

Investigating the Impact of Artificial Intelligence on Multiple Intelligences in English Language Classrooms

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Abstract:

One of the primary goals of 21st-century pedagogy is to promote learner-centered and personalized instruction in today's rapidly evolving educational setting. Traditional classroom methods frequently place too much emphasis on verbal intelligence at the detriment of other learning strengths, despite Gardner's Multiple Intelligences (MI) theory emphasizing the necessity to address multiple learning strengths. In this context, educators are encouraged to design specific strategies that match acknowledge the cognitive diversity of students. As artificial intelligence (AI) becomes more prevalent in education, there are more chances to create learning environments that appeal to several intelligences at once. This paper presents a narrative literature review exploring the intersection of AI and MI in English language classrooms. It examines how AI applications align with Multiple intelligences theory in language learning contexts. Results show that AI technologies including chatbots, grammar checkers, adaptive learning systems, virtual reality, and AI-powered collaborative tools may assist a variety of intelligences by boosting motivation, encouraging multimodal engagement, and personalizing learning paths. However, there are some challenges include teacher readiness, cultural biases in AI, and ethical concerns. Overall, the findings suggest that an integration between AI practices and MI instruction can enhance students' engagement and peronalized learning in English language classrooms.

Keywords: Artificial Intelligence; Multiple Intelligences; Educational technology; English language learning; EFL/ESL classrooms; Personalized learning

1. Introduction

In the twenty-first century, language instruction has emphasized critical thinking, creativity, teamwork, and flexibility. In this regard, Howard Gardner (1993) in his theory of Multiple Intelligences (MI) theory developed a framework for understanding the various ways in which students learn and demonstrate knowledge. Even though MI encourages learner-centered instruction, teachers often find it hard to cover all types of intelligence due to the constraints in time, resources, and traditional curriculum.

Meanwhile, artificial intelligence (AI) is currently changing how people learn. Teachers are using AI tools in classrooms to improve teaching and learning, moving from traditional language learning platforms to intelligent tutoring systems (Holmes et al., 2019). Artificial intelligence (AI) tools like speech recognition, automated writing feedback, and immersive simulations offer new ways to meet the diverse needs of English language learners (Fryer et al., 2017).

Despite these changes, the relationship between AI and MI in English language instruction is still not fully understood. Few research studies explore the interaction of MI in pedagogy and AI in education (Zawacki-Richter et al., 2019). Therefore, this study reviews the literature on the advantages, difficulties, and future practice implications of using AI to improve MI-based teaching in English classrooms.

Theoretical Background

Gardner proposed eight inclusion criteria, including isolation by brain damage, evolutionary plausibility, and basic processes, to assess potential intelligences. These standards ensured that every intelligence was both culturally relevant and neurologically distinctive. The eight recognized intelligences are:

1. **Verbal-Linguistic:** The ability to communicate through stories and language. This concept is elaborated by Hasanudin and Fitrianingsih (2020) who defined it as "the ability that has been well developed and sensitive to the sounds, meanings, and rhythms of words (p. 118).
2. **Logical-mathematical:** Abstract reasoning and familiarity with numbers. Arum et al. (2020) further explained that logical-mathematical intelligence is the ability of students to identify and classify objects, perform mathematical computations, solve the problems, think logically and critically, and make conclusions (Palarimath et al.2024).
3. **Visual/Spatial:** The mental processing of spatial and visual data. Šafranĳ and Zivlak (2018) explained that visual/spatial intelligence is a capacity to visualize space and objects within the mental vision. Drawing an image is more appealing to those who employ this type of intellect than writing a paragraph. They understand mental models and take note of color, forms, patterns, and the way light strikes an object.
4. **Musical:** Attention to musical structure, rhythm, and tone. According to Krishnan et al. (2014), MI is the ability to perceive, react to, and comprehend musical stimuli. These aspects can function separately even if they have a shared core and depend on one another. As a result, a straightforward, unified concept cannot fully convey the complexity of musical intelligence.
5. **Bodily-Kinesthetic:** Coordination and control of fine motor skills. It is the ability to use one's body to imitate the movements of another is known as bodily-kinesthetic intelligence. Strength, balance, endurance, flexibility, and coordination are common traits of those who favor this type of intellect. Students use their body to transmit concepts and emotions in order to solve problems, produce goods, or show feelings.
6. **Interpersonal:** Recognizing and reacting to the feelings of others. Interpersonal intelligence is related to responding to information, understanding it, and building social interaction with others (Dien and Wustqa, 2018).
7. **Intrapersonal:** introspection and emotional understanding. Lunenburg and Lunenburg (2014) defined it as the ability to "access to one's own feelings and the ability to discriminate among them and draw upon knowledge of one's strengths and weaknesses, desires, and intelligences" (p. 5).
8. **Naturalistic:** Identifying and categorizing natural phenomena. It is the ability to relate to, categorize, classify, comprehend, and explain the things found in the natural world.

