



AI AND ENGLISH EDUCATION: A DOUBLE-EDGED TOOL FOR STUDENT SUCCESS

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RESEARCH ARTICLE



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Abstract

The last several decades have seen a remarkable transformation in human life due to the development of artificial intelligence (AI). Every day, AI and its related applications carry out a variety of intelligent tasks in the areas of communication, speech recognition, language translation, healthcare, education, and economics. When AI was included in education, students' motivation, autonomy, engagement, self-efficacy, and personalised learning enhanced greatly. It improved the English language proficiency of non-native English speakers by helping them with various tasks like speaking, writing, and understanding. Sensing the significance of AI, the researchers in this study attempted to determine how AI affected students' English proficiency. The study used a systematic literature review approach to examine previous five-years publications. Results demonstrate students' use of AI and its various applications in their English language learning. Also, AI has both beneficial and detrimental effects on pupils' academic performance and English language acquisition.

Keywords: Artificial Intelligence, Achievement in English, EFL, English Language Learning, Technology.

Introduction

The last several decades have seen a remarkable transformation in human life due to the development of artificial intelligence (Abisheva et al., 2024; Crawford et al., 2024; Mandal & Mete, 2023). When AI was included in education, students' motivation, success, engagement, self-efficacy, and personalised learning enhanced greatly (Huang & Zou, 2024; Sugiarso et al., 2024; Jiang, 2022). AI revolutionises education, transforming teaching methods and student experiences by offering personalised learning and improved academic performance through its adoption (Adewale et al., 2024; Eltahir & Babiker, 2024; García-Martínez et al., 2023; Law, 2024; Yerbabuena Torres et al., 2024).

Integration of AI in English learning proved beneficial for improving the English language proficiency (Crompton et al., 2024; Kundu & Bej, 2025; Islam et al., 2024) of non-native English speakers by helping them with various tasks like listening (Suryana et al., 2020), speaking (Dennis, 2024; Li, 2022; Al Mukhallafi, 2020), writing (Aladini et al., 2025; Alkamel & Alwagieh, 2024; Kaharuddin et al., 2024; Nguyen et al., 2024; Zhao, 2023; Gayed et al., 2022) vocabulary and comprehension (Wang et al., 2024; Alsadoon, 2021). So, sensing the significance of AI in education and the English language, the researchers in this study attempted to find out the role of AI on students' English language learning and achievement in English through systematic review.

Research Questions

The researchers in the present study tried to find out the role of AI on students' achievement in English and their English language learning from the previous studies. For that, the study is guided by the following research questions:

1. How AI is integrated with students' English language learning?
2. What outcome did AI-based technology integration have on students' achievement in English?

Methodology

The researchers followed the Systematic Literature Review (SLR) approach. Systematic reviews are a scientifically designed approach to enquire about research questions (Dhiman et al., 2023; Iddagoda & Flicker, 2023). The Preferred Reporting of Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 flow diagram (Page et al. 2021) was used by the researchers for systematic exclusion and inclusion of reviewed articles.

Following the PRISMA guidelines, initially, 117 articles were identified from various databases i.e., Scopus, Elsevier, ResearchGate, Springer, etc. related to Artificial Intelligence's role in students' English language learning. Articles were hand-searched using different keywords like "AI" or "Artificial Intelligence" and "English language learning", or "academic achievement in English" or "achievement in English". After removing 04 duplicate articles in the identification stage, 113 articles were further screened based on their title and keywords. Then 35 were excluded out of 113 because they were not written in English and their keywords or area did not match with the aim of the researchers. Again 78 articles were assessed for eligibility, from which 47 articles (lacking proper format, written before 2020 and no access to full text) were removed. Finally, 31 articles that are written in English, published between 2020-2025, open-accessed and related to the present study's requirements are reviewed.

