI. This has led to the necessity of creating specific categories of AI within distinct disciplinary areas (Crompton & Burke, 2023).

There have been several attempts to define AI, with most emphasizing that AI is the capability of a digital machine to perform tasks typically carried out by intelligent beings (Chiu et al., 2024; Karsenti, 2019; Jati et al., 2021; Baker et al., 2019; Arbi, 2024; UNESCO, 2021). Mujahidah et al. (2023) describe AI as a technology created by humans that can perform tasks better than humans. Popenici and Kerr (2017) describe AI as a computational system capable of human-like functions, such as learning, adapting, synthesizing, self-correcting, and processing complex data independently to varying degrees.

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Additionally, Generative Artificial Intelligence has emerged as a promising technology that can create original content, including text, images, and sound (Alier et al., 2024).

El Bakkouri and Raki (2023) distinguish between two main divisions of AI in education, namely, physical and virtual. The physical form is best represented by robots, while the virtual form is exemplified by machine learning technologies. Generative AI, which includes chatbots, is a type of virtual AI designed to interact automatically with both humans and computers (Nghi et al., 2019). An advanced example of this is ChatGPT, developed by OpenAI, which enables users to guide and shape conversations based on their preferences.

On the contrary, Sienes and Sarsale (2024) perceive that technology, particularly AI, which can simulate and often surpass the speed and accuracy of the human brain, has significantly advanced English language learning and acquisition. However, it has also introduced professional and ethical challenges for students, teachers, and the overall teaching-learning process in the 21st century.

2.2. The Use of AI in the 21st Century

AI has swiftly integrated into our daily lives, drawing significant attention across various fields, including education (Solak, 2024). AI influences our lives often without our conscious awareness (Sienes & Sarsale, 2024). Yang (2020) noted that while AI's application in language teaching was still nascent, it held substantial promise. It has transformed the English learning process, enhanced the learning experience, altered the role of educators, elevated the standards of English instruction, and driven reform in teaching practices. According to Sienes and Sarsale (2024), advancements in science and technology have shifted us from the traditional "sage on the stage" model to "AI on the side." Generative AI in educational contexts is gaining traction, presenting both opportunities and challenges (Alier et al., 2024). Moreover, efforts are underway to make digital and technological resources more accessible, ensuring that everyone benefits from digitalization (Syahrani, 2021). Online learning platforms are increasingly available to all, breaking down barriers and providing every student with the opportunity to achieve their potential by reducing educational disparities and offering equal learning opportunities (Judijanto et al., 2024).

2.3. AI Challenges

The integration of AI into language learning brings forth significant considerations and challenges. According to Muttaqin et al. (2023), it is essential to recognize the limitations and obstacles associated with these technologies. Research highlights several concerns related to AI in education (Rodway & Schepman, 2023; Labadze et al., 2023) inclusing the potential for enabling criminal and illegal activities, threats to data privacy, and cybersecurity risks (Dash & Sharma, 2023), technology overdependence (Arbi, 2024), prejudice, lack of equity and responsibility (Yuan, 2023). Issues such as false data creation (hallucination), misinterpretation of information, bias, and plagiarism (Borji, 2022; Fostikov, 2023; Qadir, 2022) are also some of the problems related to the use of AI in learning. Furthermore, practical challenges such as limited resources, infrastructural problems in universities, internet accessibility, and power supply issues (Mogaji & Jain, 2020) that need to be highlighted.