Gardner also took existential and moral intelligences into account, but he did not formally include them because there was not enough evidence to justify them.

Due to the MI theory, pedagogy has changed since it advocates for differentiated instruction and authentic evaluation. Educators began to integrate multiple intelligences while designing the curriculum. Consequently, Teachers moved beyond rote memorization and standardized testing, and classrooms have become more inclusive, allowing students to express their knowledge through diverse methods such as storytelling, visual art, or physical movement. This was emphasized by Kornhaber (2020) who shed light on the importance of MI theory in empowering instructors and allowing them to detect and foster individual abilities.

AI's Capabilities in English Language Classrooms

Pitychoutis and Al Rawahi (2024) explored how Howard Gardner's theory of Multiple Intelligences (MI) can be integrated with emerging Artificial Intelligence (AI) technologies to

enrich English-as-a-Foreign-Language (EFL) pedagogy. Their central claim is that while AI can support and extend certain aspects of MI by providing personalization and multimodal learning opportunities, the two forms of intelligence remain fundamentally different.

For instance, AI excels in areas that align with measurable, rule-based, and pattern driven learning as follows:

1. **Linguistic Intelligence:** Grammar checkers, automated essay scoring, and AI chatbots provide corrective feedback, vocabulary input, and conversational practice.
2. **Logical-Mathematical Intelligence:** Adaptive platforms use algorithms to detect errors and modify the level of difficulty of activities.
3. **Spatial Intelligence:** Virtual reality and visualization tools help learners contextualize new language in immersive environments.

These uses demonstrate AI's strengths: scalability, speed, and consistency. It can externalize tasks such as repetitive drills or provide analytics that learners internalize to monitor progress. In these domains, AI can complement and extend human teaching.

Consequently, AI and MI are not interchangeable but complementary, as they vary in the following elements:

1. **Nature of Knowledge:** While MI conveys bodily, implicit, and contextual capacities, AI externalizes clear, measurable knowledge.
2. **Personalization vs. Personhood:** Although AI is related to content based which focuses student performance, it lacks empathy, awareness of oneself, and cultural grounding which are considered the basic features of multiple intelligences.
3. **Efficiency vs. Meaning-Making:** AI provides rapid, large-scale feedback, but MI emphasizes deeper meaning-making processes, identity work, and creative expression.
4. **Scalability vs. Contextuality:** AI scales easily across learners, but MI highlights that intelligence emerges differently based on individual and cultural circumstances.

Statement of the Problem

Traditional strategies to teaching English language usually emphasize linguistic intelligence beyond reading and writing abilities. Gardner (1993) stated that the abilities of students who perform well in other intelligences, such as spatial, kinesthetic, or interpersonal, are hindered while following these strategies. Some limitations that hinder teachers from addressing all intelligences in classroom are the limitations of curriculum design, class size, and instructional time.

