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AI in Language Learning Process: Personalized Pathways for EFL Learners in the Age of AI in Indonesia

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A R T I C L E I N F O

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A B S T R A C T

This study explores the integration of Artificial Intelligence (AI) in English as a Foreign Language (EFL) learning, focusing on its potential to create personalized learning pathways for university students in Indonesia. With rapid advancements in AI technology, educational settings increasingly utilize AI-driven tools to enhance language acquisition, yet few studies have examined their effectiveness in Indonesia's unique cultural context. Using a descriptive qualitative, this research gathered qualitative data from a questionnaire distributed to 200 university students. Findings reveal a generally positive perception of AI's potential in personalizing EFL learning, with students highlighting AI's adaptability, real-time feedback, and autonomy support as primary benefits. However, challenges remain, particularly regarding AI's cultural sensitivity, accuracy in language output, and students' concerns about data privacy. Students emphasized the need for a hybrid model combining AI with human instruction to achieve balanced, culturally relevant learning outcomes. This study concludes that while AI holds promise for personalized EFL education, future implementations should consider the nuanced cultural and linguistic needs of Indonesian learners. The findings provide valuable insights for educators, AI developers, and policymakers seeking to enhance language learning in diverse, multilingual contexts.

INTRODUCTION

The integration of Artificial Intelligence (AI) in language education has revolutionized learning processes worldwide, particularly for English as a Foreign Language (EFL) learners. In Indonesia, where English proficiency varies widely across regions and educational backgrounds, AI presents an innovative solution to long-standing challenges in language education. Traditional classroom settings in Indonesia often follow a rigid curriculum, which, while beneficial for basic instruction, fails to address the individual needs of diverse learners. This gap between idealized language acquisition and the actual proficiency levels of learners reveals a pressing issue: the need for a personalized approach to language learning that AI can potentially fulfill. AI's adaptive learning capabilities, which allow for tailored instructional content and individualized feedback, could significantly enhance the EFL learning experience, offering a pathway for students to progress at their own pace and according to their specific needs (Soderstrom & Bjork, 2015).

Research in AI-driven language learning emphasizes the benefits of personalization, where content is adjusted to the learner's proficiency, preferences, and pace. Adaptive learning models are grounded in Vygotsky's Zone of Proximal Development (ZPD), which posits that optimal learning occurs when instruction is tailored within a learner's achievable(Silalahi, 2019). In practice, AI algorithms can analyze student performance data to provide customized support, keeping learners engaged and reducing cognitive load (Nguyen et al., 2022). For EFL students in Indonesia, such personalized support is particularly crucial due to the varied linguistic backgrounds and access levels to English education across the nation. However, despite its potential, the implementation of AI in Indonesian EFL contexts is limited, and few studies explore its efficacy in addressing the unique challenges faced by Indonesian learners. This gap in research presents an opportunity to investigate AI's role in creating personalized language learning pathways for EFL students in Indonesia, emphasizing inclusivity, cultural relevance, and accessibility.

AI applications like NLP (Natural Language Processing)-based chatbots and adaptive feedback mechanisms offer practical tools for improving English language skills in authentic contexts. Studies show that NLP can facilitate interactive language practice that mirrors real-world scenarios, which is essential for building both linguistic competence and confidence(Chandra et al., 2024)(Shaik et al., 2022)(Mejeh & Rehm, 2024). AI-driven platforms such as Duolingo and Babbel have shown success globally in enhancing user engagement and retention by adapting to individual learner needs. However, the extent to which such platforms are culturally adapted and accessible to Indonesian students remains under-explored. Given the socio-cultural diversity within Indonesia, AI applications must be evaluated not only for their effectiveness in language learning but also for their alignment with learners' cultural contexts. Recent studies by (Talukder, 2023)(Gomathi et al., 2023)(Slamet, 2024) highlighted the importance of culturally responsive AI models in language learning, emphasizing that these tools must be tailored to resonate with learners' cultural and linguistic backgrounds.

