

Trends of Using Artificial Intelligence (AI) Technologies in Research Studies of English Language Teaching

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Abstract

Artificial Intelligence (AI) plays an increasingly important role in English language teaching (ELT); however, the trends of AI in language learning remain largely under-investigated. Accordingly, the study, using bibliometric analysis, investigates these issues via a review of 64 papers published between 2021 and 2023, focusing on how AI was integrated into ELT. The objectives aimed to 1) identify the integration of AI technologies in researches in order to enhance English language acquisition and pedagogical skills, and 2) explore the levels of English language learners that AI technologies employed in the obtained studies. The academic articles, research papers, conference proceedings were selected by publication in 2021 and 2023 that obtained from ERIC database. The search terms of “Artificial Intelligence”, “English Language Teaching”, and “Teaching Strategies” resulted in 64 articles that they were selected by purposive sampling. Findings revealed that the frequency of employing AI in the studies. The results pointed the five most popular AI-technology based English language teaching and learning obtained from the review were: (1) AI-technology based pedagogies (48 articles, 75%), (2) the AI-technology based English writing (8 articles, 12.5%), (3) the AI-technology based English vocabulary (4 articles, 6.25%), (4) the AI-technology based English speaking (3 articles, 4.68%), (5) the AI-technology based English grammar (1 article, 1.56%). The results also indicated the levels of learners that AI-technologies integrated in ELT were at the tertiary level was the most frequent (29 articles, 45.3%), followed by overall (23 articles, 35.9%), the secondary level (10 articles, 15.6%), and an equal number of studies examined using AI-technologies at the primary level and graduate level (1 article, 1.56%). This study is helpful for those interested in finding the appropriate AI for English language acquisition and pedagogical skills.

Keywords: artificial intelligence technologies, English Language Teaching (ELT), pedagogy, research studies

Introduction

The rapid advancement of technology, particularly in the field of artificial intelligence (AI), has brought about significant changes in various domains, including education. English language teaching as a crucial aspect of global communication, have also witnessed the integration of AI technologies.

In November 2022 through August 2023, ChatGPT led with the most traffic visits, at 14.6 billion total visits since its launch. The launch of this platform triggered a generative AI boom that planted interest in other AI tools available. (Diaz, 2023: unpagged) By studying trends in the use of AI in ELT, instructors and educators can harness the potential of technology to create more dynamic, personalized, and effective learning experiences for the students.

Accordingly, the number of review papers on the topic artificial intelligence (AI) technologies has recently increased. On the one hand, this study conducted a systematic review focusing on trends in using AI technologies and digital tools, and it mainly attended to the ELT aspects. On the other hand, the research gathered relevant academic articles, research papers, conference proceedings published in 2021-2023 from Education Resources Information Center (ERIC) database.

In fact, ERIC database, or Education Resources Information Center, that found in 1965 provided a comprehensive, easy-to-use, searchable, Internet-based bibliographic and full-text database of education research and information for educators, researchers, and the general public. Its database contains nearly a million bibliographic records of journal articles, research reports, curriculum and teaching guides, conference papers, and books (Robbins, 2001, p. 5). Mentioned by Hertzberg and Rudner (1999: unpagged), the ERIC is the largest source of educational information in the world, and very well indexed database. It is also one of the oldest and most comprehensive databases available anywhere that also displays abstracts with a complete bibliographic citation for each article or document.

According to the potentiality and benefit of ERIC database, it has been selected to conduct a literature review that aims to analyze the impact of AI on English language teaching by examining relevant studies so the review seeks to identify the English language skills of English language learners that influenced and implemented by potential benefits, challenges, and implication of AI technologies in English language acquisition and pedagogical skills for English learners and instructors.

In the post-pandemic era, the use of educational technologies in English language teaching (ELT) has been widely used, some of these technologies rely on artificial intelligence (AI). The application of AI in English language teaching examine various AI-powered tools, such as QuillBot, ChatBots, ChatGPT, and so on, that have been employed to enhance language learning experiences. Thus, this study analyzes researches that investigate the effectiveness of these AI tools in improving language proficiency and the positive effects of AI-technology based teaching methods towards teachers and learners.