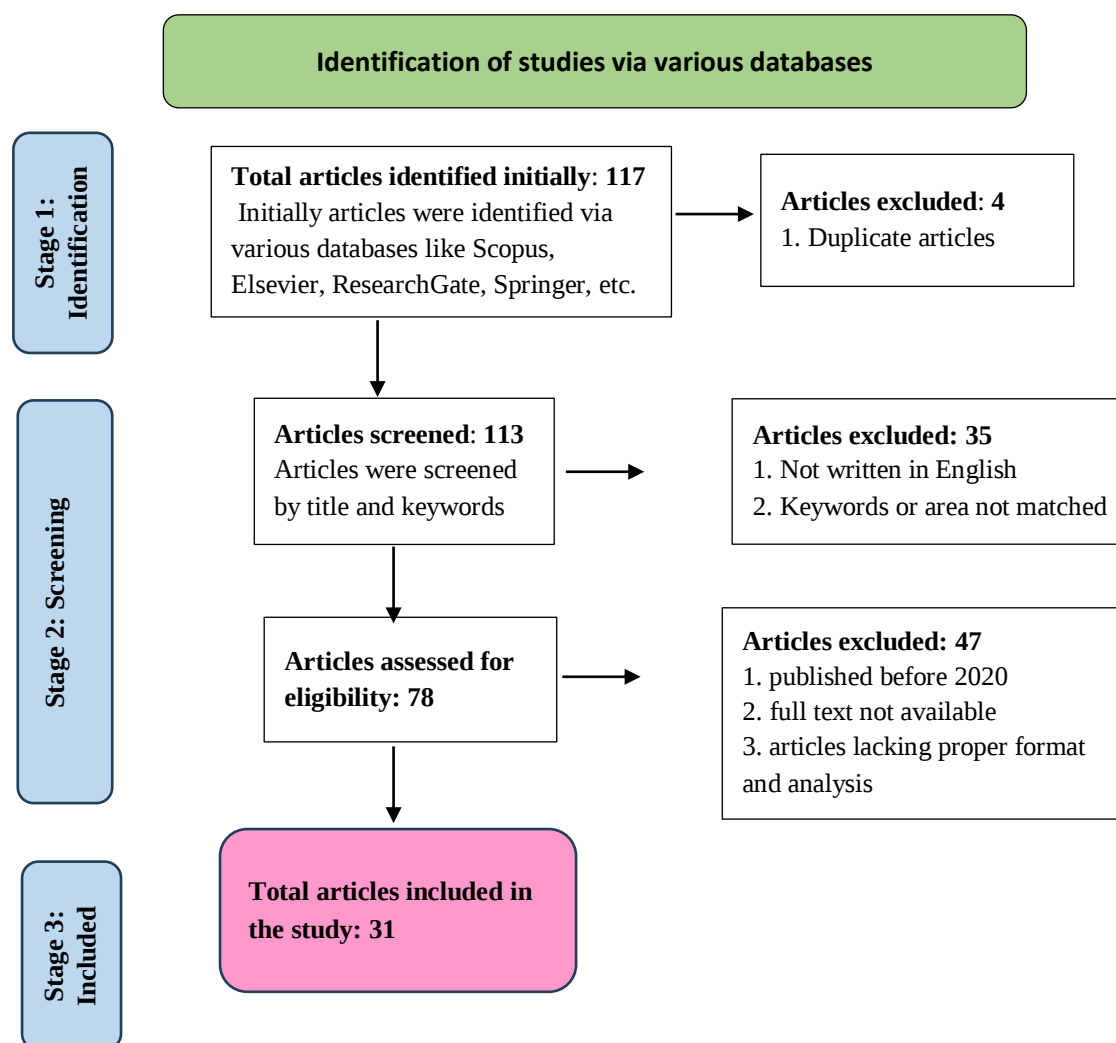


Figure 1. PRISMA 2020 flow diagram for systematic review. Source- Page et al. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. The BMJ, 372. <https://doi.org/10.1136/bmj.n71>

Results

Following the PRISMA guidelines, in the present study 31 articles were reviewed systematically. The articles were identified from different databases of the last five years (2020- 2025) related to the role of AI on students' achievement in English and English language learning. A detailed overview of the articles reviewed is presented in Table 1. The table includes the details of the authors, year of publication, title of the study, country or region where the study is conducted and objectives of the studies in sequence.