AI technologies also have the potential to facilitate integrated learning and differentiated instruction (Chen et al., 2020). However, little investigation has been done on how AI can support MI-based instruction in EFL/ESL environments. Creating accessible and successful English language schools requires an understanding of how AI may support MI pedagogy.

By reviewing the existing literature, the following questions are addressed:

1. How can the tools of Artificial Intelligence be utilized to foster Multiple Intelligences in English language learning?
2. What are the benefits of integrating AI with MI-based pedagogy in English language classrooms?
3. What are the challenges and limitations in the application of AI to MI in English language teaching?

Purpose of the Study

This study aims to investigate how multiple intelligences-based instruction in English language classes can be improved using artificial intelligence. The review specifically examines how AI applications can support various intelligences, the advantages of combining AI with MI teaching, and potential obstacles.

Significance of the Study

This study is important because it offers a current understanding of how Multiple Intelligences (MI) in English language acquisition can be supported and enhanced by Artificial Intelligence (AI). The study provides useful data for English language instructors, curriculum designers, and educational institutions looking to implement more individualized and successful teaching strategies by analyzing the integration of AI tools with MI-based pedagogy.

In an attempt to promote more differentiated and learner-centered instruction, the study first contributes to identifying useful methods AI tools can support various intelligences, including linguistic, logical-mathematical, spatial, interpersonal, intrapersonal, musical, bodily-kinesthetic, and naturalistic. This is significant in English language courses, where students may have different learning features. Second, the study investigates how using AI with MI can foster students' engagement, motivation, autonomy, and feedback in a more flexible way. By highlighting these advantages.

It supports designing creative teaching strategies that meet the demands of 21st-century learning.

Lastly, by analyzing the difficulties and restrictions related to utilizing AI to support MI, the study offers a practical and realistic and comprehensive knowledge that can direct future actions. When implementing AI-based learning systems, this knowledge aids educational stakeholders in making wise choices.

Literature Review

AI Applications Across Multiple Intelligences in English Language Learning

Research shows that AI tools can align with multiple intelligences:

- **Linguistic intelligence** : the use of chatbots, grammar checkers which are powered by AI, and automated writing helpers which provide constructive feedback and conversational training (Fryer et al., 2017).
- **Logical-mathematical intelligence** : AI offering problem-solving challenges and adaptive learning algorithms promoting vocabulary and grammatical mastery (Chen et al., 2020).

- **Spatial intelligence:** AI offers visualizations which support storytelling and contextualized language learning (Pitychoutis & Al Rawahi (2024).
- **Bodily-kinesthetic intelligence:** Offering AI simulations which are Gesture-based and role-play tasks enable interactive and embodied learning experiences (Johnson-Glenberg, 2018).
- **Musical intelligence:** AI offers applications which improve pronunciation, rhythm, intonation, and musical patterns (Abdelhalim & Alsehibany, 2025).
- **Interpersonal intelligence:** Collaborative chat platforms and AI-driven social robots facilitate peer interaction and speaking practice (Belpaeme et al., 2018).
- **Intrapersonal intelligence:** Using AI Feedback systems which support reflective journaling and self-assessment to foster self-awareness (Holmes et al., 2019).
- **Naturalist intelligence:** Image recognition tools and AI-supported environmental descriptions integrate real-world contexts into language use (Tikiz-Erturk & Kurt, 2023).

The review of the literature indicates that Gardner's Multiple Intelligences in English language learning can be greatly enhanced by artificial intelligence. Each intelligence can be addressed through the usage of specific AI tools that support autonomous, interactive, and learner-centered learning. The existing literature shows the importance of AI tools usage in improving traditional teaching methods through customized training, immersive learning environments, and adaptive feedback. Additionally, the different platforms offered by AI show increased motivation, enhanced language proficiency, and deeper learner engagement in classrooms. This highlights the significance of incorporating AI into MI-based English language instruction and offers a recommendation for future research on creative, intelligence-responsive teaching strategies.

