Artificial Intelligence and English Language Learning: Exploring the Roles of AI-Driven Tools in Personalizing Learning and Providing Instant Feedback

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Abstract

This study investigated the impact of AI-driven tools on English language learning, motivated by the increasing integration of artificial intelligence in education and the need for empirical evidence on its effectiveness. The purpose of the study was to explore how AI-driven tools personalize learning, provide instant feedback, and affect learner perceptions. Using a quantitative research design, data were collected from 200 students across four international schools via questionnaires. Three major findings emerged: AI-driven tools significantly enhanced personalized learning experiences, with 72.5% of students rating personalization highly; instant feedback from AI tools was found to be very helpful by 80% of students, leading to improved language acquisition progress; and 80% of students recommended AI-driven tools, citing increased enjoyment and engagement. The study concluded that AI-driven tools effectively support personalized learning and provide beneficial instant feedback, though challenges such as technical issues and the need for human interaction remain. It was recommended that educators integrate AI tools thoughtfully, ensuring a balance with traditional methods and addressing technical and accessibility concerns. Further research should investigate long-term impacts and optimal implementation strategies.

Keywords: *Ai-Driven Tools, Personalized Learning, Instant Feedback, English Language Learning, Learner Perceptions.*

INTRODUCTION

Before the advent of artificial intelligence (AI) in language learning, education primarily relied on traditional methods, such as textbooks, lectures, and language labs, which offered limited opportunities for personalized instruction and timely feedback (Warschauer & Healey, 1998; Warschauer, 2004). Language learners often faced challenges in accessing authentic language materials and practicing in real-world contexts, hindering the development of communicative competence (Chapelle, 2001; Levy & Stockwell, 2006). However, with the emergence of AI-driven tools, language learning experiences have been transformed, offering learners tailored instruction based on their proficiency levels, learning styles, and interests (VanLehn, 2011; García-Peñalvo et al., 2020). AI technologies, such as natural language processing (NLP) algorithms and machine learning models, enable the creation of interactive learning environments that simulate authentic language use and provide instant feedback on pronunciation, grammar, and vocabulary (Chiu et al., 2018; Kim et al., 2020). Furthermore, AI-mediated language learning platforms offer learners access to vast repositories of authentic multimedia content, facilitating engagement and cultural immersion (Wang & Wen, 2019; Rodríguez-Muñiz & Padilla-Zea, 2021). Thus, the integration of AI in language learning represents a paradigm shift, offering learners unprecedented opportunities for personalized, interactive, and effective language acquisition.

AI in language learning has been defined in various ways, reflecting the diverse nature of this intersection. Some researchers define AI as encompassing machine learning algorithms and natural language processing techniques that enable computers to simulate human-like language acquisition and comprehension (Mitchell, 1997; Russell & Norvig, 2020). Others emphasize the role of AI in facilitating personalized learning experiences through adaptive algorithms that tailor instruction to individual learners' needs and preferences (VanLehn, 2011; Chen et al., 2020). Additionally, scholars highlight the significance of AI-driven tools in providing instant feedback to language learners, enabling timely correction of errors and scaffolding of learning processes (Heift & Schulze, 2007; Chiu et al., 2018). Furthermore, the definition of AI in language learning extends beyond technological aspects to encompass socio-cultural dimensions, including the ethical implications of AI-mediated interactions and the impact on learner autonomy (Higgins et al., 2012; Bax, 2019). Moreover, recent definitions emphasize the importance of considering diverse learner populations and educational contexts when exploring the role of AI in language education, emphasizing inclusivity and accessibility (Holstein et al., 2020; Park

& Lee, 2021). Therefore, a review of definitions of AI in language learning provides a nuanced understanding of the evolving conceptualizations and implications of integrating AI technologies into language education practices.

The importance of language learning and the role of technology in education are intertwined, with technology playing a crucial role in enhancing language acquisition and proficiency across diverse educational contexts. Language learning is crucial for fostering intercultural communication, global collaboration, and cognitive development (Krashen, 1982; Council of Europe, 2001). In today's interconnected world, proficiency in multiple languages is increasingly valued in academic, professional, and personal spheres (Bialystok, 2001; European Commission, 2012). Technology serves as a powerful tool to support language learning by providing access to authentic language materials, facilitating interactive communication with speakers of the target language, and offering personalized instruction and feedback (Chapelle, 2001; Stockwell, 2012). Digital language learning platforms, such as Duolingo and Rosetta Stone, offer engaging and interactive experiences that cater to diverse learning styles and preferences (García-Peñalvo et al., 2020; Kim et al., 2020). Moreover, the integration of artificial intelligence (AI) technologies, such as natural language processing (NLP) algorithms and machine learning models, enables the development of intelligent tutoring systems that adapt to individual learners' needs and provide timely feedback (Heift & Schulze, 2007; Chiu et al., 2018). Additionally, technology facilitates cultural immersion and authentic language use through multimedia resources, virtual reality simulations, and online language communities (Thorne et al., 2010; Rodríguez-Muñiz & Padilla-Zea, 2021). Therefore, the synergy between language learning and technology underscores the importance of leveraging technological innovations to enhance language education and equip learners with the skills and competencies needed for success in today's globalized world.

In recent years, advancements in artificial intelligence (AI) have revolutionized various aspects of education, particularly in the realm of language learning. AI-driven tools offer the potential to personalize learning experiences, provide instantaneous feedback, and engage learners in interactive activities, thereby transforming traditional teaching methods. This study delves into the burgeoning field of AI-driven tools in English language education, aiming to explore their effectiveness, impact, and learner perceptions in diverse educational settings.

One of the primary motivations for this study stems from the growing recognition of AI's capacity to tailor educational experiences to individual learner needs. While traditional classroom approaches often adopt a uniform instructional approach, AI-driven tools have the capability to adapt content and learning activities based on learners' proficiency levels and learning styles. However, despite the proliferation of AI technologies in education, there remains a research gap concerning their specific effectiveness in personalizing English language learning across varying proficiency levels. Understanding how AI tools can be optimized to cater to diverse learner needs is crucial for advancing educational practices and improving learning outcomes in language acquisition.

1) The research questions guiding this study are designed to address key aspects of AI-driven tools in English language learning. The questions are:

2) How effective are AI-driven tools in personalizing English language learning for different proficiency levels?

3) What is the impact of instant feedback provided by AI-driven tools on the language acquisition progress of English learners?

4) How do learners perceive the use of AI-driven tools in their English language learning experience?

The significance of this study lies in its potential to inform educators, policymakers, and developers about the optimal integration of AI-driven tools in language education. By identifying the strengths and limitations of these technologies, the study aims to offer practical recommendations for enhancing teaching practices and student engagement. Moreover, the findings will contribute to the broader discourse on the role of AI in educational innovation, fostering a deeper understanding of how technological advancements can be harnessed to meet the diverse learning needs of students in multicultural and multilingual educational environments.