Table 1. Overview of the Articles Reviewed in the Study

Sl. No.	Author/s (Year)	Title of the study	Country/ Region	Objectives
1.	Aladini et al. (2025)	Self-directed writing development across computer/AI-based tasks: Unraveling the traces on L2 writing outcomes, growth	Iran	To examine the impact of computer- and AI-based tasks on L2 writing outcomes, growth mindfulness, self-directed writing

		mindfulness, and grammatical knowledge		development and grammatical knowledge
2.	Alkamel & Alwagieh (2024)	Utilizing an adaptable artificial intelligence writing tool (ChatGPT) to enhance academic writing skills among Yemeni university EFL students	Yemen	To study EFL learners' opinions, benefits, and challenges in using ChatGPT as an AI-based writing tool in academic writing
3.	Al-Raimi et al. (2024)	Utilizing artificial intelligence tools for improving writing skills: Exploring Omani EFL learners' perspectives	Oman	To inspect EFL learners' perceptions and practices towards utilizing artificial intelligence tools for enhancing their writing skills
4.	AlTwijri & Alghizzi (2024)	Investigating the integration of artificial intelligence in English as foreign language classes for enhancing learners' affective factors: A systematic review	--	To investigate the integration of AI in English and its impact on students' motivation, engagement, attitude and learning anxiety
5.	Alzahrani & Alotaibi (2024)	The Impact of Artificial Intelligence on Enhancing EFL Writing Skills among High School Students	Saudi Arabia	To examine the impact of ChatGPT, on EFL writing skills among high school students
6.	Barabad & Anwar (2024)	Exploring ChatGPT's Role in English Learning for EFL Students: Insights and Experiences	Iran	To explore the effects of ChatGPT on English language learning
7.	Crompton et al. (2024)	AI and English language teaching: Affordances and challenges	--	To examine the challenges and affordances for using AI in English Language Teaching
8.	Dennis (2024)	Using AI-Powered Speech Recognition Technology to Improve English Pronunciation and Speaking Skills	Thailand	To investigate the impact of AI-powered Speech Recognition Technology (AI-SRT) in improving English pronunciation and speaking skills among EFL learners
9.	Du & Daniel (2024)	Transforming language education: A systematic review of AI-powered chatbots for English as a foreign language speaking practice	--	To study the role of AI-powered chatbots in English-speaking practice
10.	Jamshed et al. (2024)	Assessing the Efficacy of Artificial Intelligence-Enabled EFL Learning and Teaching in Saudi Arabia: Perceptions, Perspectives, and Prospects	Saudi Arabi	To investigate Saudi EFL learners' perceptions, and prospects for AI-enabled learning and teaching
11.	Kaharuddin et al. (2024)	Defining the Role of Artificial Intelligence in Improving English Writing Skills Among Indonesian Students	Indonesia	To study the improvement of English writing skills through the integration of AI into reading practices
12.	Karataş (2024)	Incorporating AI in foreign language education: An investigation into ChatGPT's effect on foreign language learners. Education and Information Technologies	Turkey	To explore ChatGPT's effect on learners' language acquisition
13.	Khan et al. (2024)	Artificial Intelligence Tools in Developing English Writing Skills: Bangladeshi University EFL Students' Perceptions.	Bangladesh	To evaluate the effects of AI tools on the writing development of EFL tertiary-level students
14.	Khasawneh et al. (2024)	The blue sky of AI-assisted language assessment: autonomy, academic buoyancy, psychological well-being, and academic success are involved	Saudi Arabia	To investigate the relationships between AI-assisted language assessment and learners' autonomy, psychological well-being, and academic success