Benefits of AI in Enhancing Multiple Intelligences in Language Classrooms

Using AI technologies, such as adaptive learning platforms, intelligent tutoring systems, and recommendation algorithms, can provide customized instruction which is appropriate for learners based on their need. For example, students with strong visual-spatial intelligence can be offered graphical or interactive content, while those with high interpersonal intelligence may engage in collaborative AI-mediated activities. This approach helps in the development of each intelligence, allows learners progress at their own pace, and reduces frustration (Holmes et al., 2019; Pitychoutis & AlRawahi, 2024).

Additionally, AI can improve motivation by integrating game –based features, adjustable challenges, and immediate feedback into the learning process. For example, it fosters the sense of interest and accomplishment for students with bodily-kinesthetic or musical intelligences who prefer achieving tasks through active, hands-on, or rhythmic activities. This involvement allows students to participate in classroom activities more actively and let them grasp and remember the concept for a long period of time. It also motivates them to explore more about topics beyond their specialization (Fryer et al., 2017).

Moreover, in traditional classrooms, teachers might find it difficult to meet students' different needs. In this regard, it is possible to apply differentiated instruction by AI, which provides several methods to comprehend a specific concept. For example, naturalistic learners can be involved in some simulations of environmental or cultural experiments, while linguistic learners can benefit from AI integration in reading or writing activities. This use assures that

multiple intelligences are properly controlled, and students are provided with a chance to discover their strengths (Ruslim & Khalid, 2024).

Furthermore, AI tools like chatbots, virtual reality (VR), augmented reality (AR), and intelligent tutoring systems offer diverse learning input that support multiple intelligences. For instance, VR settings can promote linguistic, spatial, and interpersonal intelligences by engaging students in real-world language circumstances. AI chatbots can mimic dialogues and provide immediate feedback to help students improve their language and social skills.

AI can also analyze students' responses, identify their errors, and recommend solutions. These insights can be used by educators to improve lesson plans, track students' progress across several intelligences, and offer focused assistance when necessary. The effectiveness of MI-based pedagogy is increased by this evidence-based strategy, which permits continuous instructional modifications (Balling et al.,2021).

Table 1 summarizes the eight types of intelligences, related AI tools, and their benefits in language learning.

Table 1. Summary of Multiple Intelligences, AI Tools, and Benefits in Language Learning

Intelligence Type	Description	Examples of AI Tools	Benefits in Language Learning
Verbal-Linguistic	Ability to communicate effectively through language, words, and storytelling.	AI chatbots, grammar checkers, automated essay scoring tools	Improves grammar, vocabulary, writing accuracy, and communication skills
Logical-Mathematical	Ability to think logically, solve problems, and work with numbers and patterns.	Adaptive learning platforms, intelligent tutoring systems, analytics-based quizzes	Enhances problem-solving, critical thinking, and personalized learning
Visual/Spatial	Ability to visualize objects, patterns, and spatial relationships.	Virtual reality (VR), augmented reality (AR), visualization software	Supports contextualized and immersive language learning
Musical	Sensitivity to rhythm, tone, melody, and sound patterns.	AI music applications, pronunciation and speech-recognition tools	Improves pronunciation, listening skills, and memory through rhythm and sound
Bodily-Kinesthetic	Ability to use body movement and coordination to express ideas and solve problems.	Motion-based learning apps, VR simulations, gesture-recognition systems	Encourages interactive and experiential learning
Interpersonal	Ability to understand and interact effectively with others.	Collaborative AI platforms, discussion forums, AI communication assistants	Promotes collaboration, communication, and teamwork
Intrapersonal	Ability to understand one's emotions, strengths, and weaknesses.	Personalized learning systems, reflective AI journals	Encourages learner autonomy and self-paced learning
Naturalistic	Ability to identify, classify, and understand elements of the natural world.	AI simulations, environmental learning platforms, educational games	Connects language learning with real-world contexts and environmental topics

Challenges and Ethical Concerns

To start with, one of the challenges for integrating AI and MI in classrooms is not having an equal access to technology which leads to variances in educational settings. Due to limited resources and lack of internet access in some schools, AI-supported MI training may not be applied effectively. This unequal access increases socioeconomic barriers and creates inequality in education (Hagendorff & Wezel, 2020).