LITERATURE REVIEW

AI-Powered Language Learning Tools

AI-driven tools for language learning encompass a wide range of technological applications that utilize artificial intelligence (AI) techniques to enhance language acquisition and proficiency. These tools leverage machine learning algorithms, natural language processing (NLP) techniques, and data analytics to provide personalized learning experiences, instant feedback, and adaptive instruction (Chiu & Ching, 2018; Kim et al., 2020). One category of AI-driven tools includes language learning apps and platforms, such as Duolingo, Babbel, and Rosetta Stone, which offer interactive lessons, gamified exercises, and immersive experiences tailored to learners' proficiency levels and learning styles (García-Peñalvo et al., 2020; Rodríguez-Muñiz & Padilla-Zea, 2021). These platforms use AI algorithms to analyze learner data, track progress, and recommend personalized learning paths and practice activities (Wang & Wen, 2019; Park & Lee, 2021). Another type of AI-driven tool is intelligent tutoring systems (ITS), which provide individualized instruction and feedback through virtual tutors or chatbots (Heift & Schulze, 2007; Chen et al., 2020). ITSs employ AI techniques such as natural language understanding (NLU) and machine learning to engage learners in conversation, answer questions, and

assess language skills (Lee & Lee, 2021). Furthermore, AI-driven tools facilitate language learning through automatic speech recognition (ASR) systems, which analyze learners' pronunciation and provide feedback to improve speaking skills (Chen et al., 2022; Li et al., 2023). Overall, AI-driven tools for language learning represent innovative approaches to language education, offering learners personalized, interactive, and effective ways to acquire and develop language skills in diverse contexts.

Popular AI language learning platforms and apps have revolutionized the way individuals acquire and enhance their language skills by leveraging artificial intelligence (AI) technologies to offer personalized, interactive, and effective learning experiences. One prominent example is Duolingo, a widely used language learning app that utilizes AI algorithms to tailor lessons to learners' proficiency levels and provide instant feedback on their performance (von Ahn & Lewis, 2011). Another notable platform is Babbel, which employs AI-driven speech recognition technology to assess learners' pronunciation and offer targeted practice exercises (Korell, 2020). Rosetta Stone, a veteran in the language learning industry, has integrated AI features to create immersive language learning environments that adapt to learners' progress and preferences (Poushter & Masci, 2021). Additionally, Memrise incorporates AI algorithms to optimize the memorization process through spaced repetition and personalized learning paths (Hochstein & Green, 2018). Finally, Busuu combines AI-powered language courses with community-based learning, enabling users to practice their language skills with native speakers and receive feedback on their writing and speaking (Keegan, 2019). These examples highlight how AI language learning platforms and apps have democratized access to language education, empowering learners to study anytime, anywhere, and at their own pace while benefiting from personalized instruction and feedback.

The benefits of AI in language learning are multifaceted, encompassing personalized instruction, adaptive learning, and enhanced engagement, among others. AI-driven language learning platforms offer personalized learning experiences by analyzing learners' proficiency levels, learning styles, and progress data to tailor instruction and content accordingly (García-Peñalvo et al., 2020). This personalization fosters individualized learning paths that address learners' specific needs and preferences, ultimately enhancing motivation and efficacy (Chen et al., 2020). Moreover, AI enables adaptive learning, where instructional content and activities dynamically adjust based on learners' responses and performance, providing targeted support and challenges to optimize learning outcomes (Lee & Lee, 2021). This adaptability ensures that learners receive instruction at their appropriate skill levels, promoting continuous growth and mastery (Chiu & Ching, 2018). Additionally, AI-powered language learning platforms facilitate interactive and engaging learning experiences through gamification, virtual reality simulations, and multimedia resources, thereby promoting active participation and deep engagement with the language (Kim et al., 2020). By leveraging AI technologies, language learners benefit from personalized, adaptive, and immersive learning environments that optimize their language acquisition journey.

Personalized Learning with AI

AI personalizes language learning experiences by leveraging advanced algorithms to tailor instruction and content to the unique needs and preferences of individual learners (García-Peñalvo et al., 2020). One key way AI achieves personalization is through adaptive learning systems that analyze learners' performance data and adjust the difficulty level of activities and materials in real-time (Lee & Lee, 2021). For example, AI algorithms can identify areas of weakness or misunderstanding and provide targeted practice exercises or remedial content to address these gaps (Chiu & Ching, 2018). Furthermore, AI-powered language learning platforms employ machine learning techniques to track learners' progress and adaptively recommend learning paths, activities, and resources based on their proficiency levels, learning styles, and interests (Wang & Wen, 2019). Additionally, natural language processing (NLP) algorithms enable AI systems to understand learners' interactions and responses, allowing for more natural and intuitive communication in language learning interactions (Kim et al., 2020). Moreover, AI personalization extends to providing feedback on learners' performance, with AI-driven systems offering instant, targeted feedback on pronunciation, grammar, vocabulary, and comprehension (Chen et al., 2020). By personalizing language learning experiences in these ways, AI technologies optimize engagement, motivation, and learning outcomes for learners of all levels and backgrounds.

Adaptive language learning algorithms and individualized language lesson plans represent innovative approaches to language education that harness the power of artificial intelligence (AI) to tailor instruction to the specific needs and abilities of learners (García-Peñalvo et al., 2020). These algorithms analyze learners' performance data, including their proficiency levels, learning preferences, and progress, to dynamically adjust the content, pace, and difficulty of language lessons (Lee & Lee, 2021). For example, adaptive algorithms can identify areas of weakness or misunderstanding and provide additional practice exercises or supplementary materials to reinforce learning (Chiu & Ching, 2018). Moreover, AI-driven systems can generate individualized lesson plans that prioritize areas for improvement and target learners' specific language learning goals (Wang & Wen, 2019). By personalizing instruction in this manner, adaptive algorithms and individualized lesson plans optimize learners' engagement, motivation, and learning outcomes, ensuring that each learner receives instruction that is tailored to their

unique needs and preferences (Kim et al., 2020). Overall, these AI-driven approaches to language learning represent a paradigm shift in language education, offering learners personalized, adaptive, and effective pathways to language proficiency.

Tailoring language teaching content to learners' language proficiency levels, interests, and learning styles is essential for optimizing learning outcomes and promoting engagement in language education (Chapelle, 2001). By assessing learners' proficiency levels through diagnostic assessments and placement tests, instructors can identify learners' strengths and weaknesses and select appropriate materials and activities that align with their current abilities (Richards & Schmidt, 2013). Additionally, incorporating learners' interests into language teaching content fosters intrinsic motivation and enhances engagement (Dörnyei & Ushioda, 2011). For example, instructors can integrate authentic materials such as articles, videos, and podcasts related to learners' hobbies, professions, or cultural interests into language lessons (Kong, 2018). Furthermore, accommodating learners' diverse learning styles, such as visual, auditory, or kinesthetic preferences, ensures that instruction resonates with individual learners' cognitive processes and preferences (Reid, 1995). For instance, visual learners may benefit from graphic organizers, diagrams, and multimedia presentations, while auditory learners may prefer listening activities and oral discussions (Fleming & Mills, 1992). By tailoring language teaching content to learners' proficiency levels, interests, and learning styles, instructors create inclusive and effective learning environments that cater to the diverse needs of language learners.

Natural Language Processing (NLP) in Language Learning

Natural Language Processing (NLP) technology plays a significant role in language learning by enabling the development of innovative applications that enhance various aspects of language acquisition and proficiency (Chen et al., 2020). One prominent application of NLP in language learning is automated language assessment and feedback systems, which analyze learners' written or spoken language productions to provide instant, targeted feedback on grammar, vocabulary, and pronunciation errors (Chiu & Ching, 2018). Additionally, NLP-powered chatbots and virtual tutors offer learners opportunities for interactive language practice and conversation, simulating real-life communication scenarios and providing scaffolding and support (Lee & Lee, 2021). Furthermore, NLP algorithms facilitate the creation of language learning resources, such as text summarization tools, language corpora, and sentiment analysis tools, which enrich learners' exposure to authentic language materials and promote vocabulary acquisition and comprehension (Rodríguez-Muñiz & Padilla-Zea, 2021). Moreover, NLP technology enables the development of language learning platforms with advanced search and recommendation functionalities, allowing learners to access relevant learning materials and resources tailored to their interests and proficiency levels (Wang & Wen, 2019). By leveraging NLP technology in these ways, language learning applications offer learners personalized, interactive, and effective pathways to language acquisition and proficiency.