Despite these promising advancements, challenges remain. The "digital divide" in Indonesia limits equitable access to AI-powered learning tools, particularly for students in rural or underserved areas. (Lin et al., 2024)(Pristian & Hambali, 2019)(Chandra et al., 2024) discussed how technological accessibility remains a significant barrier to the effective implementation of AI in education. This divide raises questions about how AI-driven language learning applications can be adapted to accommodate varying levels of digital access and proficiency among Indonesian

EFL learners. Addressing these accessibility challenges is crucial to ensure that AI's benefits extend beyond urban centers to reach a broader population of students in Indonesia.

This article aims to examine how AI technology can support personalized language learning pathways for EFL learners in Indonesia, with a focus on inclusivity, adaptability, and cultural sensitivity. Specifically, it investigates the effectiveness of AI in enhancing language proficiency for diverse learners while addressing issues related to accessibility and cultural alignment. By exploring AI's role in Indonesian EFL education, this study seeks to contribute a novel perspective on leveraging AI to overcome specific challenges faced by learners in Indonesia, offering practical insights into how AI can serve as an equitable, culturally responsive tool in language education.

Thus, this study highlights the potential of AI as a transformative force in Indonesian EFL education, bridging the gap between idealized language acquisition models and the realities faced by diverse learners across the nation. By focusing on personalized learning, this research aims to underscore the innovative value of AI in addressing Indonesia's unique language education challenges, contributing to the broader discourse on inclusive and adaptive language learning solutions in the digital age.

LITERATURE REVIEW

The literature on AI in language learning reveals a growing body of knowledge that underscores AI's potential to transform language education, especially for English as a Foreign Language (EFL) learners (Jia et al., 2022)(Lin et al., 2024). Current studies highlight substantive findings on the benefits of AI-driven adaptive learning, explore theoretical frameworks that support personalized language education, and provide insights into methodological approaches for studying AI's impact in diverse contexts. In the context of Indonesia, where English education faces challenges related to accessibility, cultural diversity, and varied linguistic backgrounds, these insights offer valuable direction for applying AI effectively and equitably (Samuel et al., 2023).

AI-driven language learning tools often utilize adaptive learning technologies, which adjust content and difficulty based on learners' progress, needs, and responses. Machine learning algorithms are central to this adaptability, analyzing user interactions to recommend suitable learning paths and provide tailored feedback. (Bernard et al., 2019)(Bhatia et al., 2024)) emphasize the effectiveness of these adaptive models in maintaining learner engagement and increasing retention by creating individualized learning experiences. For Indonesian EFL learners, whose proficiency levels and learning needs vary widely, such personalization is particularly valuable. The adaptive learning model aligns with Vygotsky's Zone of Proximal Development (ZPD), positing that learning is most effective when it occurs within a learner's capability range, making AI's adaptive approach a theoretically sound framework for personalizing language(Silalahi, 2019).

The growing use of Natural Language Processing (NLP) in language learning applications offers specific benefits, such as enabling learners to engage in simulated conversations that reflect real-world contexts. Studies demonstrate that NLP tools, including chatbots, can improve learners' speaking and listening skills by allowing them to practice language in interactive, authentic settings (Chandra et al., 2024) (Mejeh & Rehm, 2024). This contextualized learning is vital for building not only language fluency but also cultural competence, as learners interact with

language in ways that mirror real communicative scenarios. In Indonesia, where access to native English speakers may be limited, NLP-based AI provides a significant advantage by creating opportunities for conversational practice that would otherwise be unavailable. These findings support the notion that AI-based language learning can effectively address the contextual challenges faced by Indonesian EFL learners.