2.4. Potential Benefits

Despite the increasing concerns about AI use in education (Bai et al., 2023; Seo et al., 2021; Yuan, 2023), this advanced technology has significant potential to aid students. AI can deliver instant and continuous feedback (Suta et al., 2020; Ifelebuegu et al., 2023), assist students in finding pertinent and engaging content that matches their learning objectives (Haristiani, 2019), and support innovative tutoring systems and tailored learning experiences (Hwang et al., 2020). It can enhance personalized and adaptive learning and teaching (Chiu et al., 2023; Kohnke et al., 2023), inspire students to learn and enhance their knowledge acquisition (Hwang et al., 2020; Kohnke et al., 2023), and mitigate the shortcomings of traditional education systems, such as overcrowded classrooms and a lack of personalized support to cater to diverse learning needs and styles (Labadze et al., 2023). AI can also

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increase student engagement and motivation, boost self-confidence, and foster positive attitude (Suleman et al., 2019; Zhou & Li, 2023). Fast translation features (Nurmayasari, 2024) and various AI tools and applications, including Google Translate, Google Assistant, Grammarly, ChatGPT, and Duolingo (Alotaibi, 2023; Kohnke et al., 2023; Shortt et al., 2023), have been shown to be advantageous for students.

2.5. Learning English in Higher Education in Morocco using AI

Several studies conducted in Morocco reflect varying student attitudes towards AI in education. Some report entirely positive views, while others indicate positive perceptions but emphasize the need to address ethical issues. Additionally, some studies are inconclusive, unable to definitively categorize the attitudes as either positive or negative. For instance, Moussa and Belhiah (2024) conducted a study examining the complex interactions between undergraduate EFL learners and AI-assisted writing tools. The findings showed improvements in language proficiency, creativity, organizational abilities, and vocabulary usage with the help of AI, underscoring the significant impact of AI on writing skills. Similarly, Ismail (2024) and their research team conducted a comparative study to examine the views of higher education students in Morocco regarding generative AI. The results demonstrated a favorable attitude and acceptance of generative AI among the participants. Likewise, Exploring the role of ChatGPT in improving students' learning outcomes, Boubker (2024) discovered that the quality of the generated content affects perceived usefulness and ease of use, which in turn boost individual impact and student satisfaction.

In their study, Lagrou and Isam (2023) investigated how students at the National School of Commerce and Management (ENCG) in Oujda perceive ChatGPT as a learning aid and its effect on their academic performance. The findings revealed that most students have a favorable view of ChatGPT, appreciating its ease of use and its capacity to deliver personalized assistance and feedback, which enhances their academic results. However, the study also pointed out the need to address ethical issues, stressing the importance of responsible use and appropriate regulations to prevent misuse while leveraging the advantages of this technology. With the goal of assessing the impact of ChatGPT on academic writing at Moroccan universities, Al-Zubaidi et al. (2024) found that Moroccan students recognize both the potential benefits and drawbacks of using ChatGPT. Students were found to be uncertain about its academic use, including how and where it should be applied. In their study, El Bakkouri and Raki (2023) aimed to explore the use of an AI-enabled virtual assistant in the private education sector. The key findings revealed that most students were uncertain about how to categorize their feelings and opinions regarding the usefulness of chatbots in their learning experience. Additionally, results showed that students are seeking more customization from this technology.

2.6. Learning English in Higher Education in Indonesia Using AI

Studies conducted in Indonesia have reported optimistic outcomes, while others observed positive results but highlighted the need for caution regarding the impact of AI use. Azzahra et al. (2024) investigated student perceptions of AI in English education, specifically its effectiveness in boosting listening and speaking skills and the challenges faced when using Duolingo and ELSA Speak apps. Most students acknowledged that these AI tools can improve their listening and speaking abilities. Nonetheless, they also highlighted various limitations and obstacles, such as unreliable internet connections and insufficient storage capacity, that need to be addressed. Laksana and Komara (2024) examined EFL students' views on the use of DeepL, highlighting its benefits and drawbacks. The study revealed that students appreciated DeepL for its accurate translations, time-saving capabilities, and potential to improve language skills. However, they also expressed concerns about becoming too dependent on the tool. Furthermore, in an effort to explore students' perceptions of using QuillBot in an EFL academic writing course, Syahnaz and Fithriani (2023) found that students responded positively to the use of QuillBot in their academic writing activities. In another study by Mujahidah et al. (2023) examining students' perceptions of AI-based instruction in English Language Teaching, the findings

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revealed that students perceived AI as being highly user-friendly and accessible. They also found AI to be a valuable and effective tool for their learning. Likewise, Ardini (2023) investigated the impact of autonomous pronunciation learning with AI and explored the experiences of advanced students using this approach. Following the use of an AI-based application called ELSA, the study found a significant correlation between AI usage and improvements in autonomous pronunciation learning.