Automatic speech recognition (ASR) technology has become a valuable tool for pronunciation practice in language learning, offering learners opportunities to improve their speaking skills through real-time feedback and assessment (Chen et al., 2020). ASR systems analyze learners' spoken language productions and compare them to native speaker models, identifying pronunciation errors and providing instant feedback on accuracy and fluency (Chiu & Ching, 2018). By pinpointing specific areas for improvement, ASR-based pronunciation practice enables learners to focus on mastering challenging sounds, intonation patterns, and rhythm in the target language (Kim et al., 2020). Moreover, ASR technology supports self-paced learning, allowing learners to practice pronunciation exercises independently and receive immediate corrective feedback, which enhances learning efficiency and effectiveness (Li et al., 2023). Additionally, ASR-enabled language learning platforms offer interactive speaking activities and simulations, such as dialogue practice, role-playing exercises, and pronunciation games, that engage learners in authentic communication tasks and foster oral proficiency (Lee & Lee, 2021). Furthermore, ASR technology facilitates personalized learning experiences by adapting feedback and instruction to individual learners' pronunciation difficulties and proficiency levels, promoting targeted skill development and progression (Chen et al., 2022). Overall, ASR for pronunciation practice represents a powerful tool in language learning, offering learners immersive, interactive, and personalized opportunities to enhance their speaking abilities and achieve greater proficiency in the target language.

Language generation technology has emerged as a powerful tool for creating interactive exercises and content in language learning, facilitating the development of engaging and immersive learning experiences (Dusek et al., 2020). By harnessing natural language generation (NLG) algorithms, language learning platforms can automatically generate a wide range of linguistic content, including dialogues, texts, questions, and prompts, tailored to learners' proficiency levels and learning objectives (Chen et al., 2020). NLG systems can produce authentic language materials that simulate real-world communication situations, promoting contextualized language use and cultural immersion (Huang et al., 2015). Additionally, NLG-generated exercises enable learners to practice language skills in various contexts and formats, such as role-playing scenarios, storytelling activities, and writing prompts, fostering creativity and communicative competence (Mory, 2017). Moreover, NLG technology supports the creation of personalized learning experiences by adapting

content and difficulty levels to individual learners' needs, preferences, and progress (Lee & Lee, 2021). By generating interactive exercises and content, NLG enhances learner engagement, motivation, and autonomy, offering learners dynamic and effective pathways to language acquisition and proficiency (Chiu & Ching, 2018).

AI-Based Feedback and Assessment

AI plays a crucial role in providing instant feedback to language learners, offering timely and targeted guidance to support their language acquisition journey (Chen et al., 2020). Through natural language processing (NLP) algorithms, AI systems can analyze learners' written and spoken language productions, identifying errors in grammar, vocabulary, and pronunciation, and providing immediate corrective feedback (Chiu & Ching, 2018). This real-time feedback enables learners to recognize and rectify mistakes as they occur, promoting accuracy and fluency in language use (Kim et al., 2020). Moreover, AI-driven feedback systems offer personalized guidance tailored to individual learners' needs and proficiency levels, addressing specific areas of weakness and providing adaptive instruction (Lee & Lee, 2021). By offering instant feedback, AI enhances learners' awareness of their language skills and fosters self-directed learning, empowering learners to take control of their language learning process (García-Peñalvo et al., 2020). Additionally, AI-powered feedback systems facilitate formative assessment, allowing instructors to monitor learners' progress and provide targeted support and interventions (Wang & Wen, 2019). By leveraging AI technology to provide instant feedback, language learners receive continuous support and guidance, promoting their language development and proficiency.

Automated grading and assessment of language skills have revolutionized language education by providing efficient and reliable evaluation methods for learners' linguistic proficiency (Attali & Burstein, 2006). Through natural language processing (NLP) techniques, automated systems can analyze various aspects of language performance, including grammar, vocabulary, coherence, and fluency, to provide detailed and accurate assessments (Chen et al., 2020). These systems can evaluate written and spoken language productions, such as essays, speeches, and conversations, offering feedback on grammatical accuracy, lexical diversity, coherence, and pronunciation (Chiu & Ching, 2018). Moreover, automated grading systems enable standardized and consistent evaluation across a large number of learners, reducing the burden on instructors and ensuring fairness and objectivity in assessment (Coniam & Falvey, 2018). Additionally, automated assessment tools offer immediate feedback to learners, allowing them to identify areas for improvement and track their progress over time (Lee & Lee, 2021). By leveraging AI technology, automated grading and assessment systems streamline the evaluation process, enhance the efficiency of language education, and

provide learners with valuable insights into their language proficiency levels and areas for development.

AI plays a pivotal role in identifying areas of improvement and offering targeted suggestions in language learning, enhancing learners' ability to address specific language challenges and make meaningful progress (Chiu & Ching, 2018). Through sophisticated natural language processing (NLP) algorithms, AI systems can analyze learners' language productions, such as written essays, spoken conversations, or exercises, to pinpoint areas of weakness in grammar, vocabulary, pronunciation, and coherence (García-Peñalvo et al., 2020). By identifying patterns of errors or inconsistencies, AI algorithms can provide detailed diagnostic feedback, highlighting specific language features that learners need to focus on for improvement (Lee & Lee, 2021). Moreover, AI-powered language learning platforms leverage adaptive learning technologies to personalize instruction and offer targeted suggestions based on learners' individual needs and proficiency levels (Kim et al., 2020). For example, AI algorithms can recommend additional practice exercises, learning resources, or instructional materials tailored to learners' identified areas of weakness (Wang & Wen, 2019). Additionally, AI systems can offer interactive tutorials, explanations, or examples to clarify concepts and reinforce learning (Chen et al., 2022). Furthermore, AI-enabled feedback systems can track learners' progress over time and adjust recommendations dynamically as learners' skills improve, ensuring that suggestions remain relevant and effective (Chen et al., 2020). By harnessing AI technology to identify areas of improvement and offer targeted suggestions, language learners receive personalized, adaptive, and effective support to enhance their language proficiency.

Challenges and Considerations

Addressing concerns about overreliance on AI in language learning is crucial to ensuring balanced and effective language education (Dörnyei & Ushioda, 2011). While AI technologies offer numerous benefits, including personalized instruction, immediate feedback, and adaptive learning experiences, there are valid concerns about potential drawbacks and limitations (Chen et al., 2020). One major concern is the risk of overdependence on AI-driven language learning platforms, which may lead to a passive learning experience and a lack of critical thinking and problem-solving skills (García-Peñalvo et al., 2020). Moreover, there are concerns about the accuracy and reliability of AI-generated feedback, particularly in complex language tasks such as writing composition or oral communication, where nuanced aspects of language proficiency may be challenging for AI systems to evaluate (Lee & Lee, 2021). Additionally, there are ethical considerations regarding data privacy, algorithmic bias, and the potential for AI technologies to reinforce cultural stereotypes or perpetuate linguistic hegemony (Coniam & Falvey, 2018). Furthermore, there is a risk of technological dependency, where learners may become reliant on AI tools

and lose motivation or confidence in their own language learning abilities without technological support (Wang & Wen, 2019). To address these concerns, it is essential to adopt a balanced approach that integrates AI technologies with traditional language teaching methods, fostering a blended learning environment that combines the benefits of AI-driven instruction with opportunities for authentic communication, critical thinking, and creative expression (Kim et al., 2020). Additionally, educators should provide guidance and support to help learners develop metacognitive strategies and digital literacy skills to navigate AI-mediated language learning effectively (Chiu & Ching, 2018). By acknowledging and addressing concerns about overreliance on AI in language learning, educators can harness the potential of AI technologies while promoting responsible and sustainable language education practices.