Another challenge relates to teachers' training and technological literacy. The effective integration of AI into MI-based instruction requires teachers to possess technological literacy and pedagogical expertise. Many teachers struggle with the use AI tools properly due to

insufficient training. In this case, professional development programs are needed to equip teachers with the skills needed to design AI-enhanced activities that align with diverse intelligences (Luckin, 2018).

Additionally, most AI tools focus mainly on reading, writing, or grammar correction.

Although this emphasis supports linguistic intelligence, it may neglect other intelligences, such as bodily-kinesthetic, musical, or interpersonal, leading to an uneven development of learners' abilities. To provide complete MI assistance, AI activities must be carefully chosen and designed (Shahid, 2025).

Minority languages and perspectives may also be neglected since AI systems are commonly trained on data that reflects dominant linguistic and cultural norms. This bias may limit classroom diversity and disadvantage students from different origins. To lessen these effects, educators must be careful in choosing AI tools and adopt culturally appropriate methods which include cultural diversity.

One more challenge is that implementing AI in language classes can be expensive. This problem occurs in EFL/ESL settings where schools have limited resources. Costs include software licenses, devices, maintenance, and expert training. To solve this problem, there should be careful planning, financial distribution, and an examination of affordable or open-source AI which can promote fair and equal access (Elmousalami, 2020).

Regarding ethical concerns, AI use raises moral issues regarding student data. It often collects personal information about students and monitors their learning. Consequently, if personal learning data is continuously monitored and collected, students' privacy may be at risk if it is not handled appropriately. To protect students' rights and ensure responsible AI integration, clear policies and moral standards should be applied (Zawacki-Richter et al., 2019).

Previous Studies

Several prior studies provide insights into the role of Artificial Intelligence (AI) in education and the application of Multiple Intelligences (MI) in teaching in English language classrooms. Abdelhalim and Alsehibany (2025) investigated AI pronunciation training tools for EFL learners. Results showed that students' oral proficiency was significantly enhanced by AI applications that used rhythm and intonation analysis. Additionally, students relied on rhythm and tone awareness to improve pronunciation accuracy which connected pronunciation practice to both linguistic and musical intelligence.

Fryer et al. (2017) examined chatbots' contribution to language learning by contrasting them with human job partners. At first, students reported greater levels of interest for language practice while using chatbots. After the first task, students' interest dropped, and they stayed interested in tasks with human partners.

Jomaa, Attamimi, and Al Mahri (2025) investigated teaching English vocabulary to EFL students in Oman using artificial intelligence. The study's objectives were to find the most popular AI applications, investigate the difficulties of integrating AI into English language training, and assess teachers' views toward utilizing AI tools in vocabulary instruction. Seventy English teachers from a public university in the Sultanate of Oman who taught General Foundation and Post-Foundation Programs made up the participants. A number of AI technologies, such as ChatGPT, Kahoot, Duolingo, Quizlet, and Google Translate, were examined in the study. The results showed that instructors' opinions of AI-assisted vocabulary instruction were largely favorable. Additionally, the study demonstrated how AI technologies improved student autonomy and verbal-linguistic competence.

Similarly, Liu and Wang (2024) investigated how AI tools affected EFL students' critical thinking in English literary classrooms. The objective of this research was to find out if AI-powered learning resources could boost students' critical thinking abilities and increase participation in literature classes. Ninety students who were enrolled in English literature classes participated in the study. Findings revealed that while the control group used conventional teaching techniques without AI support, the experimental group generated and responded to text-related questions, took part in interactive quizzes, and engaged in AI-assisted debates using AI tools including ChatGPT-3.5, Bodoudou, and SummarizBot.