Malik et al. (2023) conducted a study to examine students' perceptions of AI in academic essay writing using a case study approach. The results showed a favorable reception of AI-powered writing tools, with students recognizing their advantages in grammar correction, plagiarism detection, language translation, and essay organization. AI was found to improve students' writing skills, self-efficacy, and understanding of academic integrity. However, some students raised concerns about possible effects on creativity, critical thinking, and ethical writing practices. Safitri and Fithriani (2024) investigated how EFL students in higher education perceive AI writing tools. The results indicated that students see these tools as beneficial for enhancing writing quality, speeding up the writing process, and boosting creativity. However, there were also concerns about possible limitations on creativity. Darwin et al. (2024) aimed to provide a comprehensive view of EFL students' perceptions regarding the benefits and drawbacks of AI in relation to critical thinking. Students acknowledged that AI significantly supports various aspects of critical thinking, including academic research and theoretical analysis. However, they also raised concerns about AI's limitations, particularly its lack of personalization.

3. Method

3.1. Research Design

The objective of this study is to examine the perceptions of Moroccan and Indonesian undergraduate students regarding the use of artificial intelligence in English language learning. Specifically, this research aims to compare the perspectives of these two groups. To achieve this goal, the study employs a case study approach using the Mann-Whitney test, utilizing a quantitative method through a structured questionnaire. To facilitate the comparison of responses between the groups, the researchers formulated a hypothesis.

3.2. Research Hypothesis

H_0: There is no significant difference between Moroccan and Indonesian undergraduate students in their utilization of AI for learning English as a foreign language and their attitudes towards its use.

H_1: There is a significant difference between Moroccan and Indonesian undergraduate students in their utilization of AI for learning English as a foreign language and their attitudes towards its use.

3.3. Participants

The participants of this study are undergraduate students majoring in English from various universities in Morocco and Indonesia. The sample consists of 120 Moroccan students and 120 Indonesian students as displayed in the table below:

Table 1.
Students sample.

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Morocco	120	50.0	50.0	50.0
	Indonesia	120	50.0	50.0	100.0
	Total	240	100.0	100.0	

3.4. Data Collection and Analysis

After drafting the questionnaire, which was based on a review of the literature, participants were asked about their degree of optimism towards the use of AI in learning English. The questionnaire also covered their perceptions of how AI aids them in learning, including providing feedback, engaging and

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motivating them, offering personalized learning and autonomy, and translation. Additionally, the questionnaire addressed their concerns when using AI, such as privacy and security, overdependence and lack of responsibility, potential issues with critical thinking and creativity, and plagiarism. The questionnaire used a 5-point Likert scale ranging from 1=strongly disagree, 2=disagree, 3=neutral, 4=strongly agree, to 5= agree. In a Word document, the researchers utilized Google Forms to distribute the survey link to the targeted groups. Upon collecting the data, the researchers analyzed it using SPSS version 25. Descriptive statistics were employed to address the first research question, while Mann-whitney test was used to answer the second research question of the study and to compare both groups; The Mann Whitney U test is a nonparametric hypothesis test that compares two independent groups to determine whether the difference between the medians of two groups is statistically significant.

4. Results

Table 2 displays the difference between Moroccan and Indonesian students in their level of optimism towards using AI in learning English. Since the p-value is greater than the alpha level of 0.05, we conclude that there is no significant difference between the two groups. Hence, we fail to reject the null hypothesis.

Table 2.
Optimism towards using AI in learning English.

	I am optimistic about learning English through AI
Mann-Whitney U	6449.500
Wilcoxon W	13709.500
Z	-1.465
Asymp. sig. (2-tailed)	0.143
a. Grouping variable: Country	

Table 3.
Purposes for using AI to learn English.