While AI language learning tools offer significant advantages, such as personalized instruction, adaptive feedback, and enhanced learning experiences, they also present potential limitations that warrant consideration (Chiu & Ching, 2018). One limitation is the risk of algorithmic bias, where AI systems may inadvertently perpetuate cultural stereotypes or favor certain language varieties over others, leading to inequitable learning outcomes (Coniam & Falvey, 2018). Additionally, AI-driven feedback systems may struggle to accurately assess complex language skills such as creativity, critical thinking, and cultural competence, which are essential components of language proficiency (Lee & Lee, 2021). Moreover, there are concerns about the overreliance on AI technologies, which may lead to a passive learning experience and hinder learners' development of metacognitive skills and autonomy (Dörnyei & Ushioda, 2011). Furthermore, there are ethical considerations regarding data privacy and security, as AI language learning platforms often collect and analyze large amounts of learner data, raising concerns about how this data is stored, used, and protected (García-Peñalvo et al., 2020). Finally, there is a risk of technological dependency, where learners may become reliant on AI tools and struggle to adapt to traditional language learning methods or real-life communication situations (Wang & Wen, 2019). To mitigate these limitations, it is essential to adopt a critical approach to AI-mediated language learning, fostering awareness of the strengths and weaknesses of AI tools and promoting responsible and ethical use of technology in language education (Kim et al., 2020). Additionally, educators should supplement AI-driven instruction with opportunities for authentic communication, collaborative learning, and critical reflection, ensuring that learners develop a well-rounded set of language skills and competencies.

Ensuring inclusivity and accessibility in AI-driven language education is essential to promote equitable learning opportunities for all learners, regardless of their background, abilities, or circumstances (Dong et al., 2021). One key consideration is the accessibility of AI-driven language learning platforms for learners with disabilities, ensuring that these platforms are designed with features such as screen readers, text-to-speech, and voice recognition capabilities to accommodate learners with visual, auditory, or motor impairments (Leong et al., 2020). Additionally, there is a need to address language diversity and inclusivity by offering support for learners from diverse linguistic backgrounds, including speakers of minority languages or dialects (Gutiérrez-Colón et al., 2020). AI technologies should be trained on diverse language data sets and incorporate multilingual support to cater to learners' linguistic needs and preferences (Yuan et al., 2021). Moreover, there is a need to consider the digital divide and ensure that AI-driven language learning tools are accessible to learners with limited access to technology or internet connectivity (Sáiz-Manzanares et al., 2021). This may involve providing offline learning options, mobile-friendly interfaces, or low-bandwidth versions of AI platforms to reach learners in underserved communities. Furthermore, educators should be mindful of cultural sensitivity and representation in AI-driven language learning materials, avoiding stereotypes and biases and promoting diverse perspectives and cultural awareness (Chen et al., 2020). By prioritizing inclusivity and accessibility in AI-driven language education, educators can create learning environments that are welcoming, supportive, and empowering for all learners, fostering a culture of diversity, equity, and inclusion.

METHODOLOGY

The study employed a descriptive research design to explore the roles of AI-driven tools in personalizing English language learning and providing instant feedback. A sample of 200 students was selected from four international schools, with 50 students from each school. A stratified random sampling technique was used to ensure a diverse representation of students across different proficiency levels and demographics. The selection criteria included students who had been using AI-driven tools for English language learning for at least six months to ensure sufficient exposure to the tools. The primary research instrument was a structured questionnaire, designed to gather quantitative and qualitative data on students' experiences and perceptions. The questionnaire included multiple-choice questions, Likert scale items, and open-ended questions aligned with the three research questions. Data collection was conducted over a two-week period, with questionnaires distributed and collected through both online platforms and paper forms to accommodate different preferences and accessibility issues. The data analysis procedure involved both descriptive and inferential statistics. Descriptive statistics were used to summarize the general trends and patterns in the data, such as frequencies, means, and standard deviations. Inferential statistics, including t-tests and ANOVA, were employed to test the hypotheses and determine the significance of the differences observed among different groups. Qualitative

data from open-ended questions were analyzed using thematic analysis to identify common themes and insights. The comprehensive approach ensured a robust analysis of the effectiveness and perceptions of AI-driven tools in English language learning, providing a well-rounded understanding of their impact.

RESULTS

The results of this study offer a comprehensive analysis of the roles AI-driven tools play in personalizing English language learning and providing instant feedback. Data collected from questionnaires reveal the effectiveness of these tools in tailoring learning experiences to individual proficiency levels, as well as the perceived impact on learners' language acquisition progress. Additionally, learner perceptions of AI-driven tools highlight both advantages and disadvantages, providing a nuanced understanding of their role in modern language education. The following sections delve into the findings for each research question, presenting key insights and statistical evidence to support the study's hypotheses.

Research Question 1: How effective are AI-driven tools in personalizing English language learning for different proficiency levels?

Questionnaire Item 1: On a scale from 1 to 10, how personalized do you feel your learning experience is when using AI-driven tools?

Table 1. Perceived Personalization of Learning Experience Using AI-Driven Tools

Rating	Number of Students	Percentage (%)
1	5	2.5
2	8	4.0
3	12	6.0
4	10	5.0
5	20	10.0
6	25	12.5
7	30	15.0
8	40	20.0
9	30	15.0
10	20	10.0
Total	**200**	**100.0**

The questionnaire item regarding the perceived personalization of learning experiences when using AI-driven tools yielded diverse responses. The results, presented in Table 1, show that the majority of students rated the personalization between 6 and 10 on a 10-point scale. Specifically, 25 students (12.5%) rated the personalization at 6, 30 students (15%) at 7, 40 students (20%) at 8, 30 students (15%) at 9, and 20 students (10%) at 10. These ratings indicate a generally positive perception of personalization, with 145 out of 200 students (72.5%) rating it 6 or higher. Conversely, lower ratings were less common: 5 students (2.5%) rated it 1, 8 students (4%) rated it 2, 12 students

(6%) rated it 3, 10 students (5%) rated it 4, and 20 students (10%) rated it 5. This distribution suggests that while a small segment of students feels that the personalization is inadequate, the vast majority perceive AI-driven tools as effectively tailoring their learning experiences to their individual needs. This overall positive trend supports the hypothesis that AI-driven tools enhance the personalization of English language learning for various proficiency levels.

Questionnaire Item 2: How often do you use AI-driven tools for English language learning?

Table 2. Frequency of AI-Driven Tool Usage for English Language Learning

Frequency	Number of Students	Percentage (%)
Daily	60	30.0
Several times a week	80	40.0
Once a week	30	15.0
Several times a month	20	10.0
Rarely	10	5.0
Total	**200**	**100.0**

Responses to the question about the frequency of using AI-driven tools for English language learning are summarized in Table 2. A significant proportion of students reported frequent use of these tools. Specifically, 60 students (30%) indicated they use AI-driven tools daily, and 80 students (40%) reported using them several times a week. Combined, these frequent users account for 70% of the sample, suggesting a high engagement level with AI-driven learning tools. Meanwhile, 30 students (15%) reported using the tools once a week, and 20 students (10%) used them several times a month. Only 10 students (5%) indicated that they rarely use AI-driven tools. These findings highlight that most students regularly incorporate AI-driven tools into their English language learning routines, reinforcing the importance of these tools in modern educational practices. The high frequency of use among the majority suggests a reliance on and perceived benefit from these tools in enhancing their learning experience.

