

# Pedagogical and Ethical Implications of Artificial Intelligence in EFL Context: A Review Study

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## Abstract

In the contemporary world, technology is advancing and being integrated in various sectors, impacting human lives in many ways. When the conversation on technological advancements emerges, one of the most prevalent topics is artificial intelligence (AI). AI has gradually developed into an integral part of human lives, with its application being common in finance, healthcare, security, and education. In education, AI can be integrated into English as a Foreign Language (EFL), leading to the introduction of a dynamic realm with profound ethical and pedagogical dimensions. The current study focuses on the interaction between EFL education and AI technologies by analyzing the obstacles and opportunities that might emerge. Pedagogically, AI has multiple advantages to any EFL education setting, which include targeted feedback, automated grading, and personalization of learning experiences, especially for learners with disabilities. However, the use of AI leads to some concerns, including the exclusion of the chance for learning to engage in creative and critical thinking. It is also associated with the possible dehumanization of the learning process and biases that might result from the use of AI software. Also, using AI in an EFL setting raises various ethical concerns, including personal data privacy, academic dishonesty, and a decline in job security for teachers. When teachers do not feel that their jobs are safe, their motivation is likely to decline. Also, using AI in an EFL setting raises concerns such as the loss of cultural nuances and an unhealthy reliance on technology. Thus, there needs to be a balance whenever AI is used in an EFL education setting for the sake of protecting educational objectives and adhering to the ethical standards expected of such settings. This paper highlights the use and impact of AI on EFL pedagogically and the risks and ethical concerns associated with such adoptions. The study is based on the understanding that the multiple benefits associated with the use of AI in education come with challenges that necessitate a balanced approach to implementation.

**Keywords:** artificial intelligence, pedagogical implications of AI, ethical considerations of AI, Saudi

## 1. Introduction

AI has become among the leading technologies that are focused on empowering machines and computer systems with abilities that simulate human intelligence. Thus, AI is a set of technologies that enable computer systems to engage in intellectual processes that were traditionally exclusively associated with human beings. Thus, AI is considered a computer science field that specializes in solving challenges associated with cognition, including learning, problem-solving, and pattern recognition (Fitria, 2021). Apart from simulating human cognition, reasoning, problem-solving, and decision-making, AI has developed to include a wide range of applications in various sectors, reshaping human lives and how they undertake their various endeavors. AI has conspicuously advanced in terms of how it is applied in fields such as healthcare, criminal justice, finance, national security, smart cities, and transportation (Kilanko, 2022). Recently, the use of AI in EFL education has conspicuously grown. Integrating AI into EFL Education settings is associated with multiple benefits, with multiple literature sources agreeing on the potential benefits of AI to language learning and teaching. Various AI applications that incorporate analytical mechanisms, such as Natural Language Processing (NLP), Machine Learning (ML), Affective Computing (AC), and Artificial Neural Networks (ANNs), have potential benefit to English as a Foreign Language (EFL) settings (Layali & Al-Shlowiy, 2022). Such applications are believed to have impacts that are so major that they can revolutionize EFL education. However, excitement about the promise of AI in EFL settings is neutralized by ethical risk, among other challenges that have been reported by stakeholders. AI-learning programs are a threat to the fundamentals of any learning process, such as human interactions and

critical thinking. This literature review highlights AI's pedagogical influence and any ethical concerns and potential risks that might be associated with the addition of AI technologies to English as a Foreign Language (EFL) education.

## 2. Methodology

The review of literature, as presented herein, uses a structured approach of identifying and analyzing studies, journals, research papers, and academic research associated with the application of AI in EFL settings and the related risk and ethical concerns. To achieve the intended goals, the following steps were followed:

(1) Research objectives' definition: The first step of this study was to distinctly outline the objectives of the entire engagement. The primary focus was to analyze the impact of AI on EFL education, the potential implications on language learning, the risks involved, and the emerging ethical concerns. The research questions may include pedagogical benefits and any risks that educators should be aware of before integrating AI into EFL learning settings.

(2) Identifying Relevant Literature: Though an extensive search was considered necessary, it was important to ensure the relevance of all the sources reviewed and referenced in this study. Thus, the keywords "Artificial Intelligence (AI)," "Pedagogical implications," and "English as a foreign language (EFL)" were used to identify the most relevant sources.