15.	Liu et al. (2024)	Exploring AI-mediated informal digital learning of English (AI-IDLE): a mixed-method investigation of Chinese EFL learners' AI adoption and experiences.	China	To examine the degree to which L2 learners accepted and leveraged AI-mediated informal digital learning of English (AI-IDLE)
16.	Mahapatra (2024)	Impact of ChatGPT on ESL students' academic writing skills: A mixed methods intervention study	India	To explore the impact of artificial intelligence-driven ChatGPT as a formative feedback tool on the writing skills of undergraduate ESL students
17.	Pasang et al. (2024)	Impact of ChatGPT on ESL students' academic writing skills: A mixed methods intervention study	Indonesia	To find out the impact of the Kuki Chatbot application on improving English achievement of students
18.	Pitura (2024)	Enhancing advanced vocabulary in EFL writing: an AI-assisted intervention for English studies students in Poland	Poland	To investigate the effectiveness of an AI-assisted tool in enhancing students' vocabulary and writing
19.	Polakova & Ivenz (2024)	The impact of ChatGPT feedback on the development of EFL students' writing skills	Europe	To examine the effectiveness of ChatGPT on writing skills of English as a Foreign Language (EFL) students
20.	Seelro & Khan (2024)	Exploring the Benefits and Challenges of ChatGPT in Enhancing ESL Learners' Writing Skills.	Pakistan	To investigate the advantages and difficulties of ChatGPT in enhancing the English writing proficiency of university-level students
21.	Shahid et al. (2024)	An Exploration of Effectiveness of Artificial Intelligence (AI) Tools in English Language Learning at the Undergraduate Level in Pakistan	Pakistan	To investigate the efficacy of artificial intelligence-powered tools on undergraduate EFL learners
22.	Waluyo & Kusumastuti (2024)	Generative AI in student English learning in Thai higher education: More engagement, better outcomes?	Thailand	To explore the role and effectiveness of generative AI in enhancing English language education
23.	Wang et al. (2024)	Empirical Assessment of AI-Powered Tools for Vocabulary Acquisition in EFL Instruction	--	To assess the effects of AI-based tools on vocabulary acquisition of EFL students
24.	Zhai et al. (2024)	Evaluating the AI dialogue System's intercultural, humorous, and empathetic dimensions in English language learning: A case study	--	To observe the effectiveness of an AI dialogue system, Multidimensional Approach Culture, Humor, and Empathy Bot (MACHE-Bot), in uplifting the English language learning
25.	Kumar (2023)	Investigating the Impact of Artificial Intelligence AI and Technology in English Language Learning	Pakistan	To study the impact of AI and technology on English language learners in Pakistan
26.	Marzuki et al. (2023)	The impact of AI writing tools on the content and organization of students' writing: EFL teachers' perspective	Indonesia	To examine the perception of EFL teachers regarding the influence of AI writing tools on student writing, content and organisation
27.	Song & Song (2023)	Enhancing academic writing skills and motivation: Assessing the efficacy of ChatGPT in AI-assisted language learning for EFL students	China	To find out the efficacy of ChatGPT in enhancing academic writing skills and motivation of Chinese EFL students
28.	Wei (2023)	Artificial intelligence in language instruction: Impact on English learning achievement, L2	China	To examine the effects of AI-mediated language instruction on

		motivation, and self-regulated learning		English learning achievement and motivation of EFL learners.
29.	Zhai & Wibowo (2023)	A systematic review on artificial intelligence dialogue systems for enhancing English as foreign language students' interactional competence in the university	--	To examine the use of AI dialogue systems to enhance EFL university students' interactional competence
30.	Alsadoon (2021)	Chatting with AI Bot: Vocabulary Learning Assistant for Saudi EFL Learners	Saudi Arabia	To investigate EFL students' vocabulary learning using AI-Bot
31.	Han (2020)	The Effects of Voice-based AI Chatbots on Korean EFL Middle School Students' Speaking Competence and Affective Domains	Korea	To examine the effects of voice-based AI chatbots on Korean EFL middle school students' speaking competence, motivation and anxiety.

Table 1 shows the overview of the articles related to AI and AI-based technology used especially for English language learning of students. The table gives the information related to the authors, year of publication and title of the studies. It also mentioned the country or region where those studies were conducted and the objectives of the studies. It can be seen that most of the studies were conducted in foreign countries i.e. Saudi Arabia, China, Thailand, Pakistan, Iran, etc., but only one study was done in India related to AI-based technology use in English language learning. The studies aimed to find out the effects of AI and AI-based tools on students' achievement in English, their language skills, vocabulary, comprehension, etc.

Table 2. Overview of the AI Technologies Used in the Articles and Its Results

Sl. No.	Author/s & Year	AI/ AI-based technology integration in English learning (as found in reviewed articles)	Method of the study	Result of AI integration on students' achievement in English (as found in reviewed articles)
1.	Aladini et al. (2025)	Use of AI in writing tasks of 561 intermediate-level EFL learners	Quasi-experimental research	AI improved writing and grammatical accuracy
2.	Alkamel & Alwagieh (2024)	ChatGPT in academic writing of 144 university-level students	Quantitative research approach	ChatGPT improved writing fluency, accuracy, and overall quality of student's writing
3.	Al-Raimi et al. (2024)	Use of AI in writing skills of 61 students	Descriptive survey method	AI helped in writing and generating ideas for writing
4.	AlTwijri & Alghizzi (2024)	AI applications are used to improve English	Systematic review	AI applications improved student's competencies in English
5.	Alzahrani & Alotaibi (2024)	AI in English Language Teaching	Experimental method	AI improved students' four language skills and vocabulary, comprehension skills
6.	Barabad & Anwar (2024)	ChatGPT on English language learning	Cross-sectional survey method	ChatGPT improved learners' vocabulary, listening, reading, speaking, and writing abilities
7.	Crompton et al. (2024)	AI uses in English Language Teaching	Systematic review	AI positively impact students' four skills of language, comprehension and vocabulary
8.	Dennis (2024)	AI-powered Speech Recognition Technology (AI-SRT) in English pronunciation and speaking skills of 25 university students	Mixed-methods approach	Positive impact of AI-SRT on EFL learners' pronunciation and speaking skills
9.	Du & Daniel (2024)	AI-powered chatbots for English-speaking practice	Systematic review	AI chatbot sped up the English learning process and assisted students in speaking practice
10.	Jamshed et al. (2024)	AI integration in English language learning	Descriptive survey design	AI integration enhanced student's English learning and motivation
11.	Kaharuddin et al. (2024)	Integration of AI into reading practices	Descriptive survey	AI played a facilitating role in the reading skills of students