Questionnaire Item 3: Do you feel that the AI-driven tools adjust the difficulty of tasks according to your proficiency level?

Table 3. Perception of AI-Driven Tools Adjusting Task Difficulty to Proficiency Level

Response	Number of Students	Percentage (%)
Strongly Agree	70	35.0
Agree	80	40.0
Neutral	30	15.0
Disagree	15	7.5
Strongly Disagree	5	2.5
Total	**200**	**100.0**

The perception of whether AI-driven tools adjust the difficulty of tasks according to students' proficiency levels is illustrated in Table 3. The majority of students felt positively about this aspect, with 70 students (35%) strongly agreeing and 80 students (40%) agreeing that the AI-driven tools adjust task difficulty appropriately. This totals to 75% of the respondents who believe the tools are effective in tailoring the learning experience to their proficiency levels. A smaller group, comprising 30 students (15%), responded neutrally, indicating no strong feelings either way. Only 15 students (7.5%) disagreed, and an even smaller fraction, 5 students (2.5%), strongly disagreed with the statement. These results suggest that most students perceive AI-driven tools as responsive and adaptive to their learning needs. The high percentage of agreement supports the notion that these tools are effective in providing a personalized learning experience by adjusting task difficulty according to individual proficiency levels.

Questionnaire Item 4: How satisfied are you with the personalized content provided by AI-driven tools?

Table 4. Satisfaction with Personalized Content Provided by AI-Driven Tools

Satisfaction Level	Number of Students	Percentage (%)
Very Satisfied	65	32.5
Satisfied	85	42.5
Neutral	30	15.0
Dissatisfied	15	7.5
Very Dissatisfied	5	2.5
Total	**200**	**100.0**

Table 4 shows the levels of satisfaction among students regarding the personalized content provided by AI-driven tools. A significant majority expressed positive satisfaction, with 65 students (32.5%) indicating they are very satisfied and 85 students (42.5%) stating they are satisfied. This combined 75% satisfaction rate underscores the effectiveness of AI-driven tools in delivering personalized content that meets learners' needs. On the other hand, 30 students (15%) felt neutral about the personalized content, neither satisfied nor dissatisfied. A smaller segment of the population reported dissatisfaction, with 15 students (7.5%) dissatisfied and only 5 students (2.5%) very dissatisfied. These findings indicate that while there is a high level of satisfaction with the personalized content, there remains a small portion of students who are not entirely pleased with their experience. The overall positive feedback suggests that AI-driven tools are generally successful in creating content that caters to individual learning preferences and proficiency levels, thus supporting the broader aim of enhancing personalized learning in English language education.

Research Question 2: What is the impact of instant feedback provided by AI-driven tools on the language acquisition progress of English learners?

Questionnaire Item 5: How frequently do you receive instant feedback from AI-driven tools during your English language learning sessions?

Table 5. Frequency of Receiving Instant Feedback from AI-Driven Tools

Frequency	Number of Students	Percentage (%)
Always	70	35.0
Often	80	40.0
Sometimes	30	15.0
Rarely	15	7.5
Never	5	2.5
Total	**200**	**100.0**

Table 5 summarizes the frequency with which students receive instant feedback from AI-driven tools during their English language learning sessions. A significant proportion of students reported receiving instant feedback regularly, with 70 students (35%) stating they always receive it and 80 students (40%) indicating they often receive it. This suggests that 75% of the students benefit from frequent instant feedback, which is a substantial majority. Meanwhile, 30 students (15%) indicated they sometimes receive instant feedback, showing a moderate level of engagement. A smaller group, consisting of 15 students (7.5%), reported rarely receiving instant feedback, and only 5 students (2.5%) stated they never receive it. These results highlight that most students are consistently receiving instant feedback from AI-driven tools, which is likely to contribute positively to their language acquisition progress. The high frequency of instant feedback aligns with the tools' objective of providing timely and relevant information to help students correct errors and reinforce learning, thereby facilitating continuous improvement in their English language skills.

Questionnaire Item 6: How helpful do you find the instant feedback in understanding your mistakes?

Table 6. Helpfulness of Instant Feedback in Understanding Mistakes

Helpfulness Level	Number of Students	Percentage (%)
Very Helpful	75	37.5
Helpful	85	42.5
Neutral	25	12.5
Unhelpful	10	5.0
Very Unhelpful	5	2.5
Total	**200**	**100.0**

Table 6 details students' perceptions of how helpful the instant feedback from AI-driven tools is in understanding their mistakes. A majority of students found the feedback beneficial, with 75 students (37.5%) rating it as very helpful and 85 students (42.5%) rating it as helpful. This indicates that 80% of the respondents appreciate the value of instant feedback in aiding their comprehension of mistakes.

Conversely, 25 students (12.5%) were neutral, suggesting no strong opinion on the matter. A smaller segment of the population, 10 students (5%), found the feedback unhelpful, and 5 students (2.5%) rated it as very unhelpful. These findings demonstrate that instant feedback is largely perceived as a critical component in the learning process, significantly aiding students in identifying and correcting errors promptly. This positive perception underscores the importance of incorporating real-time feedback mechanisms in AI-driven tools to enhance the efficacy of language learning by providing immediate, actionable insights.

Questionnaire Item 7: Do you feel that the instant feedback helps you to improve your language skills more quickly compared to traditional feedback methods?

Table 7. Perception of Instant Feedback vs. Traditional Feedback in Improving Language Skills

Response	Number of Students	Percentage (%)
Strongly Agree	70	35.0
Agree	90	45.0
Neutral	25	12.5
Disagree	10	5.0
Strongly Disagree	5	2.5
Total	**200**	**100.0**

Table 7 illustrates the students' perceptions regarding whether instant feedback from AI-driven tools helps them improve their language skills more quickly compared to traditional feedback methods. A significant majority agreed with this statement, with 70 students (35%) strongly agreeing and 90 students (45%) agreeing. This suggests that 80% of the students believe instant feedback is more effective in accelerating their language learning progress compared to traditional methods. Meanwhile, 25 students (12.5%) responded neutrally, indicating no strong preference for either feedback method. A smaller portion of the respondents disagreed, with 10 students (5%) disagreeing and 5 students (2.5%) strongly disagreeing with the statement. These results indicate a strong preference among students for the immediacy and relevance of instant feedback provided by AI-driven tools. The perceived effectiveness of instant feedback in facilitating quicker improvement in language skills highlights its value as an essential component in modern language learning strategies.

Questionnaire Item 8: How has your overall language acquisition progress changed since you started using AI-driven tools for instant feedback?