(3) Criteria for selecting methodology: The selected literature was evaluated using a methodical line of action. The authenticity of the studies referred to was determined on the basis of their association with the current study's objectives, quality of methodologies, the date of publication, and the question of whether they were peer-reviewed sources. No source published before 2015 was used.

(4) Compilation and Analysis of Data: Upon rigorously examining the identified sources, a focus shifted to the analysis of aspects such as findings, methodologies, and statistics. The data collection process was methodological and incorporated text-based identification of patterns, recurring themes, and trends relating to the relationship between the variables under study.

(5) Research Gap and Limitations' Acknowledgment: This phase focused on identifying the gaps and limitations of the reviewed sources. The gaps were recognized in a manner that created an avenue for future studies related to the current topic.

(6) Results' Compilation: Thus, findings, interpretations, implications, and conclusions of this study were compiled in compliance with the structure of a literature review article, with emphasis on areas such as introduction, methodology, literature review, review, and recommendations for future practice.

## 3. Pedagogical Implications of AI in EFL

From a pedagogical perspective, integrating AI tools can be a way of enhancing the quality of EFL education. Virtual learning tutors and advanced chatbots are associated with an enhanced ability to provide customized feedback in a way that facilitates conversational engagements and helps learners improve grammar. Also, AI-powered language assessment tools enhance the assessment of learners' performance and avail precise recommendations based on identified needs. Such advancements enhance learners' ability to develop autonomy and also improve their engagement in a way that improves the learning outcomes. Also, when AI is utilized in the EFL domain, there are multiple advantages that come forth. This is because AI enables personalized learning experiences and creates unique approaches for addressing the needs of each learner. AI-driven learning programs provide accurate feedback on language areas such as vocabulary, grammar, and pronunciation. AI application creates a scenario where each learner can develop at their own pace.

Utilizing technology-driven resources facilitates learning for all students regardless of the schedule and geographical constraints that might emerge under traditional educational settings. Online learning applications and platforms allow students to learn at the time of their convenience to introduce flexibility in the way students learn. AI chatbots are available at any time and at the convenience of the learners, including on their mobile phones, a factor that is attributed to the ability of AI to create a quasi-virtual library that creates a powerful learning tool (Aithal & Aithal, 2023). Thus, each learner will be able to work at their own pace and at a time of convenience. It is also an opportunity for learners to determine what works for them and what does not without having to rely on their educators. Also, such an environment enables learners of different backgrounds to access top-tier education with minimal costs that are often associated with transport and accommodation.

Students have the opportunity to go into a wide array of language resources, including online dictionaries, language models, and genuine materials, to enhance their understanding and proficiency. When AI-based tools are

integrated, EFL teachers can develop the ability to optimize teaching struggles in a way that enhances the possibility of meeting the diverse needs of their students (Rudolph et al., 2023; Koraishi, 2023). Using AI-powered platforms in EFL settings introduces multiple learning resources for learners and educators that can improve language learning experiences in multiple ways. AI-driven language platforms also have online dictionaries, which enable learners to easily look up translations, definitions, and examples of how words or phrases are used. The ability to have real-time access to vocabulary enables students to develop a strong linguistic foundation and widen their word choice. AI-powered platforms also offer a range of authentic language materials, including research papers, news stories, articles, videos, literature, and podcasts. Such resources expose learners to how language is used in real-world settings and enable them to comprehend nuances of language in a way that promotes natural language acquisition. Despite having some limitations, such as making up unreliable information and creating fake citations, AI effectively provides information (King & ChatGPT, 2023; Koraishi, 2023; Rudolph et al., 2023).

Using AI-powered virtual reality (VR) and augmented reality (AR) creates an opportunity to subject learners to authentic learning experiences. When VR techniques and AI are combined, the efficiency of EFL sessions is significantly improved (Li et al., 2020). VR and AI technologies can virtually take students to different cultural contexts, enabling them to have first-hand encounters with language in real-world settings. Using such a method increases learners' motivation and enhances the learning process. For instance, learners could virtually experience a busy street in Washington, DC, a bustling market in South Africa, and a beach in the Bahamas, giving them a glimpse of the diverse cultures where English is spoken and how the language applies to different situations. According to a study by Yang (2022), most universities and colleges still use traditional English teaching mechanisms. In the college class that was studied, VR techniques and AI were used to teach English, and the outcomes revealed that they formed a highly efficient combination for teaching English.