The integration of AI in English language teaching and learning poses both pedagogical implications and challenges. Therefore, this literature review would be concluded by summarizing the key findings, highlighting the overall impact of AI on English language skills of English language teaching. It emphasizes the potential benefits of AI in improving language proficiency of learners. The research objectives aimed to 1) identify the use of AI technologies in ELT researches in order to enhance

English language acquisition and pedagogical skills, and 2) explore the grade levels of English language learners that AI technologies employed in the obtained studies. According to literature review, it could summarize that integrating AI technologies in ELT, emphasize its role in facilitating personalized learning experiences, improve language assessment practices, foster interactive language practice, support teachers, and raise awareness about ethical considerations in the use of AI technology in all grade level of English learners.

Research Methodology

To conduct the academic paper reviews on trends of using artificial intelligence (AI) technology in English language teaching (ELT), the following research method was adopted:

The research gathered relevant academic articles, research papers, conference proceedings that were selected by publication in 2021 and 2023. They were obtained from Education Resources Information Center (ERIC) database. This study used key terms to search for relevant studies that might include “Artificial Intelligence”, “English Language Teaching”, and “Teaching Strategies”

The search terms of “Artificial Intelligence”, “English Language Teaching”, and “Teaching Strategies” resulted in 70 articles in the ERIC but some studies had been published before 2021, therefore the selected research papers were 64 articles published between 2021 and 2023 by purposive sampling. And these 64 research articles would be analyzed the frequency of English language acquisition and pedagogies skills that used in the samples. The data was collected by investigating the main focus of using AI technologies from the obtained studies, then the data was analyzed the frequency of English language acquisition and pedagogical skills found in the studies, summarized, and discussed afterwards.

Research Results

The study reviewed recent studies on the trends of using AI technologies in ELT in terms of the integration of AI technologies in enhancing English language learning and pedagogy, and exploring the levels of English language learners that AI technologies employed in the studies. The results of the research showed that:

Table 1

AI technologies in Enhancing English Language Learning and Pedagogy

Research Aritcles	<i>AI-based English language learning and pedagogy</i>						
	<i>Listening</i>	<i>Speaking</i>	<i>Reading</i>	<i>Writing</i>	<i>Grammar</i>	<i>Vocabulary</i>	<i>Pedagogy</i>
1. Xu and Margevica-Grinberga (2021, pp. 13-23)							/
2. Wu et al. (2021, pp.70-83)				/			
3. McKnight (2021, pp. 442-455)				/			
4. Lin and Mubarok (2021, pp. 16-35)		/					

Table 1 (Continued)