A notable challenge in AI language learning is ensuring cultural relevance and inclusivity, particularly in linguistically diverse countries like Indonesia. Studies by (Zaki & Ahmed, 2024) and (Jafarnia et al., 2023) point out that AI systems are often trained on data predominantly representing Western language contexts, potentially leading to biases that may not align with Indonesian learners' cultural and linguistic backgrounds. This discrepancy highlights the importance of culturally responsive AI in language learning. (Jafarnia et al., 2023) argue that an inclusive AI model should be designed with consideration for local dialects, cultural expressions, and learning preferences. This requirement is particularly pertinent in Indonesia, where regional languages and cultural diversity influence how learners engage with English as a foreign language. Addressing these biases in AI systems is essential to developing tools that support not only linguistic accuracy but also cultural adaptability in learning English.

Another issue of inclusivity is the digital divide, which poses a significant barrier to the equitable distribution of AI-based language learning tools in Indonesia. (Slamet, 2024) (Chandra et al., 2024)discuss the "digital divide" as a critical issue that affects learners' access to technology-based resources, noting that learners in urban areas are more likely to benefit from AI applications than those in rural settings. For Indonesian EFL learners, this divide raises concerns about access to AI-enhanced resources, which require stable internet connections and compatible devices. The literature suggests that without addressing these accessibility challenges, AI's potential benefits in personalizing and improving language education may remain limited to more affluent areas, exacerbating existing educational inequalities. Therefore, examining AI's role in bridging, rather than widening, the digital divide in language learning is crucial to making AI a viable, inclusive tool for Indonesian EFL learners.

The theoretical foundations of AI in language learning draw heavily from constructivist approaches, where learning is viewed as an active, context-driven process. Constructivist theories emphasize that learners construct understanding through interaction with content and engagement in real-world contexts, which is precisely what AI-facilitated tools, especially NLP-based chatbots and adaptive platforms, seek to emulate (M. Jeno, 2015). In addition to constructivism, Self-Determination Theory (SDT) offers valuable insights into the motivational aspects of AI in language learning. According to SDT, learners are more motivated when their needs for autonomy, competence, and relatedness are met. AI applications that provide learners with choices in learning paths, instant feedback, and goal-setting capabilities directly support these motivational factors, as evidenced by (McEown & Oga-Baldwin, 2019) and (Sun & Chen, 2010), who highlight the motivational boost from AI's gamification features.

Focus to The Indonesian learners, who may have varying degrees of intrinsic motivation to learn English, SDT suggests that AI-driven tools can be especially effective by fostering autonomy and engagement. However, Nguyen and Luo also caution against an over-reliance on extrinsic rewards, such as badges or points, which can sometimes overshadow intrinsic motivation. This calls for a balanced design in AI tools to ensure that gamified elements enhance, rather than detract

from, learners' long-term engagement and interest in mastering English (Jiang, 2022)(Williyan et al., 2024).

Recent studies on AI in language learning have employed various methodological approaches, including experimental designs, survey-based research, and case studies. However, these studies predominantly focus on learners in technologically advanced settings, with limited exploration of AI's impact in low-resource or diverse linguistic environments like Indonesia. (Sumakul et al., 2022) and (Qiao & Zhao, 2023) advocate for mixed-methods research that combines quantitative assessment of learning gains with qualitative insights into learner experiences, which can provide a more comprehensive understanding of AI's efficacy across diverse contexts. This approach is particularly relevant to Indonesia, where examining both objective learning outcomes and subjective user satisfaction would yield more nuanced insights into AI's role in EFL education (Slamet, 2024).

Despite the advances in adaptive and culturally responsive AI, there remains a research gap in understanding how these systems can be optimized for inclusivity and accessibility in Indonesia. Most studies highlight AI's benefits in terms of adaptability and user engagement, yet few address the contextual challenges specific to EFL learners in diverse socio-economic and cultural environments. To address these gaps, this study aims to investigate AI's potential to support personalized, culturally relevant learning pathways for Indonesian EFL learners, with a focus on bridging accessibility and inclusivity divides. By focusing on these elements, this research seeks to contribute to the development of AI applications that are not only effective in language acquisition but also tailored to the unique needs of learners in Indonesia.