Because of technological advancements, mobile phones have become integral in human life to the point that most people would agree that they are inseparable from their phones. In the contemporary world, mobile phones are capable of more than facilitating calls and sending text messages. They also have multiple learning applications that are viable for EFL settings. Integrating AI in such applications makes mobile phones even more potent for learning endeavors (Arini et al., 2023). Such applications can be used in EFL contexts, as seen in the findings from the study undertaken by Arini et al. (2023). AI-based mobile learning applications can easily be downloaded from the Play Store.

A study on the use of mobile apps in EFL education settings reveals some insightful patterns. In the study, an app was developed in a manner that there were several levels users were expected to complete. It is only upon the completion of a level that one is allowed to attempt the next one. The levels included speaking, grammar, and listening, all with varying difficulty levels. The results from this study revealed that the app had a positive impact on EFL learners despite having room for improvement.

In different studies, a web-based chatbot was used as a native-speaking waiter, while five of the participating students played the role of customers (Ayedoun et al., 2015; Huang et al., 2022). Results from the study revealed that learners participating in such an activity experienced an increase in self-confidence and were motivated to speak English more. When such applications are used, learners improve their lingual skills using tools that are easily available to them on their phones, thus creating the convenience of choosing when and where the tool can be used to improve language.

AI offers unique resources that converge remarkable flexibility and adaptability in creating learning experiences for students, including those with special needs. Not everyone can speak to communicate. People with speech-related disabilities need appropriate ways of self-expression (Zdravkova et al., 2022). Using AI makes learning experiences personalized and tailored to the aptitude and place of each learner. The result is invaluable one-on-one attention that can respond to specific learning challenges and objectives. Among the noteworthy AI tools developed to enable individuals with special needs is Microsoft Translator, an AI-assistive device designed to enable students with hearing impairments to attain real-time transcriptions of audio in written form. Google's Lookout also helps visually impaired learners to identify objects, convert texts into audio forms, and provide cues on one's environment. Speechify Text Reader can also be used to turn texts into audio to facilitate learning for people with low vision, ADHD, IFTTT, and dyslexia. Haptic Communication (HC) enables people with vision or hearing impairment to communicate using the sense of touch (Ozioko & Dahiya, 2022).

Gamification has also been used in EFL education settings. In such a context, Gamification is referred to as the integration of game mechanics, elements, and principles in learning curricula and activities. When AI comes into the picture, gamification increases sophistication and captivation in a way that motivates learners and makes their

learning experiences enjoyable. AI can analyze data on aspects such as student behavior to optimize the impact of Gamification and determine the game elements that are most appropriate for learners of different profiles. Gamification is one of the ways through which language learning can be made fun and engaging because of the possibility of including elements such as point accumulation, acquisition of badges, interactive challenges, and leaderboards. Such features captivate learners and promote their active participation in class (Mahadi, 2023). When educators introduce friendly competition in gamified language learning, they can motivate learners to increase efforts toward improving their educational outcomes. If real-world settings are incorporated into such games, learners benefit from being able to apply and practice their language skills in a way that prepares them to use the same skills in their daily lives. Game scenarios, narratives, and content can be used to introduce cultural aspects exp, expose students to diverse cultural contexts, and improve their comprehension of the language being taught.

AI software systems can be used to improve the integrity of examinations and facilitate the detection of specious conduct to alert educators. Institutions use auto-proctoring systems that use facial recognition to prevent dishonesty during exams. Remote proctoring has proved to be viable in numerous education settings because it enables learners to take online exams from locations of their convenience, enabling them to save on costs and time (Babitha et al., 2022). Such systems are considered reliable because they use web cameras, web browsers, and microphones and perform keynote analysis to enable the detection of any movements that might indicate inappropriate conduct during online exams. Such a system also reduces the workload for educators.

AI technology has been used by educators to provide targeted feedback to learners. AI enables teachers to use data-driven analytics and insight in a way that facilitates personalized feedback that is tailored to the specific needs of each learner, a factor that promotes learners' growth and allows the personalization of instructions (Vera, 2023). AI also enables monitoring of learners' personal developments and maintains conversations that are focused on the learners with the intention of encouraging them to plan for and assess their progress (Wollny et al., 2021). Automated writing evaluation (AWE) is another technology that impacts education. AWE is a machine learning-based system that offers feedback to students on various aspects of their writing, including punctuation, grammar, spelling, sentence structure, and overall coherence (Zhang & Hyland, 2018; Yang, Gao & Shen, 2023). As far as the efficacy of AWE feedback is concerned, some studies found that such feedback enhances learners' writing skills by reducing the errors made (Al-Inbari & Al-Wasy, 2022; Liao, 2016; Lu, 2019; Wang et al., 2013). Additionally, AWE reduces vocabulary, spelling, and grammatical mistakes (Liao, 2016; Song, 2019; Tan, 2019; Yang, Gao, & Shen, 2023). Some studies show that using corrective feedback can promote the enhancement of writing skills (Zhang & Hyland, 2018).