	To learn English, I use AI for [round-the-clock feedback]	**To learn English, I use AI for [engagement and motivation]**	**To learn English, I use AI for [personalized learning and autonomy]**	**To learn English, I use AI for [translation]**
Mann-Whitney U	3986.000	5959.500	5143.500	7108.500
Wilcoxon W	11246.000	13219.500	12403.500	14368.500
Z	-6.251	-2.450	-4.137	-0.215
Asymp. sig. (2-tailed)	0.000	0.014	0.000	0.830
a. Grouping variable: Country				

Based on Table 3, which demonstrates the purposes for using AI to learn English, both groups utilize AI for round-the-clock feedback (p-value of 0.000), engagement and motivation (p-value of 0.014), and personalized learning and autonomy (p-value of 0.000). Therefore, we reject the null hypothesis for these purposes. However, there is no significant difference between the groups in their use of AI for translation, with a p-value of 0.830, which is greater than the alpha level of 0.05. Thus, we fail to reject the null hypothesis for this purpose.

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Table 4.
Concerns regarding the use of AI.

	I don't use AI to learn English because of [Privacy and security concerns]	I don't use AI to learn English because of [The risk of overdependence and lack of responsibility]	I don't use AI to learn English because of [Potential issues with critical thinking and creativity]	I don't use AI to learn English because of [The possibility of plagiarism]
Mann-Whitney U	5662.500	5276.000	3582.500	2924.000
Wilcoxon W	12922.500	12536.000	10842.500	10184.000
Z	-3.407	-3.734	-7.638	-9.411
Asymp. sig. (2-tailed)	0.001	0.000	0.000	0.000
a. Grouping Variable: country				

Based on Table 4, which represents students' concerns towards the use of AI, it can be concluded that there is no significant difference between the two groups. Both groups avoid using AI to learn English due to concerns such as privacy and security (p-value 0.001), overdependence and lack of responsibility (p-value 0.000), critical thinking and creativity (p-value 0.000), and plagiarism (p-value 0.000). Therefore, we fail to reject the null hypothesis for these concerns.

5. Discussion

The purpose of this study is to investigate the extent to which Moroccan and Indonesian undergraduate students from the English department differ in their perspectives and use of AI. Results demonstrated that there is no difference between Moroccan students and Indonesian students and that both of the groups were optimistic towards the use of AI in learning English. This perhaps goes back to AI tools that seems to be improving their four skills and practice their foreign language outside class and lesson their fear of speaking English among others. Similarly, a study conducted by Chai et al. (2024) measured the different factors that influence university students' behavioral intentions to learn about AI and their AI learning. The results showed that students' perceptions of using AI for social good were positively associated with optimism. In contrast, Arif's (2023) study explored how trust among university undergraduate and graduate students evolved over the COVID-19 pandemic. The results indicated that while there was an overall positive attitude and optimism towards AI and its development during the pandemic, this did not necessarily translate into increased trust in AI. In fact, various sources argue that despite a general rise in optimism towards AI, significant concerns about its implementation remain prevalent (Schepman and Rodway, 2022; Rossi, 2018; Bochniarz et al., 2021).

Among the reasons why learners use AI to learn English can be the opportunities to have or get feedback on their work or performance, to be engaged and motivated as well as to get a personalized learning and self-directed learning and autonomy as well as for translation purposes. Both groups of participants in this study use AI for the aforementioned purposes except for translation perhaps a previous experience with limited quality of text translation or innacurate translation or biased translation or it lacks the human touch and understanding needed for accurately translating complex and nuanced content and the believe that even a small mistranslation can have serious consequences perhaps due to cultural and langauge challenges or contextual understanding or perhaps the major source is the risk of data security and privacy violation. In this regard, With the aim to analyze an artificial intelligence platform that can be used in imparting education as well as evaluating student performance, the findings from Dewi et al. (2021) indicate that artificial intelligence technologies like Duolingo, Google Translate, and Grammarly can effectively aid in developing students' English learning. Similarly, research conducted on psychology students at Universitas Sarjanawiyata showed