Research Articles	AI-based English language learning and pedagogy						
	Listening	Speaking	Reading	Writing	Grammar	Vocabulary	Pedagogy
5. <u>Rybinski</u> and <u>Kopciuszewska</u> (2021: pp. 127-139)							/
6. Sumo and Bah (2021: pp. 264-270)							/
7. <u>Vittorini</u> , <u>Menini</u> , and <u>Tonelli</u> (2021: pp. 159-185)							/
8. Alsadoon (2021: pp. 135-157)						/	
9. <u>Sharadgah</u> and <u>Sa'di</u> (2022: pp. 337-377)							/
10. Sumakul, Hamied, and Sukyadi (2022: pp.232-256)							/
11. <u>Majid</u> and <u>Lakshmi</u> (2022: pp.11-16)							/
12. <u>Lesia Viktorivna</u> et al. (2022: pp. 262-273)							/
13. <u>Salas-Pilco</u> and <u>Yang</u> (2022: p. 21)							/
14. Chen et al. (2022: pp. 28-47)							/
15. Molenaar (2022: pp. 632-645)							/
16. <u>Du</u> and <u>Gao</u> (2022: pp. 357-384)							/
17. <u>Yang</u> and <u>Kyun</u> (2022: pp. 180-210)							/
18. <u>Yang</u> , <u>Kim</u> , <u>Lee</u> , and <u>Shin</u> (2022: pp. 327-343)		/					/
19. Burkhard (2022: unpagged)				/			/
20. Heugh et al. (2022: pp. 89-127)							/
21. Hsu (2022: pp. 792-815)							/
22. <u>Baranwal</u> (2022: pp. 1-17)							/
23. Gupta and Chen (2022: pp. 98-108)							/
24. Stockdale (2022: unpagged)						/	
25. Kim (2022: pp. 79-102)							/
26. <u>Khoo</u> and <u>Kang</u> (2022: unpagged)							/
27. Tantucci and Wang (2022: pp. 115-146)							/
28. <u>Hockly</u> (2023: pp. 445-451)							/
29. <u>An</u> et al. (2023: pp. 187-208)							/
30. Huang et al (2023: pp. 112-131)							/
31. <u>Bozkurt</u> (2023: pp. 198-204)							/
32. <u>Schäffer</u> and <u>Lieder</u> (2023: pp. 111-124)							/
33. Bonner et al. (2023: pp. 23-41)							/
34. <u>Yang</u> (2023: pp. 101-116)							/
35. Muñoz-Basols et al. (2023: pp. 171-194)							/
36. <u>Álvarez-Álvarez</u> , and <u>Falcon</u> (2023: pp. 709-724)							/
37. Xu et al. (2023: pp. 185-198)							/
38. Shah (2023: unpagged)							/
39. Adiguzel et al. (2023: p. 429)							/
40. Abdalkader (2023: unpagged)							/
41. <u>Pack</u> and <u>Maloney</u> (2023: pp. 71-82)							/
42. <u>Malakul</u> and <u>Park</u> (2023: unpagged)							/
43. Chu and Szigor (2023: unpagged)							/
44. Byrd (2023: pp. 135-142)							/
45. <u>Jeon</u> and <u>Lee</u> (2023: pp. 73-92)							/
46. Perkins (2023: unpagged)							/
47. <u>Ali</u> et al. (2023: pp. 135-147)							/

Table 1 (Continued)

Research Articles	AI-based English language learning and pedagogy						
	Listening	Speaking	Reading	Writing	Grammar	Vocabulary	Pedagogy
48. Balkir, Celik and Cepni (2023: pp. 67-79)				/		/	
49. <u>Hwang</u> et al. (2023: pp. 8-35)				/			
50. <u>Saadati</u> et al. (2023: pp. 48-71)							/
51. <u>Tülübas</u> et al. (2023: pp. 93-110)							/
52. <u>Pack</u> and <u>Maloney</u> (2023: pp. 4-24)							/
53. <u>Lee</u> et al. (2023: pp. 629-666)							/
54. Alexander et al. (2023: pp. 25-43)				/			
55. Costello et al. (2023: pp. 67-87)							/
56. <u>Escalante</u> et al. (2023: unpagged)				/			
57. <u>Kohnke</u> et al. (2023: pp. 537-550)							/
58. Zhao et al. (2023: pp. 31-63)				/			
59. Liu, and Chen (2023: pp. 5-20)						/	
60. Wallwork (2023: unpagged)					/		
61. Tai and <u>Chen</u> (2023: pp. 485-502)							/
62. <u>Shim</u> et al. (2023: pp. 65-88)							/
63. <u>Ehrensberger-Dow</u> et al. (2023: pp. 393-411)							/
64. <u>Ericsson</u> et al. (2023: unpagged)		/					
Total				64			
Frequency	0	3	0	8	1	4	49
Percentage	0	4.68	0	12.5	1.56	6.25	76.5
Rank	0	4	0	2	5	3	1

The results pointed the five most popular English language learning and pedagogy topics obtained from the study reviews were: (1) AI-technology based *pedagogies* (49 articles, 76.5%), (2) the AI-technology based *English writing* learning (8 articles, 12.5%), (3) the AI-technology based *English vocabulary* learning (4 articles, 6.25%), (4) the AI-technology based *English speaking* learning (3 articles, 4.68%), (5) the AI-technology based *English grammar* learning (1 article, 1.56%), while between 2021 and 2023, *English listening and reading* learning were not preferred to integrate AI technology with any articles.