Table 8. Change in Language Acquisition Progress Since Using AI-Driven Tools for Instant Feedback

Progress Level	Number of Students	Percentage (%)
Significantly Improved	80	40.0
Improved	90	45.0
No Change	20	10.0
Worsened	5	2.5
Significantly Worsened	5	2.5
Total	**200**	**100.0**

Table 8 presents students' self-reported changes in their overall language acquisition progress since they started using AI-driven tools for instant feedback. The majority of students reported positive progress, with 80 students (40%) stating their progress had significantly improved and 90 students (45%) indicating it had improved. This reflects a combined 85% of the respondents experiencing a positive impact on their language acquisition due to instant feedback. Conversely, 20 students (10%) reported no change in their progress. A minority of students noted a negative impact, with 5 students (2.5%) stating their progress had worsened and another 5 students (2.5%) indicating it had significantly worsened. These findings underscore the effectiveness of AI-driven tools in enhancing language acquisition for most students. The significant proportion of students experiencing improvements suggests that instant feedback is a valuable feature of AI-driven tools, contributing to more effective and accelerated language learning. The positive results highlight the importance of integrating real-time feedback mechanisms in educational technologies to support continuous learning and skill development.

Research Question 3: How do learners perceive the use of AI-driven tools in their English language learning experience?

Questionnaire Item 9: How enjoyable do you find using AI-driven tools for learning English compared to traditional methods?

Table 9. Enjoyment of Using AI-Driven Tools Compared to Traditional Methods

Enjoyment Level	Number of Students	Percentage (%)
Very Enjoyable	70	35.0
Enjoyable	90	45.0
Neutral	25	12.5
Not Enjoyable	10	5.0
Very Unenjoyable	5	2.5
Total	**200**	**100.0**

Table 9 highlights the students' enjoyment levels when using AI-driven tools for learning English compared to traditional methods. A substantial majority found AI-driven tools more enjoyable, with 70 students (35%) rating their experience as very enjoyable and 90 students (45%) as enjoyable. Together, these account for 80% of the respondents, indicating a strong preference for AI-driven tools over traditional methods in terms of enjoyment. Conversely, 25 students (12.5%) were neutral, showing no strong preference. A smaller segment found the experience less enjoyable, with 10 students (5%) rating it as not enjoyable and 5 students (2.5%) as very

unenjoyable. These findings suggest that most students perceive AI-driven tools as a more enjoyable and engaging method for learning English compared to traditional approaches. The high enjoyment levels may contribute to increased motivation and sustained engagement in language learning activities, further enhancing the effectiveness of AI-driven educational technologies.

Questionnaire Item 10: What are the main advantages you perceive in using AI-driven tools for English language learning?

Table 10. Perceived Advantages of Using AI-Driven Tools for English Language Learning

Advantage	Number of Mentions	Percentage (%)
Personalized Learning	150	75.0
Instant Feedback	140	70.0
Engaging and Interactive	130	65.0
Flexible Learning Pace	120	60.0
Access to Diverse Resources	110	55.0

Table 10 presents the main advantages students perceive in using AI-driven tools for English language learning. The most frequently mentioned advantage was personalized learning, noted by 150 students (75%), highlighting the tools' ability to tailor learning experiences to individual needs. Instant feedback was the second most cited advantage, with 140 students (70%) appreciating the timely corrections and guidance that facilitate quick learning adjustments. Engaging and interactive features were mentioned by 130 students (65%), indicating that the interactive elements of AI-driven tools make learning more enjoyable and immersive. Flexible learning pace was another significant advantage, with 120 students (60%) valuing the ability to learn at their own speed, which accommodates different learning styles and schedules. Finally, access to diverse resources was mentioned by 110 students (55%), underscoring the breadth of materials and activities available through AI-driven platforms, which enrich the learning experience and provide varied practice opportunities. These advantages collectively suggest that AI-driven tools offer a comprehensive and adaptable approach to English language learning, addressing key aspects that enhance effectiveness and learner satisfaction.

Questionnaire Item 11: What are the main disadvantages you perceive in using AI-driven tools for English language learning?

Table 11. Perceived Disadvantages of Using AI-Driven Tools for English Language Learning

Disadvantage	Number of Mentions	Percentage (%)
Lack of Human Interaction	130	65.0
Technical Issues and Glitches	100	50.0
Over-reliance on Technology	90	45.0
Limited Context Understanding	80	40.0
High Cost or Access Issues	60	30.0

Table 11 outlines the main disadvantages students perceive in using AI-driven tools for English language learning. The most frequently mentioned disadvantage was the lack of human interaction, cited by 130 students (65%), highlighting the absence of face-to-face communication and personalized teacher guidance. Technical issues and glitches were noted by 100 students (50%), indicating that software malfunctions and connectivity problems can disrupt the learning process. Over-reliance on technology was another concern, mentioned by 90 students (45%), who worried about becoming too dependent on digital tools for learning. Limited context understanding was cited by 80 students (40%), reflecting that AI-driven tools sometimes struggle to grasp nuanced language use and cultural contexts. Finally, high cost or access issues were mentioned by 60 students (30%), pointing to financial barriers or lack of access to necessary technology for some learners. These disadvantages highlight the need for a balanced approach in integrating AI-driven tools with traditional methods to address these limitations and ensure a comprehensive learning experience.

Questionnaire Item 12: Would you recommend AI-driven tools to other English learners? Why or why not?

Table 12. Recommendations for AI-Driven Tools in English Language Learning

Recommendation	Number of Responses	Percentage (%)
Yes, I would recommend	160	80.0
No, I would not recommend	25	12.5
Neutral	15	7.5
Total	**200**	**100.0**

Table 12 summarizes students' recommendations regarding AI-driven tools for English language learning. A significant majority, 160 students (80%), expressed a positive recommendation, indicating they would recommend AI-driven tools to other English learners. The reasons for this endorsement likely include the tools' effectiveness in providing personalized learning experiences, timely feedback, and engaging interactive features, as previously highlighted. Conversely, 25 students (12.5%) indicated they would not recommend AI-driven tools, potentially due to concerns such as lack of human interaction, technical issues, or preferences for traditional learning methods. Additionally, 15 students (7.5%) were neutral in their recommendation, suggesting no strong opinion either way. These findings illustrate that while a substantial majority finds AI-driven tools beneficial and would endorse them to others, there are considerations and preferences that influence individual recommendations. Overall, the positive endorsement reflects

the perceived value and potential benefits of AI-driven tools in enhancing English language learning experiences, but also underscores the importance of addressing concerns and preferences to ensure widespread acceptance and effectiveness in educational settings.

HYPOTHESES

Hypothesis 1: AI-driven tools significantly improve the personalization of English language learning for learners at varying proficiency levels.

Based on the findings from the tables and discussions above, this hypothesis finds support in several key aspects of students' perceptions and experiences with AI-driven tools. Firstly, Table 1 illustrates that a majority of students perceive their learning experiences with AI-driven tools as personalized. Specifically, 72.5% of students rated the personalization of their learning experience as 6 or higher on a scale from 1 to 10. This indicates that a significant portion of learners believe AI-driven tools effectively tailor content and activities to their individual proficiency levels and learning needs. Secondly, Table 5 demonstrates that a substantial number of students (75% combined for "Always" and "Often" categories) receive instant feedback from AI-driven tools during their language learning sessions. This immediate feedback mechanism is crucial for personalization, as it allows students to promptly address mistakes and adjust their learning approach in real-time, catering directly to their current proficiency levels. Thirdly, Table 10 reveals that personalized learning was the most frequently cited advantage of AI-driven tools, mentioned by 75% of students. This underscores the tools' capability to adapt content and activities to individual learning styles and speeds, thereby enhancing the personalization of learning experiences. Thus, these findings collectively support the hypothesis that AI-driven tools significantly improve the personalization of English language learning. By providing tailored content, offering instant feedback, and accommodating diverse learning preferences, AI-driven tools effectively cater to learners at varying proficiency levels, thereby enhancing their overall language acquisition experience. The positive perceptions and experiences reported by students underscore the potential of AI-driven tools to revolutionize and optimize language learning environments by fostering personalized and adaptive educational experiences.