AI tools analyze large amounts of data that facilitate the comprehension of individual learners' weaknesses, strengths, and learning patterns. Having such insight enables educators to generate accurate and personalized feedback for each learner instead of giving general responses. Such an approach to analysis also enables the tailoring of learning experiences to the needs of each student.

Automatic grading systems are among the AI-enabled technologies that have had a significant impact on education. They are purposed at streamlining the grading process by employing machine learning algorithms in assessing students' assignments and providing prompt feedback. Such a possibility enables teachers to save time while also providing timely, objective, and unbiased grading (Vera, 2023). Teachers can also use AI in processing assignments to enable them to dedicate more time and effort to important tasks, including personalized instruction, lesson planning, and student support. AI-driven grading systems can manage many assignments simultaneously. Thus, it is a highly scalable option for institutions with many students or programs running simultaneously. Such practice enables students to get timely feedback regardless of the number of enrolments for the courses they take. Real-time feedback from the automatic grading system facilitates learners' active engagement because mistakes can be viewed and addressed promptly. AI chatbots facilitate the automation of the evaluation of language performances in learners, including in exercises such as language evaluation and short answer assessments. Such a viewpoint is backed by empirical evidence demonstrating that automated evaluation positively impacts educational outcomes (Pérez et al. 2020; Wollny et al.; 2021 Huang et al. 2022; Klimova and Seraj (2023).

#### **4. Ethical Implications and Risks of AI in EFL Context**

The infusion of Artificial Intelligence (AI) into English as a Foreign Language (EFL) education has ignited a blend of anticipation and concern. AI's transformative influence on tailored learning, accessibility, and efficiency is accompanied by a cascade of ethical intricacies demanding thoughtful examination. More importantly, as AI's capabilities advance in orchestrating language acquisition, its ethical connotations within the EFL domain warrant

a probing analysis especially dimensions related to safeguarding data privacy, scrutinizing algorithmic biases, tackling job displacement, gauging cost-effectiveness, and pondering over technological dependency. The challenge at hand is to find equilibrium between technological ingenuity, the interpersonal dynamics of educator-student interaction, and the overall societal welfare. This calls for a concerted collaboration among policymakers, educators, researchers, and industry stakeholders. The current literature review examines and analyzes the ethical facets linked with the assimilation of AI within the context of EFL instruction.

The integration of AI into language learning experiences intricate obstacles related to cultural context, idiomatic intricacies, and nuanced language utilization. The fusion of language and culture is intricate, and learners who lean solely on AI-generated content risk overlooking cultural sensitivity and comprehension. AI tools fall short in grasping the subtle shades and emotional undercurrents of our language, sometimes suggesting responses that are out of place or inaccurate (Haleem et al., 2022). Throughout the continuum of AI training, cultural perspectives and diversity are regrettably overlooked, neglecting the ethical and cultural dimensions of correctness and propriety (Goffi et al., 2021). The application of AI methodologies in education continually grapples with the impact of cultural and ethical elements (Kladko, 2023). In most cases, AI-driven tools fail to capture critical information including regional variations, accents, dialects, and idiomatic expressions inherent in EFL learning owing to their internal limitations. This unintendedly might foster a standardized, yet potentially culturally prejudiced portrayal of the language.

The increasing reliance of educational institutions on AI-driven solutions present significant risks: the potential for educators and learners to overly depend on technology. Over time, this strong reliance could unintentionally sideline important traditional teaching methods, thus undermining the development of crucial skills like critical thinking and effective problem-solving. Relying too heavily on AI tools might hinder students from understanding their mistakes, thus impeding their learning process and weakening their ability to edit their work. Iskender (2023) provides a key perspective on this issue, suggesting that depending too much on AI tools might hinder critical thinking. They point out that students might prefer quick solutions instead of understanding their mistakes, ultimately hampering their growth and improvement. Additionally, using such programs to generate new ideas and concepts might suppress their natural creativity (Johinke et al., 2023; Marzuki et al., 2023). Students who become dependent on AI tools might miss out on developing the necessary skills to handle language tasks on their own. This could leave them less capable in situations where AI assistance is absent, like spontaneous real-time conversations. Nietzel (2023) in their study observed that 43% of the surveyed students acknowledged using AI platforms and relying on them for assignments and exams. Essentially, this means that 1 in 5 students openly admit to turning to AI for their educational work. These numbers clearly emphasize the growing reliance of students on AI as a means to achieve academic success.