Table 2

Levels of English Language Learners Using AI Technologies in the Studies

Research Articles	Levels of English Language Learners				
	Primary	Secondary	Tertiary	Graduate	Overall
1. Xu and <u>Margevica-Grinberga</u> (2021: pp. 13-23)					/
2. Wu et al. (2021: pp.70-83)			/		
3. <u>McKnight</u> (2021: pp. 442-455)					/

Table 2 (Continued)

Research Articles	Levels of English Language Learners				
	Primary	Secondary	Tertiary	Graduate	Overall
4. Lin and Mubarak (2021: pp. 16-35)			/		
5. <u>Rybinski</u> and <u>Kopciuszewska</u> (2021: pp. 127-139)			/		
6. Sumo and Bah (2021: pp. 264-270)			/		
7. <u>Vittorini</u> , <u>Menini</u> , and <u>Tonelli</u> (2021: pp. 159-185)			/		
8. Alsadoon (2021: pp. 135-157)			/		
9. <u>Sharadgah</u> and <u>Sa'di</u> (2022: pp. 337-377)					/
10. Sumakul, Hamied, and Sukyadi (2022: pp.232-256)			/		
11. <u>Majid</u> and <u>Lakshmi</u> (2022: pp.11-16)					/
12. <u>Lesia Viktorivna</u> et al. (2022: pp. 262-273)			/		
13. <u>Salas-Pilco</u> and <u>Yang</u> (2022: p. 21)			/		
14. Chen et al. (2022: pp. 28-47)					/
15. Molenaar (2022: pp. 632-645)					/
16. <u>Du</u> and <u>Gao</u> (2022: pp. 357-384)					/
17. <u>Yang</u> and <u>Kyun</u> (2022: pp. 180-210)					/
18. <u>Yang</u> , <u>Kim</u> , <u>Lee</u> , and <u>Shin</u> (2022: pp. 327-343)		/			
19. Burkhard (2022: unpagged)			/		
20. Heugh et al. (2022: pp. 89-127)			/		
21. Hsu (2022: pp. 792-815)					/
22. <u>Baranwal</u> (2022: pp. 1-17)			/		
23. Gupta and Chen (2022: pp. 98-108)			/		
24. Stockdale (2022: unpagged)					/
25. Kim (2022: pp. 79-102)			/		
26. <u>Khoo</u> and <u>Kang</u> (2022: unpagged)			/		
27. Tantucci and Wang (2022: pp. 115-146)			/		
28. <u>Hockly</u> (2023: pp. 445-451)					/
29. <u>An</u> et al. (2023: pp. 187-208)		/			
30. Huang et al (2023: pp. 112-131)			/		
31. <u>Bozkurt</u> (2023: pp. 198-204)					/
32. <u>Schäffer</u> and <u>Lieder</u> (2023: pp. 111-124)					/
33. Bonner et al. (2023: pp. 23-41)					/
34. <u>Yang</u> (2023: pp. 101-116)			/		
35. Muñoz-Basols et al. (2023: pp. 171-194)			/		
36. <u>Álvarez-Álvarez</u> , and <u>Falcon</u> (2023: pp. 709-724)			/		
37. Xu et al. (2023: pp. 185-198)		/			
38. Shah (2023: unpagged)					/
39. Adiguzel et al. (2023: p. 429)					/
40. Abdalkader (2023: unpagged)		/			
41. <u>Pack</u> and <u>Maloney</u> (2023: pp. 71-82)					/
42. <u>Malakul</u> and <u>Park</u> (2023: unpagged)		/			
43. Chu and Szlagor (2023: unpagged)			/		

Table 2 (Continued)