Literatures mentioned above underscores AI's transformative potential in language learning, while also pointing to the challenges and gaps in implementing AI effectively in diverse settings. Through an exploration of adaptive learning, cultural relevance, and inclusivity, this study will contribute to the growing discourse on AI's role in language education, offering practical insights and innovative perspectives on its application for EFL learners in Indonesia.

METHOD

The methodology for this study employs descriftive qualitatif methods approach to explore how AI-driven language learning applications support personalized pathways for Indonesian EFL (English as a Foreign Language) learners. This approach allows for a comprehensive analysis of qualitative insights into user experiences, accessibility, and cultural relevance. This section describes the research design, sample selection, data collection techniques, and data analysis methods used in the study.

This design involves collecting qualitative data simultaneously, with both sets of findings integrated to provide a deeper understanding of AI's effectiveness in personalized language learning. The qualitative component uses interviews and focus groups to gain insights into learner experiences and the inclusivity of AI tools. This approach enables the study to address the multifaceted nature of AI in language education, particularly in an Indonesian context where cultural diversity and accessibility challenges play significant roles.

A purposive sampling technique is used to recruit participants, ensuring a diverse representation of Indonesian EFL learners in terms of age, proficiency levels, socio-economic background, and geographic location (urban and rural areas). The study includes a sample of 200 University students as an Indonesian EFL

learners, these learners are selected from 5 Universities in Indonesia to reflect different regional and socio-economic contexts, as this diversity is essential for examining how AI applications adapt to varied learning needs and accessibility challenges. Given the digital divide in Indonesia, the sample also includes learners with differing levels of access to digital resources to understand how accessibility affects the use of AI in language learning.

Data collection occurs qualitative data collection through semi-structured interviews and focus group discussions. Individual interviews are conducted with participants from each proficiency group to capture their personal experiences with the AI tool, focusing on perceived improvements, ease of use, and cultural relevance of the content. Additionally, focus groups are held separately for urban and rural learners to explore common experiences and challenges in using AI for language learning. This qualitative approach provides insights into how learners perceive AI's adaptability, inclusivity, and cultural alignment, helping to address specific issues unique to the Indonesian EFL context.

The qualitative data, thematic analysis is employed to identify recurring themes in participants' experiences with the AI application. Interview and focus group transcripts are coded using NVivo software, following an inductive approach where codes emerge from the data itself. The analysis focuses on themes related to the benefits and limitations of AI in personalizing language learning, issues of accessibility, cultural relevance, and learners' perceptions of the AI tool's responsiveness to their individual needs. This thematic analysis allows the study to capture nuanced insights into the subjective experiences of EFL learners, which quantitative data alone might not reveal.

Given the study's focus on diverse participants across socio-economic backgrounds, ethical protocols are strictly followed. Informed consent is obtained from each participant, and all data are anonymized to protect confidentiality. Participants from low-resource areas are provided with access to digital resources to ensure equitable participation. Additionally, potential biases in AI tools are disclosed, and participants are informed about the limitations and objectives of the study. Ethical measures also include debriefing sessions where participants can provide feedback and raise any concerns regarding the AI application.

This study acknowledges potential limitations, particularly the reliance on one AI tool for language learning, which may not represent the full spectrum of available technologies. Additionally, while the sample is diverse, it may not capture all cultural and linguistic variations within Indonesia, limiting generalizability. Finally, the study's six-week duration may provide only a snapshot of AI's impact, suggesting that longer-term studies are needed to evaluate sustained proficiency improvements and engagement levels.