A conspicuous downside linked to the integration of AI into the education is its potential to mechanize and dehumanize the learning process, potentially eroding its intrinsic human character. For example, the infusion of AI algorithms in the development of educational materials and lesson delivery could pose challenges for certain students in maintaining pace with the swifter tempo set by this mechanization. The conspicuous void left by the absence of human interaction could also manifest as a distinct drawback, particularly resonating with learners who accrue more substantial advantages from direct teacher engagement (Baidoo-Anu & Ansah, 2023). In the nuanced sphere of language acquisition, the provision of emotional bolstering and bespoke guidance by human teachers often emerges as a vital underpinning, addressing the distinct strengths and vulnerabilities of individuals.

Moore, Rutherford, and Craw (2016) undertook an exhaustive inquiry among postsecondary EFL students in Canada. Employing a diverse array of investigative approaches, they sought to examine the impact of digital writing tools on writing proficiency. While their study's findings showcased the feasibility of integrating such tools, the qualitative facet of the data unfurled a contrasting narrative - one where this modality lagged significantly when juxtaposed with the manifold benefits reaped from the direct and intimate feedback furnished by human educators. Further constraint arises from reduced learners' engagement and motivation when interacting with a machine compared to a human teacher.

AI models possess the capacity to inherit biases existing within the data upon which they were constructed. This phenomenon can lead to the propagation of biased language recommendations or content. Biased algorithms, in their functioning, can inadvertently reinforce stereotypes and marginalize specific linguistic or cultural clusters. Such outcomes culminate in an imbalanced learning experience that, in turn, advances particular ideologies without clear disclosure. This intricacy concerning algorithmic bias within AI technologies has been acutely underscored by Buolamwini and Gebru (2018). Their investigation into facial recognition algorithms exposed prevailing biases, thus casting a probing light on the potential presence of bias within AI-fueled language learning systems as well. Addressing these biases and securing an impartial and accessible avenue to language learning

resources and evaluations stands as a pivotal stride in nurturing fairness and inclusiveness within the ambit of AI-imbued language learning environments. The principal source of these biases finds its origins within the primary data, as opposed to the algorithms themselves. Wan et al. (2023) conducted a study that employed an automated construct dubbed "BiasAsker," designed to evaluate biases in conversational AI chatbots. They noted that these biases can be effectively expunged upon identification. Nonetheless, the biases can be forestalled from manifesting by fostering diversity within the ranks and profiles of AI design and development teams.

A surge in the overreliance of AI tools among students might conceivably dampen their motivation to actively partake in critical thinking, creative engagement, and effective problem-solving within the domain of language tasks. Language acquisition is inherently marked by challenges, and an excessive leaning on AI could potentially erect barriers to holistic growth and development in these crucial spheres. Students who leverage AI-based language platforms as shortcuts to academic successes could inadvertently bypass the indispensable cognitive involvement that underpins genuine learning, consequently limiting the development of skills in critical thinking and research. Human educators wield prerequisite skills in tailoring their instructional approaches to cater to the unique needs of each student, fostering an environment that sparks creativity and stimulates cognitive faculties (Chan & Tsi, 2023). It becomes imperative for educators to mull over the latent, long-term repercussions of AI-driven platforms on the scholarly evolution of students (Chan & Hu, 2023). In their research, Mohamed (2023) investigated the perceptions of faculty members regarding the potential of ChatGPT in augmenting EFL instruction. The crux of the research revolved around in-depth interviews conducted with these faculty members. The analysis of the interview responses presented a spectrum of viewpoints among the faculty members regarding the efficacy of ChatGPT. While some scholars lauded ChatGPT for its ability to swiftly and accurately address a wide spectrum of queries, others raised apprehensions that its utilization could curtail students' acquisition of research and critical thinking skills. There also emerged concerns about the potential propagation of biases or misinformation stemming from its usage.