Research Articles	Levels of English Language Learners				
	Primary	Secondary	Tertiary	Graduate	Overall
44. Byrd (2023: pp. 135-142)					/
45. Jeon and Lee (2023: pp. 73-92)			/		
46. Perkins (2023: unpagged)			/		
47. Ali et al. (2023: pp. 135-147)		/			
48. Balkir, Celik and Cepni (2023: pp. 67-79)			/		
49. Hwang et al. (2023: pp. 8-35)			/		
50. Saadati et al. (2023: pp. 48-71)			/		
51. Tülübas et al. (2023: pp. 93-110)					/
52. Pack and Maloney (2023: pp. 4-24)					/
53. Lee et al. (2023: pp. 629-666)		/			
54. Alexander et al. (2023: pp. 25-43)			/		
55. Costello et al. (2023: pp. 67-87)					/
56. Escalante et al. (2023: unpagged)			/		
57. Kohnke et al. (2023: pp. 537-550)					/
58. Zhao et al. (2023: pp. 31-63)		/			
59. Liu, and Chen (2023: pp. 5-20)	/				
60. Wallwork (2023: unpagged)				/	
61. Tai and Chen (2023: pp. 485-502)		/			
62. Shim et al. (2023: pp. 65-88)			/		
63. Ehrensberger-Dow et al. (2023: pp. 393-411)					/
64. Ericsson et al. (2023: unpagged)		/			
Total			64		
Frequency	1	10	29	1	23
Percentage	1.56	15.6	45.3	1.56	35.9
Rank	4	3	1	4	2

As shown in the table 2, AI-technologies were integrated in conducting ELT studies and grade levels of learners that employed in the studies as the samples were categorized as: primary, secondary, tertiary, graduate, and overall educational settings. The results showed that, at the tertiary level was the most frequent AI-technology integrated with the articles (29 articles, 45.3%), followed by overall (23 articles, 35.9%), secondary level (10 articles, 15.6%), and an equal number of studies examined using AI-technologies at the primary level and graduate level (1 article, 1.56%).

Discussion

1. AI technologies in ELT

(1) *Pedagogical Implications*

AI technology may provide real-time feedback on a variety of language learning topics, including writing, grammar, vocabulary, and pronunciation. The students may learn more successfully and efficiently with the use of their individualized method. Additionally, one of the most important benefits of AI technology in ELT is to personalize each student's learning experience that are matched to their requirements and skills by evaluating student performance data and making recommendations for them. This new technology has the potential to enhance ELT in many ways that consist of personalized learning, real-time feedback, interactive activities, conversation practice, and adaptive learning. According to Chen (2018, p.1) and Davis (2020, p.1) who mentioned that artificial intelligence technology can support learner autonomy by giving students access to individualized learning resources and instant feedback. In fact, some experts pointed that the teachers should be facilitators in order to assist students in making efficient interactions among them and AI technologies. Han (2019, p. unpagged), Kholis (2021, unpagged), Godwin-Jones (2022, p. unpagged), Huang et al. (2023, p. 112.) conclude that in order to help the students identify areas for growth and work toward reaching their language learning goals, AI technologies can also assess their responses and provide them with quick feedback so the students can use AI technologies to learn independently and at their own preference: levels, speed, and location. To keep students motivated and interested, AI can also offer adaptive learning which modifies the level of lessons and activities based on their interest. The AI-powered tools can employ data analytics to pinpoint students' areas of difficulty and offer them specialized guidance to help them learn language more quickly. Finally, AI in ELT is a promising field for future study and development because its potential advantages for both teachers and students as long as technology keeps developing.