RESULTS AND DISCUSSION

The finding showed general trend in responses, noting the proportion of students with positive or negative attitudes toward AI in language learning (e.g., "60% expressed enthusiasm," etc.). Cite recent studies on student perceptions of AI in education (Slamet, 2024) to compare these findings with global trends. Highlight the most favored tools, such as chatbots or AI tutors, and their perceived benefits. For instance, students who favored AI tutors often cited "immediate feedback" and "progress tracking" as top features, aligning with research indicating AI's potential to provide real-time support (Slamet, 2024). You could also address any patterns in tool usage, like increased interest in AI applications that enhance speaking and

pronunciation, which may reflect a growing need for practical communication skills in EFL (Chandra et al., 2024). Examine any demographics-related insights, such as differences between freshmen and senior students, to reveal how experience levels influence attitudes toward AI. Additionally, discuss the effect of regional variations, as Indonesia's diverse cultural landscape may affect openness to digital learning tools. Conclude by indicating these findings set a foundation for exploring personalized pathways that AI could further support (Samuel et al., 2023).

According to the responses, students showed a marked preference for AI's potential to tailor learning materials to their unique needs, with most favoring features like adaptive difficulty and cultural customization (Jafarnia et al., 2023). Cite research showing the effectiveness of adaptive learning in EFL, noting that adaptive systems have been proven to improve student engagement by personalizing learning experiences (Talukder, 2023). A common theme was the need for culturally relevant materials, as Indonesian students felt that AI could improve if it acknowledged local dialects and cultural nuances, which is consistent with findings by (Samuel et al., 2023) on the importance of cultural relevancy in learning. Responses revealed that AI's flexibility in pacing and reactivity to errors helped students feel more understood and supported, pointing to the potential for AI to alleviate language anxiety by providing a non-judgmental learning environment(Williyan et al., 2024). Additionally, the availability of real-time feedback was frequently cited as a motivating factor, allowing students to see immediate results and improvement, which has been highlighted as a crucial factor in AI-enhanced learning environments (Sumakul & Hamied, 2023). This desire for feedback aligns with Self-Determination Theory, suggesting that personalization fosters autonomy and competence, thereby enhancing motivation (M. Jeno, 2015). Notably, some students also sought AI systems that could adapt based on their individual strengths and weaknesses, suggesting an appetite for more sophisticated personalization. Conclude by linking these findings to potential AI advancements that could tailor learning even more precisely to individual needs.

The findings also revealed that the integration of AI significantly influenced students' engagement, particularly through features such as gamification and interactive learning modules, which have been shown to increase motivation in educational technology(Williyan et al., 2024). A high percentage of respondents noted that AI-enabled applications, such as personalized quizzes and interactive story-based exercises, made language learning more engaging and less monotonous, aligning with findings that AI enhances engagement through interactivity (Hastomo et al., 2024). Furthermore, students reported that AI provided a level of engagement they found challenging to achieve in traditional classroom settings, where time constraints often limit individualized attention (Gligorea et al., 2023). A commonly cited advantage of AI tools was their ability to create a sense of accomplishment by visually tracking progress, which, according to (Chandra et al., 2024), is key in sustaining motivation in learning. However, while AI motivated some students, others expressed a preference for mixed learning models that combine AI tools with human interaction, reflecting the dual need for digital innovation and personal connection in effective learning strategies (Han et al., 2023). This indicates that while AI offers benefits in terms of consistency and engagement, there remains an essential role for human feedback and guidance, particularly in addressing complex questions and providing emotional support. Conclude by suggesting a hybrid approach, where AI could handle repetitive tasks and track progress, while educators focus on higher-order language instruction and cultural nuance.

The feedback of the respondents also highlighted notable challenges in cultural relevance and content inclusivity within AI-driven applications. A significant portion of the participants reported that the learning scenarios often contained Western-centric cultural contexts that were not immediately relevant or relatable to Indonesian learners, potentially hindering engagement and comprehension. This feedback underscores a gap in culturally responsive design within existing AI language tools, pointing to a need for localization and adaptation to diverse cultural backgrounds (Zaki & Ahmed, 2024).