12.	Karataş (2024)	ChatGPT's effect on 13 preparatory class students' language learning and motivation	Qualitative case study	ChatGPT positively affected students' writing, grammar, and vocabulary acquisition, and enhanced their motivation
13.	Khan et al. (2024)	AI in English writing skills	Mixed-method	AI has both positive and negative impacts on student's writing skills
14.	Khasawneh et al. (2024)	AI-integrated Computer-Assisted Language Assessment (ICALA) impact on students' autonomy, buoyancy, psychological well-being, and academic success of 391 university students	Descriptive survey	ICALA positively impact students' motivation, interest and academic success, enhancing their language skills
15.	Liu (2024)	AI-mediated informal digital learning of English (AI-IDLE) on 867 Chinese students English learning	Mixed-method design	AI-IDLE positively impact student's English language skills, their adoption and experiences
16.	Mahapatra (2024)	ChatGPT in writing skills of undergraduate ESL students	Mixed-method design	Positive impact of ChatGPT on students' academic writing skills
17.	Pasang et al. (2024)	Kuki Chatbot impact on achievement in English	Experimental method	Kuki Chatbot improved in students' English achievement
18.	Pitura (2024)	AI integrated tool on vocabulary and writing of 71 first-year English Studies students	Quasi-experimental study	Findings highlighted the positive impact of AI-assisted instruction in enhancing the advanced vocabulary and writing of students
19.	Polakova & Ivenz (2024)	ChatGPT in writing skills of 110 university students	Mixed-method design	ChatGPT improved various aspects of writing, including conciseness, grammar
20.	Seelro & Khan (2024)	ChatGPT in improving English language writing abilities	Qualitative method	ChatGPT improved the writing of students, including grammatical precision, vocabulary and syntax, but it decreased the critical thinking skills.
21.	Shahid et al. (2024)	AI tools in English language learning of 67 ESL undergraduate students	Descriptive survey	The use of various AI tools improved English language skills
22.	Waluyo & Kusumastuti (2024)	AI in English language skills of 25 university students	Mixed-method design	AI improved language skills, efficiency and engagement
23.	Wang et al. (2024)	AI tools on 110 second-year university student's vocabulary learning	Descriptive survey	AI-powered language learning platforms positively impact English vocabulary learning
24.	Zhai et al. (2024)	AI bot, Multidimensional Approach Culture, Humor, and Empathy Bot (MACHE-Bot), in English language learning of 37 EFL learners	Case study	MACHE-Bot adeptly enhanced the motivation learning process of students.
25.	Kumar (2023)	AI technology on English language learners of 49 university students	Descriptive survey	AI technology enhanced English language learning and built an engaging environment
26.	Marzuki et al. (2023)	AI tools on writing skills of EFL students	Case study design	AI writing tools positively improved their students' writing
27.	Song & Song (2023)	ChatGPT in enhancing academic writing skills and learning motivation of 50 EFL students	Mixed-method design	ChatGPT significantly improved both writing skills and learning motivation
28.	Wei (2023)	AI-mediated language instruction on English learning achievement of 60 university students	Mixed-method design	AI-mediated instruction positively enhanced students' achievement in English
29.	Zhai & Wibowo (2023)	AI dialogue systems in university students' speaking and interactional competence	Systematic review	AI dialogue systems improved students' speaking and interactional competency

30.	Alsadoon (2021)	AI-Bot (dictionary, images, L1 translation tool, and concordance) on vocabulary learning of 20 EFL students	Experimental study	Results show dictionary is the most favoured and effective AI tool for vocabulary learning
31.	Han (2020)	AI chatbots impact on speaking competence of 44 EFL	Experimental study	AI chatbot effectively improved the speaking ability