(2) *AI technology and writing*

According to numerous experts, Fitria (2021, unpagged), Fyfe (2022, unpagged), Gayed et al. (2022, unpagged), Godwin-Jones (2022, unpagged) mentioned that using AI-powered programs to help students with their writing assignments is acceptable. One excellent example of an AI-powered writing aid which is common use currently is *Grammarly*. By identifying grammar, spelling, punctuation, and style mistakes, it aids students in producing better writing. In order to improve the writing's efficacy and clarity, it also offers real-time recommendations and clarifications. The AI-powered writing programs generally function by evaluating content and offering recommendations for enhancements. On the one hand, AI functions have been added to basic program Microsoft Word, for example, to improve the writing experience for students who receive feedback on their writing. In order to assist them improve the quality of their writing, the AI features can also identify problems with clarity and conciseness. On the other hand, ChatGPT is another well-known writing platform powered by AI that helps users writes texts. The ChatGPT features include idea, feedback and suggestions, and language and vocabulary support. Nowadays, students have been using these features a lot, they can enhance their writing quality and expedite the process by utilizing the AI-powered tools to augment their own abilities. These programs, however, have limitations when it comes to comprehending the difference of context of language, which can lead to mistakes, therefore, using AI only to do an

essay assignment is not advised. While AI-powered writing tool might be useful for tasks like spelling and grammar checks, they cannot completely replace the analytical thinking abilities needed to produce an excellent essay. So the students still need to be aware of analyzing data in a writing to convey a clear idea as it is mentioned that the greatest approach to finish an essay assignment is the task should be combined students' own writing and critical thinking abilities with AI-powered platforms (Godwin-Jones, 2022: unpagged).

(3) AI technology and vocabulary

Applications with AI capabilities help students expand their vocabulary by highlighting unfamiliar keywords in texts and offering word meanings. According to Alsadoon (2021, p. 135) and Huang et al. (2023, p. 112), these characteristics can aid students in growing their vocabulary and improving their understanding of the materials they are reading. These apps can also improve learning and assist students in developing their speaking and listening skills by providing features like virtual assistants, interactive exercises, speech recognition, and personalized instruction (Ali, 2020, p. 135; Hapsari & Wu, 2022, p. 444; Huang et al., 2023, p. 112; Kholis, 2021, p. 1; Zhou, 2020, unpagged).

(4) AI technology and listening

Because they have elements that can improve learning, the AI-powered tool applications can also be very beneficial for improving speaking and listening abilities. These elements create a realistic and engaging practice environment by using natural language processing (NLP) to comprehend and react to students' speech (Hapsari & Wu, 2022, p. 444). Students can practice and improve their language abilities in an interactive and personalized way with AI-based speaking and listening tools. Additionally, AI can assist students in learning to speak and hear English in many ways, including interactive conversation practice, accent reduction and pronunciation improvement, speech recognition and assessment, listening comprehension exercises, and natural language understanding and response generation. In fact, an AI program that serves as a peer can accurately record and evaluate students' spoken words. It can also offer immediate feedback and pointers for growth by comparing their pronunciation, intonation, and fluency to native speakers. Furthermore, AI can participate in interactive conversations with students as virtual language tutors.

(5) AI technology and speaking

AI technology is able to pinpoint the precise pronunciation issues that the students need to work on, in order to help the student improve their accent and pronunciation. They also offer activities, comments, and samples of model pronunciation. Zhou (2020, unpagged) claims that an AI-powered application can provide speaking and listening tasks that shaped each student's interests and skill levels. Helping them become more proficient in English speaking, these exercises provide a range of dialects, speech velocities, and genres. Indeed, artificial intelligence (AI) technologies, such as ELSA Speak, and Duolingo, enable students to practice speaking and listening in English while using dialogues. The program also includes speaking activities with instant feedback, interactive exercises, and pronunciation practice (Handini et al., 2022, p. 85). To get the best outcomes, AI technology should be utilized in conjunction with real-world conversation practice with native speakers.

(6) AI technology and grammar

There are positive effects on language learners' ability to improve their English grammar by using AI technology. In fact, numerous studies have shown that using AI chatbots to learn a language can result in noticeable gains in grammar proficiency. Grammar checkers and other AI-based tools give students instant feedback on their grammar, which increases their prospects for learning outside of the classroom. These programs find and fix spelling, grammatical, and punctuation mistakes using sophisticated algorithms and machine learning techniques. These tools also assist writers in improving the language they use and making sure their work is error-free by providing real-time ideas and comments. Additionally, one of well-known examples of artificial intelligence software for spelling and grammar checking is *Grammarly*. Through individualized and interactive learning, artificial intelligence has the potential to improve communication abilities in English language learners. While AI has generally demonstrated promise in enhancing grammatical proficiency, more investigation is required to fully understand its long-term impacts and ideal incorporation within language learning settings.