Hypothesis 2: Instant feedback from AI-driven tools positively influences the language acquisition progress of English learners compared to traditional feedback methods.

The findings from the tables support this hypothesis by highlighting the beneficial impact of instant feedback provided by AI-driven tools. Firstly, Table 5 indicates that a significant majority of students (75% combined for "Always" and "Often" categories) receive instant feedback from AI-driven tools during their English language learning sessions.

This frequent access to immediate feedback is crucial as it allows learners to promptly identify and correct errors, reinforcing language learning in real-time. Secondly, Table 6 reveals that the majority of students find the instant feedback very helpful (37.5%) or helpful (42.5%) in understanding their mistakes. This indicates that the feedback mechanisms in AI-driven tools effectively aid comprehension and learning adjustment, thereby facilitating quicker progress in language acquisition compared to traditional methods which may not provide such rapid and targeted feedback. Thirdly, Table 8 demonstrates that a significant proportion of students (85% combined for "Significantly Improved" and "Improved" categories) report positive changes in their overall language acquisition progress since using AI-driven tools for instant feedback. This suggests that the continuous and timely feedback from AI-driven tools contributes to enhanced learning outcomes by addressing mistakes promptly and reinforcing correct usage. These findings collectively support Hypothesis 2 by indicating that instant feedback from AI-driven tools indeed positively influences language acquisition progress. The ability to receive immediate and targeted feedback helps learners correct errors efficiently and reinforces learning, thereby accelerating language proficiency development. Compared to traditional feedback methods, which may be slower or less precise, AI-driven tools offer a significant advantage in facilitating effective learning processes and improving language skills more rapidly.

DISCUSSION OF FINDINGS

The findings from the study on the roles of AI-driven tools in English language learning provide valuable insights into their impact on personalized learning, instant feedback, learner perceptions, and overall language acquisition progress. These insights underscore the potential of AI-driven technologies to transform and enhance educational experiences in language learning contexts. Firstly, the study revealed that AI-driven tools significantly contribute to the personalization of English language learning. As shown in Table 1, a majority of students perceive their learning experiences with AI-driven tools as highly personalized. This aligns with the hypothesis that these tools can effectively tailor learning content and activities to individual proficiency levels and learning styles. Personalization is crucial in education as it enables students to engage with content that matches their current abilities and preferences, thereby optimizing their learning outcomes (Table 10). The ability of AI-driven tools to adapt to varying levels of proficiency, as reported by students, suggests that these technologies have the potential to address the diverse needs of learners more effectively than traditional one-size-fits-all approaches.

Secondly, the provision of instant feedback by AI-driven tools emerged as a significant factor influencing language acquisition progress. According to Table 5, a substantial majority of students receive instant feedback during their language learning sessions, with many finding it helpful in

understanding their mistakes (Table 6). This immediate feedback mechanism is crucial as it allows learners to correct errors promptly and adjust their learning strategies in real-time. Compared to traditional feedback methods, which may be delayed or less detailed, AI-driven tools offer a distinct advantage in providing timely and targeted feedback that enhances learning effectiveness (Table 7). The positive changes in overall language acquisition progress reported by students (Table 8) further support the hypothesis that instant feedback from AI-driven tools positively influences language learning outcomes. These findings suggest that integrating AI-driven technologies into language education can foster a more dynamic and responsive learning environment, ultimately leading to improved proficiency levels among learners.

Thirdly, the study highlighted both advantages and disadvantages perceived by students regarding the use of AI-driven tools in English language learning. While students appreciated the personalized learning experiences and the engagement offered by these tools (Table 10), concerns such as the lack of human interaction and technical issues were also prevalent (Table 11). The high level of enjoyment reported by students when using AI-driven tools (Table 9) indicates that these technologies have the potential to make learning more interactive and enjoyable. However, challenges such as technical glitches and the over-reliance on technology underscore the need for balanced integration and support systems to maximize the benefits of AI-driven tools while addressing potential drawbacks (Table 11). Moreover, students' recommendations (Table 12) reflect varying attitudes towards AI-driven tools, with a majority endorsing their use but a notable minority expressing reservations based on personal preferences or experiences. This diversity of opinions highlights the importance of considering individual learning styles and preferences when implementing educational technologies.

In sum, the findings from this study provide compelling evidence that AI-driven tools hold significant promise in enhancing English language learning experiences. By promoting personalized learning, offering instant feedback, and engaging learners in interactive activities, these technologies have the potential to cater to diverse learner needs and accelerate language acquisition progress. However, the study also underscores the importance of addressing challenges such as technical issues and maintaining a balance between technology use and human interaction. Future research could further explore how AI-driven tools can be optimized to maximize their educational benefits while mitigating potential drawbacks, thereby advancing the effectiveness and inclusivity of language education in increasingly digital learning environments.

CONCLUSION AND RECOMMENDATIONS

This study has shed light on the significant impact of AI-driven tools in enhancing personalized English language learning experiences and accelerating language acquisition progress. The findings underscore the effectiveness of AI-driven technologies in tailoring learning content to individual proficiency levels, providing timely feedback, and engaging learners through interactive platforms. Despite the advantages identified, such as increased enjoyment and improved learning outcomes, the study also highlighted challenges including technical issues and the perceived lack of human interaction. Therefore, it is recommended that educators and developers continue to integrate AI-driven tools thoughtfully into language learning curricula, ensuring they complement rather than replace traditional teaching methods. Emphasizing robust technical support, training for educators, and maintaining a balanced approach between digital tools and human interaction will be crucial in optimizing the benefits of AI-driven technologies in language education. Furthermore, future research should focus on longitudinal studies to assess the long-term impact of AI-driven tools on language proficiency development and explore innovative ways to further enhance their effectiveness in diverse educational settings.

REFERENCES

1. Attali, Y., & Burstein, J. (2006). Automated essay scoring with e-rater® v.2. Journal of Technology, Learning, and Assessment, 4(3), 1–30.

2. Barr, D., & Feigenberg, L. (2017). Artificial intelligence in the classroom. Journal of Educational Technology Systems, 45(1), 27–45.

3. Bax, S. (2019). The Past, Present, and Future of CALL: An Overview of Selected Literature. Routledge.

4. Bialystok, E. (2001). Bilingualism in Development: Language, Literacy, and Cognition. Cambridge University Press.

5. Chapelle, C. A. (2001). Computer Applications in Second Language Acquisition: Foundations for Teaching, Testing, and Research. Cambridge University Press.

6. Chen, Y., Liu, Y., & Zhang, Y. (2020). Exploring the potential of AI in language learning: A meta-analysis of empirical studies. Educational Technology Research and Development, 68(4), 1795–1812.

7. Chen, Y., Liu, Y., & Zhang, Y. (2022). Exploring the effects of artificial intelligence-driven personalized learning on language learners' performance. Educational Technology Research and Development, 70(1), 213–230.

8. Chiu, T. K. F., & Ching, Y. H. (2018). The effectiveness of AI-driven feedback in language learning: A systematic review. Computer Assisted Language Learning, 31(5-6), 486–508.

9. Coniam, D., & Falvey, P. (2018). Comparing human and automated scoring of summary writing. Language Testing, 35(3), 309–332.

10. Council of Europe. (2001). Common European Framework of Reference for Languages: Learning, Teaching, Assessment. Cambridge University Press.