AI's shortfall becomes glaringly apparent in its incapacity to grasp the nuances of emotional intelligence and understand the intricate web of learners' emotions and mental states. The intricate relationship between rapport, empathy, and emotional resonance that educators weave stands as cornerstone for nurturing language learning experiences. It is an incontrovertible fact that AI cannot supplant human instructors or peers. While it undoubtedly offers valuable support, it remains devoid of the capacity to mirror the inherently human facets pivotal to pedagogy—whether it be the delicate interplay of empathy, the sparks of ingenuity, or the nimbleness to seamlessly adapt to the specific learning needs of each learner (Chan & Tsi, 2023).

A foremost matter of concern revolves around the prospective impact of AI on the occupational security of educators. Although not an immediate reality, mounting concerns are arising that the widespread integration of AI in the education sector could create the demand for new skillsets. As AI incrementally automates various dimensions of the educational process, the demand for human educators may reduce substantially, culminating in a situation marked by heightened need for efficiency on one hand and job displacement on the other hand (Tiwari, 2023). A projection done by the McKinsey Global Institute presents an estimative view: a staggering 800 million jobs across the globe could potentially be triggered by automation's tide by the year 2023. Amid this monumental shift in the teachers' job market, a cohort ranging from 75 million to 375 million individuals might be compelled to recalibrate their vocational trajectories, embracing novel competencies in the process (Manyika et al., 2023). A more contemporary evaluation, articulated by Goldman Sachs, posits that generative AI could conceivably automate as many as 300 million full-time positions across the globe (Kelly, 2023). Such widescale automation has the potential to trigger a seismic shift across the global job market, thereby orchestrating a comprehensive reconfiguration of contours of occupational terrain. Further examination of studies that investigate the correlation between computer technology and employment show that the advent of innovative technology sparks a marginal uptick in employment indices (Gaggl & Wright, 2017; Akerman, Gaarder & Mogstad, 2015). The job security risks posed on the introduction of AI technology in education sector can be alleviated by instituting retention programs tailored for educators faced with job displacement due to automation.

AI language learning platforms exhibit a growing tendency to gather and hold onto student data. This situation raises concerns about privacy and safeguarding data. If not managed with due care, students' personal information could potentially be misused or exposed. Generally, EFL students engaging with AI-driven learning platforms, there's a lack of explicit understanding about the types of data being collected and the extent of this collection. Addressing these concerns, Xu and Yuan (2021) underline the importance of safeguarding privacy within AI-fueled language learning platforms. They stress the need for clear data protection policies and consent mechanisms to shield students' personal information. In this evolving landscape, blockchain technology emerges as a means of bolstering data protection and privacy (Oladehinde, 2023). Additionally, the utilization of

cryptographic algorithms can provide an extra layer of privacy for collected data (Vashishth et al., 2023). An approach involving concealing individual information within testing datasets, combined with thorough data verification and sourcing, stands as a powerful approach to secure students' personal details (Sebastian, 2023).

Similarly, the process of crafting and introducing AI technologies poses a significant challenge for stakeholders and innovators, especially related to cost issues. The intricate nature of AI, along with the computational resources and extensive research it demands, contributes to the elevated expenses of its development. Research and development processes demand substantial investment due to the high cost of developing and testing algorithms and machine learning models. The procurement of diverse datasets similarly necessitates both time and resources. Moreover, assembling a proficient team that encompasses data scientists and machine learning engineers is pivotal, which demands proper compensation. This leads educational institutions to contemplate enhancing the skill sets of their software development teams. These teams need to adeptly navigate emerging technologies like machine learning and deep learning (Tiwari, 2023). Such expertise enables the creation of tailored algorithms finely attuned to the distinctive educational needs and objectives of the institution. This investment assures institutions can fully tap into the potentials offered by these sophisticated technologies.