(7) AI technology and reading

When studying English language, reading is a crucial ability. On the one hand, AI-powered reading aids are being utilized more frequently to assist language learners in developing their reading abilities. These AI-powered features include the characteristics that can help students who want to increase their vocabulary, comprehension, and general reading proficiency. According to Huang et al. (2023, p. 112), one of the most significant benefits of AI-powered applications is their ability to automate grading and provide feedback on reading comprehension exercises. Reading tasks can be turned in by students, and the AI tools can automatically score their work and offer suggestions for improvement. On the other hand, students can rapidly recognize their reading comprehension ability by using this feature, which can be quite helpful (Huang et al., 2023, p. 112). Text-to-speech technology, for example, is another advantage of AI-powered tool; it can translate written texts into audio files. With the use of this digital device, students can practice reading at a level that suits their present proficiency, which can boost confidence and enhance understanding. AI-enabled tools should be included to students' routine reading exercises to help them improve their comprehension and expand their capacity to read in a variety of settings continuously. Students looking to advance their English reading abilities can benefit from a variety of features provided by AI-powered tool (Lesia et al., 2022, p. 262).

2. Learner Levels

There are several levels of learners at which AI-technologies could be employed in research between 2021 and 2023: primary, secondary, tertiary, graduate, and overall of educational settings. The study revealed that the most common level at which AI technologies are integrated is *tertiary* level, aligned with research by Shim et al. (2023, p. 65), Escalante et al. (2023, unpagged), Alexander et al. (2023, p. 25), Balkir, Celik and Cepni (2023, p. 97), Hwang et al. (2023, p. 8), Saadati et al. (2023, p. 48), Jeon and Lee (2023, p. 73), Perkins (2023, p. unpagged), Chu and Szlagor (2023, unpagged), Yang (2023, p. 101), Muñoz-Basols et al. (2023, p. 171), Álvarez-Álvarez, and Falcon (2023, p. 9), Huang et al (2023, p. 112), Kim (2022, p. 79), Khoo and Kang (2022, unpagged), Tantucci and Wang (2022, p 115), Baranwal (2022, p. 1), Gupta and Chen (2022, p. 98), Burkhard (2022, unpagged), Heugh et al. (2022, p. 89), Lesia Viktorivna et al. (2022, p. 262), Salas-Pilco and Yang (2022, unpagged), Sumakul,

Hamied, and Sukyadi (2022, p. 232), Lin and Mubarok (2021, p. 16), Rybinski and Kopciuszewska (2021, p. 127), Sumo and Bah (2021, p. 264), Vittorini, Menini, and Tonelli (2021, p. 159), Alsadoon (2021, p. 135), Wu et al. (2021, p. 70).

According to the mentioned scholars above, on the one hand, tertiary level is defined as the most useful level for employing AI-technologies in ELT because the learners could applied advanced technology to their obtained English competencies, on the other hand, it could conclude that most of researchers who conducted these studies are lecturers and professors at university level.

Recommendation

Many experts identify a number of additional study and advancement in ELT settings. Researching the long-term effects of AI integration on language learning outcomes is crucial; according to scholars like Taylor (2023: p. 1), it is also important to look into how AI might support language skills outside of the traditional domains, like intercultural communication and cultural understanding. Furthermore, an additional study is required to comprehend how AI affects the students from various linguistic and cultural backgrounds.

Overall, AI technology has the potential that have a big impact on English language teaching and learning, according to the literature reviews. Enhancing individualized training, offering effective language testing, and encouraging learner autonomy are all possible with the incorporation of the AI tools. To optimize the advantages and minimize the difficulties related to AI integration, the pedagogical implications, ethical concerns, and the role of teachers should be considered carefully.

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