The potential of generative AI in higher education was investigated by Cordero and Cordero-Castillo (2024). The study's objectives were to determine the difficulties associated with classroom integration, examine the efficacy of AI-generated educational materials, and look at the effects of prompts and AI support in learning environments. Two hundred thirty five university professors participated in the study. Based on the the professors observations an assessments, results showed that despite there are some difficulties while integrating AI and MI into instruction.

The above studies suggest valuable insights into the benefits and limitations of AI and MI in education. AI may effectively promote learner engagement, personalization, and multimodal learning, but it is significant to integrate it with MI framework to promote students' inclusion and development.

Methodology

The study design is a narrative literature review which is based on the existing literature related to the integration of Artificial Intelligence (AI) and Multiple Intelligences (MI) in English language classrooms. The narrative review examines thoroughly the previous studies to find key themes, theoretical background, and gaps in the literature.

Electronic databases such as Google Scholar, Scopus, and Web of Science were searched using key terms including "Artificial Intelligence in language learning," "Multiple Intelligences and EFL," "AI personalization education," "MI pedagogy and technology," and "AI in English language classrooms." The included studies closely aligned with the research questions of the study and provided high-quality reliable data for the review.

In this narrative literature review, only peer-reviewed journal articles and conference papers published between 2008 and 2025 were included. Studies which discussed the use of multiple intelligences in language acquisition or the implementation of artificial intelligence in education, especially in English as a foreign language (EFL) or English as a second language (ESL) instruction, were significantly considered. The focus was on the research that explored the pedagogical implications of MI theory and the ones that explored how AI tools like chatbots, grammar checkers, adaptive learning platforms, or immersive technology could be utilized.

On the other hand, studies published before 2008 were excluded unless they were important contributions like Gardner's Multiple Intelligences theory from 1993. Criteria included irrelevant studies, book reviews, general reviews, and meta-analyses. These standards assured the chosen studies' effectiveness, reliability, and relevance. In screening studies, full-text articles were thoroughly examined after abstracts were first reviewed for relevance. Studies that used experimental or quasi-experimental designs, employed a variety of corpora, and

addressed the use of AI to support MI received particular consideration. The included studies closely aligned with the research questions of the study and provided high-quality reliable data for the review.

The chosen studies were reviewed and analyzed based on the following three themes: (1) AI applications across multiple intelligences, (2) benefits of AI in MI-based instruction, and (3) challenges and ethical concerns.

Data Collection and Findings

The following table (Table 1) organizes and presents the title, author, purpose, methodology, participants, AI tool used and findings of the five studies included in the literature review.

Table 1: Research Studies on the Impact of AI Tools on MI

1	Title	Integrating AI-powered tools in EFL pronunciation instruction: effects on accuracy and L2 motivation
	Author(s)	Safaa M. Abdelhalim and Raniya Abdullah Alsehibany
	Purpose	The study examines how incorporating AI tools into classroom instruction affects EFL learners' pronunciation accuracy, particularly segmental features (phoneme accuracy) and suprasegmental features (word stress patterns), as well as L2 motivation, including Current L2 Self, Ideal L2 Self, and Intended Learning Effort.
	Participants	71 undergraduate EFL learners in Saudi Arabia
	AI tool used	Chatgpt
	Methodology	A mixed-method approach was used, and data was analyzed quantitatively and qualitatively with one experimental and one control group.
	Findings	Quantitative results revealed moderate increases in suprasegmental stress patterns, but significant improvements in segmental pronunciation (phoneme correctness at both word and sentence levels). Current L2 Self and Learning Effort showed a substantial increase in motivation, while Ideal L2 Self showed no significant within-group change.
2	Title	Stimulating and sustaining interest in a language course: An experimental comparison of Chatbot and Human task