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that AI-based applications such as Netflix and Joox Music can significantly enhance students' listening skills (Suryana et al., 2020). Other studies have also demonstrated the positive impact of AI on improving writing skills and reducing the fear of writing (Su et al., 2019), enhancing English pronunciation through spell checker applications for self-learning (Noviyanti, 2020), and improving English speaking skills (Muhammad et al., 2020). Abbas et al. (2024) found that students with heavy academic workloads and tight deadlines were more inclined to use AI tools such as ChatGPT. On the other hand, those who were reward-sensitive were less inclined to utilize ChatGPT. However, the use of ChatGPT was linked to an increase in procrastination, memory issues, and a decline in academic performance.

Both groups (Moroccan and Indonesian undergraduate students) showed similar concerns towards the use of AI that can be due to problems of privacy and security bacause some AI technologies collect and use personal data in an unauthorized or unethical ways and that there are potential risks that students' data could be accessed or used by unauthorized parties. Moreover, students are concerned with the overreliance on AI and its potential to make them less responsible because overdependence may diminish critical thinking and problem-solving skills in students as they bacome more accustomed to technology driven solution, problems of accepting AI generated recommendations without question would lead to errors in task performance. In fact, the overreliance on technology may inhibit the development of essential skills in thinking, engender a sense of distraction and disengagement, impede the cultivation of creativity and originality and exacerbates the risk of academic dishonesty. In addition to that, the participants have concerns toward the use of AI in learning English for the issue of plagiarism and originality of work and unethical and which can have serious consequences for future career and standards of the institutions or lead to hindering the learning process, obscuring the sources of one's ideas and usually resulting in bad writing. In study conducted by Zou et al. (2020) revealed that participants wanted accurate feedback on their English language, but felt that AI English language learning (ELL) apps didn't provide this effectively; no single app thoroughly evaluated pronunciation, accent, fluency, vocabulary, delivery, and content. Poor voice recognition also reduced the quality of feedback. Additionally, none of the current AI-ELL apps offered logical and coherent speech organization, which was seen as an important feature. Wardani et al. (2024) study explores students' perspectives on AI, their favored AI tools, and the perceived advantages and drawbacks of incorporating AI into academic tasks. The findings indicated that AI-generated responses frequently lack relevance and need adjustments. Additionally, over-reliance on AI can result in dependency on technology and suppress creativity. Misguided use of AI can lead to incorrect outcomes, emphasizing the need for careful and appropriate use. Although AI offers assistance, it also poses risks if not used properly.

6. Conclusion

With an aim to examine the perception of Moroccan and Indonesian undergraduate students regarding the use of AI in learning English as a foreign language, this study seeks comparision between both groups to gain an understanding about students in different countries how they perceive AI in education. After conducting the study, the results showed that both groups of the participants demonstrated optimism toward their use of AI which they reflected in their use of AI that benefit them, for AI as they suggest can help in giving them feedback any time on anything, engage and motivate them, and guarantee personalized and autonomous learninng, meanwhile, it does not seem to help a lot when it comes to translation. Furthermore, AI does not seem to be all of help but it can cause harms such as problems related to overrelience, privacy and security concerns, issues of critical thinking and creativity, as well as plagiarism.

The study provides important implications for higher education institutions, instructors, and students. First of all, it is worthnoting that incorporating AI into the classroom is crucial for enhancing students' understanding of AI literacy and boosting their academic performance and language skills. Second, encouraging a balanced approach to AI use among students involves not only providing access to various AI tools tailored to their academic needs but also promoting awareness of the ethical

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implications of AI. Finally, although integrating AI into the classroom is crucial, educators and students must be cautious and aware of the potential risks associated with using AI tools (Law, 2024).

It is important to acknowledge that this study had certain limitations and areas for improvement. One such area is the need to include a larger and more diverse group of students, particularly from other countries, to gain a more comprehensive understanding. Additionally, future research should consider using interviews to gain deeper insights into participants' experiences and viewpoints regarding the advantages and challenges of AI.

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