11. Dong, Y., Chiang, C., Truong, H., & Qiu, Y. (2021). Enhancing language learning through AI-driven inclusive design. Educational Technology & Society, 24(2), 191–204.

12. Dörnyei, Z., & Ushioda, E. (2011). Teaching and Researching Motivation. Pearson Education Limited.

13. Dusek, O., Gurevych, I., Riezler, S., & Arnold, T. (2020). What is the essence of a claim? Cross-domain claim identification. Natural Language Engineering, 26(2), 191–211.

14. European Commission. (2012). Multilingualism: An Asset for Europe and a Shared Commitment. European Commission.

15. Fleming, N. D., & Mills, C. (1992). Not another inventory, rather a catalyst for reflection. To Improve the Academy, 11(1), 137–155.

16. García-Peñalvo, F. J., Corell, A., Abella-García, V., Grande, M., & Morales, E. (2020). Artificial intelligence in the classroom: A scoping review of AI-driven language learning tools. Educational Technology & Society, 23(3), 161–175.

17. Gutiérrez-Colón, M., Pérez-Moreno, J. A., Moreno-Ger, P., & Martínez-Ortiz, I. (2020). Addressing language diversity in AI-driven language learning platforms: Challenges and opportunities. Computer Assisted Language Learning, 33(7), 813–833.

18. Hakulinen, L., Auvinen, T., & Bauters, M. (2019). Predicting language learning outcomes with neural networks: An exploratory study. Journal of Computer Assisted Learning, 35(5), 623–632.

19. Heift, T., & Schulze, M. (2007). Error Detection and Correction in CALL: A Comprehensive Guide. John Benjamins Publishing.

20. Higgins, J., Xiao, Z., & Nunan, D. (2012). The Cambridge Guide to Pedagogy and Practice in Second Language Teaching. Cambridge University Press.

21. Hochstein, A., & Green, J. (2018). Using AI to improve language learning. Memrise Blog. https://blog.memrise.com/using-ai-to-improve-language-learning/

22. Holstein, K., Gómez, P., & Lee, M. J. (2020). AI in education: Ethical considerations for equitable access and participation. British Journal of Educational Technology, 51(4), 1354–1369.

23. Huang, Y., Al-Rfou, R., Pottier, L., & Adams, K. (2015). Natural language processing with small feed-forward networks. Association for Computational Linguistics. https://www.aclweb.org/anthology/D15-1266.pdf

24. Jegede, O. O. & Adesina, O. (2022). Digitising English Language Teaching and Learning for e-Generation Students in Nigeria. B. A. Adeyemi, P. O. Yara & M. D. Oyetade (Eds.) (2022). Pastoral Psychology in Education for Sustainable Development: A Book of Readings in Honour of Professor Donald Abidemi Odeleye (pp. 204-212). Ibadan: College Press.

25. Jegede, O. O. (2021). Mobile-Assisted Language Learning and Online Cooperative Language Learning: Merits and Demerits. A. A. Robbin, O. B. Jolaoso & O. B. Bakare (Eds.) Management of Education for Sustainable Development in a Changing World: A Festschrift in Honour of Professor Afolakemi Olasumbo Oredein, pp. 55-58. Ibadan: College Press

26. Jones, A., Smith, B., & Johnson, C. (2018). The impact of AI-driven language learning tools on student motivation and engagement. Computers & Education, 125, 247–256.

27. Keegan, S. (2019). Busuu language app: Full review and tips for using. The Mimic Method. https://www.mimicmethod.com/busuu-language-app-review/

28. Kim, J., Park, S., & Lee, H. (2020). An experimental study on the effectiveness of AI-driven feedback in language learning. Language Learning & Technology, 24(1), 120–136.

29. Kong, S. C. (2018). Integration of learner interests and multimedia materials in language learning: A cross-cultural study of Hong Kong and Korean learners. Computer Assisted Language Learning, 31(3), 264–287.

30. Korell, T. (2020). How Babbel is using AI to personalize language learning. Medium. https://medium.com/babbel-engineering/how-babbel-is-using-ai-to-personalize-language-learning-7981b0d7c48f

31. Krashen, S. D. (1982). Principles and Practice in Second Language Acquisition. Pergamon Press.

32. Lee, J., & Lee, S. (2021). Exploring the role of adaptive learning systems in AI-mediated language education. Computer Assisted Language Learning, 34(5), 524–538.

33. Leong, D., Tse, S. K., & Chan, C. K. (2020). Enhancing accessibility of AI-driven language learning tools for learners with disabilities. International Journal of Artificial Intelligence in Education, 30(4), 506–525.

34. Levy, M., & Stockwell, G. (2006). CALL Dimensions: Options and Issues in Computer-Assisted Language Learning. Lawrence Erlbaum Associates.

35. Li, X., Wu, H., & Zhang, Q. (2023). Equity considerations in the use of AI-driven language learning tools. Journal of Educational Computing Research, 61(1), 34–48.

36. Mitchell, T. M. (1997). Machine Learning. McGraw-Hill.

37. Mory, E. H. (2017). Generating questions for formative assessment with the automatic item generation system in the online homework of college algebra. Educational Technology Research and Development, 65(5), 1141–1154.

38. Park, S., & Lee, H. (2021). Exploring AI-mediated language learning practices in diverse educational contexts. Language Teaching Research, 25(1), 29–47.

39. Poushter, J., & Masci, D. (2021). New apps and platforms are increasingly popular for learning language. Pew Research Center. https://www.pewresearch.org/fact-tank/2021/06/25/new-apps-and-platforms-are-increasingly-popular-for-learning-language/

40. Reid, J. M. (1995). Learning styles in the ESL/EFL classroom. TESOL Quarterly, 29(4), 739–760.

41. Richards, J. C., & Schmidt, R. (2013). Longman Dictionary of Language Teaching and Applied Linguistics. Routledge.

42. Rodríguez-Muñiz, L. J., & Padilla-Zea, N. (2021). Learner autonomy in AI-mediated language learning: Opportunities and challenges. Language Learning & Technology, 25(2), 169–186.

43. Russell, S., & Norvig, P. (2020). Artificial Intelligence: A Modern Approach. Pearson.

44. Sáiz-Manzanares, M. C., Ruiz-Mezcua, B., & Jiménez-Zarco, A. I. (2021). Bridging the digital divide in AI-driven language education: Strategies for reaching underserved learners. Technology, Knowledge and Learning, 26(2), 285–302.

45. Stockwell, G. (2012). Computer-Assisted Language Learning: Diversity in Research and Practice. Cambridge University Press.

46. Thorne, S. L., Fischer, I., & Lu, X. (2010). The Routledge Handbook of Language and Digital Communication. Routledge.

47. VanLehn, K. (2011). The Behavior of Tutoring Systems. Springer Science & Business Media.

48. von Ahn, L., & Lewis, D. (2011). Duolingo: Learning a language while translating the web. Association for Computing Machinery. https://www.cs.cmu.edu/~biglou/resources/

49. Wang, L., & Wen, H. (2019). The effectiveness of AI-driven language learning platforms: A meta-analysis. Educational Technology & Society, 22(4), 159–172.

50. Warschauer, M. (2004). Technology and Social Inclusion: Rethinking the Digital Divide. MIT Press.

51. Warschauer, M., & Healey, D. (1998). Computers and Language Learning: An Overview. Language Teaching Publications.

52. Yuan, F., Raza, A., & Shih, P. C. (2021). Multilingual AI-driven language learning platforms: Opportunities and challenges. Educational Technology & Society, 24(1), 256–271.