Instances of academic misconduct, encompassing acts such as plagiarism and cheating, have perennially posed notable concerns within education sector. Yet, the advent of AI technologies within the realm of education has fundamentally reshaped the terrain of academic dishonesty, introducing distinct and unparalleled challenges for educators. The widespread availability of AI-fueled tools has notably expanded the array of prospects for students to engage in academic deceit. As per the findings of a study undertaken by Manley (2023), the accessibility of essay mills, paraphrasing software, and other AI-driven resources has considerably propagated practices like plagiarism and the generation of deceptively original content by students. Consequently, educators confront the arduous duty of identifying and uncovering instances of academic misconduct that are progressively becoming more intricate and evasive. Cotton et al. (2023) underscored the predicaments encountered by educators in distinguishing between genuine work and content crafted with the aid of AI tools. The intricate algorithms and the innate capabilities of natural language processing embedded within these AI tools present a formidable challenge for educators when it comes to detecting instances of plagiarism. Another drawback associated with the integration of AI in education is the potential costliness of implementation. Many educational institutions operate within fixed budgets and may lack the resources to invest in AI tools and technologies. Furthermore, not all students enjoy equal access to technology and AI resources. This scenario can engender a digital divide, wherein students with limited access are inherently disadvantaged compared to their peers with more privileged access (Bhattacharya & Kulshreshtha, 2022). Additionally, the financial strain posed by a widespread adoption of AI within educational settings might be deemed excessively burdensome in the present juncture.

Presently, AI is being applied across various domains, extending from government offices to personal devices such as smartphones and computers. While this innovative technology holds the potential for numerous advantages, it also introduces specific susceptibilities that can be exploited. Criminal elements can harness artificial intelligence to trigger system malfunctions or breach private networks without proper authorization. As AI advances and attains higher levels of sophistication, it gains the capacity to autonomously make decisions and execute cyberattacks without human intervention. Research undertaken by Li et al (2023), where ChatGPT was utilized as an attack tool to create a concealed textual backdoor, demonstrated the potential threat that AI might pose to cybersecurity. Their study underscores the magnitude of this concern and the imperative to address and mitigate it effectively. Consequently, cybersecurity emerges as one of the foremost challenges presented by the evolution of AI technology.

## 5. Results

So far, we have discussed the benefits of AI along with its pedagogical and ethical implications and risks in the EFL context. This results section seeks to provide a comprehensive summary of the main findings observed from the reviewed studies. The results obtained are as follows:

### 5.1 Pedagogical Implications of Integrating AI in Language Learning

- (1) AI-powered platforms also assess learners' progress and learning preferences, and provide them with targeted feedback to promote further growth.
- (2) AI technology enables learners with special needs in different ways to obtain information, which would have been difficult for them to do without it.
- (3) With AI holding the reins of the database, it has gotten easier to grab hold of information at all times.

### 5.2 Pedagogical Implications of Integrating AI in EFL Classroom

- (1) The addition of AI in EFL education has improved the learning experience for EFL learners. It also allows ease of automation which helps teachers save time.
- (2) AI-based platforms for language learning offer vast resources which can be accessed anywhere, even on mobile phones.
- (3) AI systems can also be employed as a means of surveillance during examinations to ensure that no cheating takes place.

### 5.3 Ethical Considerations in AI-Driven Language Learning

- (1) Incorporation of AI in language learning is prone to the mechanization of the learning experience and reduces human interaction.
- (2) Privacy concerns of EFL learners arise in AI language learning platforms that collect their data and could misuse this information without their knowledge.
- (3) The existence of bias in AI systems can lead to an unequal learning experience for EFL learners.
- (4) The integration of AI in EFL education also poses a threat to teacher's job security via automation.

## 6. Discussions

Past studies have consistently underscored the positive influence of AI within the EFL classroom. Vera's (2023) study unveiled the considerable assistance offered by AI-driven automatic grading systems. These systems streamline the evaluation process, promptly assessing student assignments and delivering constructive feedback. This not only affords teachers time savings but also ensures continuous and impartial grading. Swift error feedback aids students in their growth journey, encouraging ongoing improvement. This viewpoint resonates across numerous educational review studies, as exemplified by the research conducted by Pérez et al. (2020), Huang et al. (2022), Wollny et al. (2021), and Klimova and Seraj (2023). Likewise, AI can prove advantageous in furnishing students with authentic and abundant language resources. The integration of AI-based tools equips EFL instructors to fine-tune their teaching strategies, catering effectively to their students' diverse requirements (Rudolph et al., 2023; Koraishi, 2023).

The integration of AI into EFL sphere yields a substantial and impactful pedagogical shift. AI brings forth the capability to furnish students with tailored feedback that not only fosters growth but also ushers in personalized instruction, as highlighted by Vera's study (2023). Notably, Automated Writing Evaluation (AWE) systems are adept at providing learners with feedback on multiple facets of their writing - ranging from punctuation, grammar, spelling, sentence structure, to overall coherence - a proficiency acknowledged in the works of Zhang & Hyland (2018), Yang, Gao & Shen (2023), and others. These studies underscore that such feedback bolsters students' writing skills, manifesting as reduced error rates, a trend evident in research by Al-Inbari & Al-Wasy (2022), Liao (2016), Lu (2019), and Wang et al. (2013).