		partners
	Author(s)	Luke K. Fryer, Mary Ainley, Andrew Thompson, Aaron Gibson, and Zelinda Sherlock
	Purpose	The study examined chatbots' contribution to language learning by contrasting them with human job partners
	Participants	122 students in first- and second-year compulsory English as a foreign language classes at one private university in Japan
	AI tool used	Chatbot
	Methodology	The study used a quasi-experimental design involving six classes that were randomly divided into two groups. Three weeks before the study began, students were introduced to Chatbot technology. One group completed a speaking task with a human partner, while the other group completed the same task using a Chatbot on a tablet. One week later, the groups switched roles and repeated the same procedure. A course interest scale was then administered. The same process was repeated using different speaking tasks.
	Findings	Human interaction was found to be more effective in maintaining engagement and supporting long-term course interest than Chatbot interaction.
3	Title	The Use of Artificial Intelligence (AI) in Teaching English Vocabulary in Oman: Perspectives, Teaching Practices, and Challenges
	Author(s)	Nayef Jomaa, Rais Attamimi, Musallam Al Mahri
	Purpose	This study examines teachers' attitudes toward using AI tools to teach English vocabulary to EFL Omani students. It also explores their perspectives on the most common AI tools, integration scenarios, and challenges.
	Participants	70 English instructors teaching both General Foundation and Post-Foundation Programs at one of the public universities in the Sultanate of Oman.

	AI tool used	ChatGPT, Kahoot, Duolingo, Quizlet, and Google Translate
	Methodology	A mixed method, in which a quantitative approach was utilised to examine the attitude of English instructors toward using AI tools in vocabulary teaching, and a qualitative approach to explore their perspectives on AI tools integration with English teaching and possible challenges encountered by them.
	Findings	The findings revealed that English instructors generally had positive attitudes toward the use of AI tools in English and vocabulary teaching and verbal-linguistic competence. It also enhances students autonomy in relation to intrapersonal intelligence. Moreover, teachers should be provided with sufficient training to utilize AI tools effectively.
4	Title	The Effects of Using AI Tools on Critical Thinking in English Literature Classes Among EFL Learners: An Intervention Study
	Author(s)	Wenxia Liu, Yunsong Wang
	Purpose	The purpose of the study is to investigate the impact of AI-driven learning tools on the development of critical thinking skills among EFL students in English literature classes and to examine whether integrating AI technologies can enhance students' learning experiences and classroom engagement.
	Participants	90 students enrolled in English literature classes
	AI tool used	ChatGPT-3.5, Bodoudou, SummarizBot
	Methodology	The study used an 8-week mixed-methods intervention design. Students' critical thinking levels were measured before and after the intervention using a standardized assessment tool. The experimental group used AI tools such as ChatGPT-3.5, Bodoudou, and SummarizBot during English literature classes. Students used these tools to: generate and answer text-related questions, participate in interactive

		quizzes, and engage in AI-assisted debates. The control group studied through traditional teaching methods without AI tools. Pre- and post-tests were conducted to compare students' critical thinking development.
	Findings	The findings showed a statistically significant improvement in the critical thinking skills of the experimental group compared to the control group. Students who used AI tools performed better in post-intervention assessments, indicating that AI technologies can effectively enhance critical thinking and support logical intelligence in English literature classes.
5	Title	Exploring the Potential of Generative AI in Education: Opportunities, Challenges, and Best Practices for Classroom Integration
	Author(s)	Jorge Cordero and Alison Cordero-Castillo
	Purpose	The research examines the effectiveness of AI-generated resources, as well as the impact of prompts and assistance provided by these tools in educational settings and the challenges identified while using them.
	Participants	235 participants university professors from various faculties and levels of teaching experience
	AI tool used	ChatGPT, Copilot, Gemini, Claude,
	Methodology	A mixed-methods approach was adopted, combining qualitative and quantitative techniques to analyze the potential of generative AI in university education.
	Findings	The outcomes from forums, questions, experiences, and perspectives of university teachers were analyzed through observations, interviews, surveys,

		collaborative activities, and practices conducted in three teacher training courses.
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Discussion

The results of the studies that were analyzed show that artificial intelligence (AI) has evolved to be a significant teaching tool in English language classes, helping students build a variety of multiple intelligences. The findings of this review provide insights that directly address the three research questions.