Table 2 represents the various ways in which the AI-based tools were integrated with students' English language learning by the previous investigators. It also discussed the method of research adopted by them and the results found after the application of AI-based technology in student's English language learning. It can be seen that out of 31 studies reviewed, investigators in most of the studies have adopted the Descriptive survey method (9), Mixed-method design of research (8), Experimental design (6), Systematic review (4), etc. Again, out of 31 studies reviewed, in 7 studies investigators dealt with ChatGPT's application in the English language, 5 studies dealt with various AI chatbots application, and the rest of the studies looked into AI or AI-based various tools applications in students learning and achievement in English.

Discussion

RQ. 1. How AI-based technology was integrated with students' English language learning?

The investigators of the articles reviewed in the present study, integrate AI-based technology into student's English language learning in various ways. Data from Table 2 depicts that most of the investigators, AlTwijri & Alghizzi (2024), Alzahrani & Alotaibi (2024), Jamshed et al. (2024), Shahid et al. (2024), Waluyo & Kusumastuti (2024), Kumar (2023), and Wei (2023) studied the effect of AI on overall English language learning of students. Barabad & Anwar (2024), Karataş (2024) and Pasang et al. (2024) use ChatGPT in students English learning. Again, Khasawneh et al. (2024) surveyed AI-based Computer-Assisted Language Assessment (ICALA) influence on students' success in English, Liu (2024) researched AI-mediated informal digital learning of English (AI-IDLE), Pasang et al. (2024) used and Zhai et al. (2024) integrate Multidimensional Approach Culture, Humor, and Empathy Bot (MACHE-Bot), in students English language learning.

On the other hand, Wang et al. (2024) used various AI-based tools and Alsadoon (2021) included AI-Bot in the vocabulary learning of the students.

Aladini et al. (2025), Al-Raimi et al. (2024), Khan et al. (2024), Pitura (2024) and Marzuki et al. (2023) used AI and AI-based tools in writing tasks of students. Alkamel & Alwagieh (2024), Mahapatra (2024), Polakova & Ivenz (2024), Seelro & Khan (2024) and Song & Song (2023) included ChatGPT tools to improve the writing skills of students.

To find out the effects of AI-based technology on students speaking skills, Dennis (2024) AI-powered Speech Recognition Technology (AI-SRT) in his study, Du & Daniel (2024) used AI-powered chatbots, Zhai & Wibowo (2023) used AI dialogue systems and Han (2020) integrated AI chatbots.

RQ.2. What outcome did AI-based technology integration have on students' achievement in English?

The systematic review of previous articles done in this study showed that the integration of AI-based technology in English language learning had both positive and negative outcomes on students' achievement in English. Inculcation of various AI-based tools, AI-bots, ChatGPT in the language learning of students improved their writing (Aladini et al., 2025; Khan et al., 2024; Marzuki et al., 2023), vocabulary (Wang et al., 2024; Alsadoon, 2021), speaking (Dennis, 2024; Zhai & Wibowo, 2023), comprehension and overall language learning. It also enhanced their, motivation (Jamshed et al., 2024; Karataş, 2024; Zhai et al., 2024; Song & Song, 2023), learning engagement (Waluyo & Kusumastuti, 2024), self-learning skills, grammatical precision (Aladini et al., 2025; Polakova & Ivenz, 2024), etc. But the negative effects of AI's integration in learning as highlighted by the investigators are decreased critical thinking skills (Seelro & Khan, 2024), originality, increased dependency, (Khan et al., 2024) and so on.

Conclusion

AI and AI-based tools have immensely impacted our lives. Every day, AI and its related applications carry out a variety of intelligent tasks in the areas of communication, speech recognition, language translation, healthcare, education, and economics. English is one of the important languages in the modern era and many non-native speakers of English face many difficulties. Results of previous studies showed that AI plays a great role in English language learning as well by guiding learners in writing, speaking, and listening skills of language and also in improving vocabulary and grammatical accuracy. It also increases motivation, engagement, and self-learning skills among students leading to their overall better achievement in English. So, steps should be taken in future to integrate AI with English language learning and teaching to improve the outcomes of students. But it should also be used properly to not lose one's own creativity and originality of thinking and too much dependency on AI should also be avoided.

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