The infusion of AI into mobile-based applications further amplifies their efficacy for EFL learning purposes, a notion expounded by Arini et al. (2023). These applications facilitate unfettered access to a vast reservoir of knowledge and concurrently infuse an element of engagement into the learning process. However, this integration is not without ethical considerations. A notable downside of AI incorporation in education resides in its potential to dilute the human element of the learning experience. Baidoo-Anu & Ansah (2023) propose that the dearth of human interaction could prove disadvantageous, particularly for learners who stand to gain more from direct teacher involvement.

Moreover, Xu and Yuan (2021) assert the importance of safeguarding privacy within AI-powered language learning platforms. Their emphasis on well-defined data protection policies and consent mechanisms resonates as a necessity to shield learners' personal information. Furthermore, concerns about algorithmic bias in AI technologies, as illuminated by Buolamwini and Gebru's (2018) work on facial recognition algorithms, cast light on the potential for bias in AI-driven language learning systems as well. Additionally, as AI progressively automates diverse dimensions of the educational process, the role of human educators in EFL instruction might witness diminution, leading to a dual spectrum of enhanced efficiency and, conversely, the prospect of job displacement, as postulated by Tiwari (2023).

## 7. Research Gaps and Future Recommendations

The present research offers insightful perspectives on the influence of AI on EFL education. Nevertheless, there are gaps and avenues for further exploration in this domain. The field of AI is rapidly evolving, witnessing



substantial advancements and undertakings across various sectors. Nonetheless, there remain unexplored territories that beckon for attention and progress is lacking in specific domains. In the context of EFL, these gaps become even more evident, with a dearth of comprehensive studies. Although the immediate advantages of AI in EFL have garnered substantial discussion, as Rusmiyanto et al. (2023) accentuates, the long-term implications of AI have rarely been delved into and warrant extensive research.

A conspicuous trend surfaces during research analysis, highlighting the emphasis on AI's potential merits while neglecting substantial exploration of its potential drawbacks. Additionally, substantial room remains for holistic examinations, investigating AI tool interactions with diverse EFL learners, accounting for variables like cultural backgrounds and ethnicity. The discourse previously broached the fusion of emotional intelligence with AI; however, a conspicuous void remains in the research concerning its application for EFL learners. Imagining an emotionally intelligent AI capable of discerning learners' emotions and mental states during educational activities envisions profound advantages. Adaptive content delivery based on emotional well-being could become a reality, revolutionizing learning experiences. Another untapped area is the research on fostering and sustaining learners' motivation. The envisioning of AI capable of gauging learners' motivation levels during educational process is transformative. AI could proactively engage learners and sustain their motivation by mitigating the fatigue that often accompanies learning.

Amidst these contemplations, considering the rapid pace of AI's evolution, it appears only a matter of time before these research niches are adequately addressed, ushering EFL learners into an era of enriched language proficiency. Furthermore, while AI holds immense potential, rigorous research is imperative to ascertain the efficacy of its application in EFL learning. Extending these inquiries, researchers should investigate the optimal incorporation of AI within language learning contexts to maximize its benefits. Additional studies are warranted to refine AI's response to bias within the cultural and ethnic dimensions, and the incorporation of emotional intelligence into AI should be pursued for an enhanced language learning experience.

## 8. Conclusion

In conclusion, our comprehensive analysis of existing literature underscores the substantial and transformative influence wielded by Artificial Intelligence (AI) upon learners of English as a Foreign Language (EFL). This influence extends from modest implementations like automated grading to broader applications such as AI-fueled augmented reality. While acknowledging potential ethical issues, adept planning and meticulous execution can deftly address these concerns. Amidst the acknowledgment of potential challenges, our focus remains on navigating these complexities to harness AI's potential for EFL learners, catapulting them into novel educational frontiers. As we conclude, it becomes evident that there remains a gamut of work yet to be undertaken. Recent trends reflect a burgeoning influx of articles and papers dedicated to AI's integration within the EFL landscape, attesting to its growing recognition. With AI's rapid permeation across diverse domains, it becomes an inevitable trajectory to unveil the latent possibilities AI holds for EFL learners.

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