RQ1: How can AI tools be applied foster Multiple Intelligences in English language learning?

Research indicates that AI provides interactive platforms, immersive simulations, and adaptive feedback to support a variety of intelligences. For example, VR enhances spatial and bodily-kinesthetic learning while chatbots may improve verbal and interpersonal intelligences. This illustrates how AI has the capacity to expand language learning beyond traditional linguistic constraints (Fryer et al., 2017). The reviewed studies also show the contribution of AI to intrapersonal intelligence through the development of students autonomy and self-directed learning. Jomaa et al. (2025) emphasized that AI tools increased students' autonomy by allowing learners to engage independently with educational content and receive immediate feedback. Moreover, the findings suggest that AI can significantly contribute to the development of logical-mathematical intelligence and critical thinking skills. The intervention study conducted by Liu and Wang (2024) demonstrated that students who used AI tools such as ChatGPT-3.5, Bodoudou, and SummarizBot showed statistically significant improvement in critical thinking compared to students taught through traditional methods. Through AI-assisted activities, including debates, quizzes, and text-analysis tasks, students ability to analyze information, evaluate arguments, and solve problems critically increased. These findings indicate that AI can support logical reasoning and analytical thinking, which are central characteristics of logical-mathematical intelligence.

RQ2: What are the benefits of integrating AI with MI pedagogy in English language classrooms?

The reviewed studies showed a strong relationship between AI tools and verbal-linguistic intelligence, improved personalization, learner motivation, and individualized instruction (Abdelhalim & Alsehibany, 2025). Because of AI's flexibility, training can be customized to each learner profile, making classrooms more inclusive and stimulating. Gamified AI programs, for instance, maintain interest and let students advance at their own speed, encouraging independence and self-efficacy. Similarly, Jomaa et al. (2025) found that AI tools such as ChatGPT, Duolingo, Quizlet, and Google Translate positively supported vocabulary learning and language development. These findings indicate that AI-powered language tools can effectively strengthen students' verbal-linguistic abilities by enhancing pronunciation, vocabulary acquisition, grammar accuracy, and communication skills. Such findings support Gardner's theory that verbal-linguistic intelligence can be developed through interactive and language-rich learning environments.

RQ3: What challenges and limitations exist in applying AI to MI pedagogy in English language teaching?

Even though there are many advantages of integrating AI and MI in English language classrooms, important challenges still exist such as having unequal access to technology, insufficient teacher training and ethical consideration about data use and privacy concerns (Jomaa, Attamimi & Al Mahri, 2025). Furthermore, there is a risk of placing too much emphasis on language intelligence in AI design which implies that there is a need to apply a more balanced approach to all intelligences.

Conclusion and Recommendations

This narrative review of the literature shows how AI can significantly improve MI-based English language acquisition by promoting integration, personalization, and engagement. This review demonstrates how AI may significantly improve MI-based English language learning by promoting personalization, engagement, and multimodality. But issues like limited access, teacher preparedness, and dilemmas of ethics must be addressed. Future research is required especially empirical studies which examine AI-MI integration in real classrooms. When AI and MI are combined, they can build learning environments that value diversity, help students develop their skills, and prepare them for the challenges of the twenty-first century.

The field of AI and MI integration research is relatively recent. The development of collaborative workshops or practices where educators may share AI learning resources, best practices, and experiences is crucial for educational institutions and language instructors. Teachers can overcome challenges and acquire valuable knowledge with the help of AI platforms. Making AI tools' easier to use can also encourage students and teachers to benefit from them. Curriculum designers should include clear directions on how to incorporate AI technologies with different intelligences in the classroom to support language acquisition. Additionally, policymakers should fund programs to certify teachers who employ innovative methods and encourage new teaching strategies. In order to achieve this, collaboration between educators, linguists and technology experts is essential.

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