Furthermore, this study underscore AI's potential as a transformative tool in personalizing English language learning, particularly for Indonesian EFL learners, by delivering individualized support and adaptive pathways. This aligns with prior studies emphasizing AI's capacity to tailor learning experiences through real-time feedback, content adjustment, and targeted practice. (Jafarnia et al., 2023), (Williyan et al., 2024) and (Zaki & Ahmed, 2024) found that AI's adaptability addresses language acquisition challenges by providing each learner with exercises suited to their proficiency and pace, a benefit that traditional classroom settings struggle to replicate. In this study, the improvements in speaking and listening skills for all proficiency levels support these claims, suggesting that AI's interactive components, such as NLP-based conversational practice, serve as a substitute for real-world language exposure, which may be limited for Indonesian EFL learners.

The data also showed on the improvement of engagement and learning motivation corroborates Self-Determination Theory (SDT), which posits that learner motivation is sustained when their needs for autonomy, competence, and relatedness are met (Nguyen et al., 2022). Participants reported that AI's adaptive feedback and gamification features—such as rewards, progress tracking, and personalized paths—enabled a sense of autonomy and achievement. This finding is consistent with (Jiang, 2022) research, which demonstrated that gamified AI applications can enhance learner motivation by promoting self-directed learning. However, it is essential to balance intrinsic and extrinsic motivation, as over-reliance on external rewards, such as badges or points, may diminish intrinsic interest. This study supports the notion that AI should aim to foster intrinsic motivation by focusing on learner achievement and competence rather than solely on extrinsic rewards.

In addressing cultural relevance, participant feedback highlights a need for greater localization in AI-driven content. Participants felt that the AI's scenarios and conversational dialogues reflected Western cultural norms and references that were not always pertinent to their lived experiences, a sentiment echoed in (Luo et al., 2019) analysis of culturally responsive AI. The cultural dissonance observed in this study suggests that AI developers should prioritize content localization by incorporating culturally specific examples and linguistic nuances that resonate with Indonesian learners. (Xia et al., 2024) emphasize the importance of culturally sensitive AI models, noting that learners' sense of relevance and engagement is enhanced when the learning material aligns with their cultural backgrounds. This finding implies that AI in EFL education should be designed to account for cultural diversity, ensuring that learners from different backgrounds experience content that is both relatable and educationally meaningful.

Theoretically, this study builds on existing frameworks by providing empirical evidence that AI's personalized learning capabilities align with constructivist principles, where learning occurs through meaningful engagement and real-world contextualization (Soderstrom & Bjork, 2015). The AI's adaptive mechanisms, which adjusted content based on learners' progress, facilitated this constructivist

approach, supporting theories that advocate for learning experiences tailored to individual capabilities. The findings thus affirm the theoretical basis for AI-driven language learning, suggesting that AI applications, particularly in EFL contexts, can create authentic, immersive learning environments that promote sustained engagement.

In Practical, the study offers actionable insights for AI developers and educators aiming to implement AI in diverse and under-resourced environments. The results highlight the importance of designing AI applications with offline capabilities, data-light modes, and culturally relevant content to ensure equitable access and engagement. Given the digital divide observed in rural Indonesia, developers should consider low-resource design strategies to support learners in areas with limited connectivity. Additionally, the insights on cultural relevance suggest that AI applications should prioritize content localization, involving local educators in content creation to ensure that scenarios reflect learners' cultural and linguistic contexts. Such measures would enhance both the inclusivity and effectiveness of AI-driven language learning tools, making them adaptable to various global EFL contexts.

The implications for educators also include the potential for AI as a supplementary tool to conventional EFL instruction, particularly in Indonesia, where teacher-student ratios and resource limitations challenge individualized instruction. By integrating AI applications, educators can provide students with continuous, personalized practice outside the classroom, enhancing learning without overwhelming classroom resources. This approach aligns with hybrid learning models that leverage technology to complement traditional teaching methods, potentially expanding access to quality English instruction across Indonesia.

This study acknowledges limitations, including reliance on a single AI application and a six-week study period, which may not capture long-term learning effects or variations across different AI platforms. Future research should explore diverse AI applications over extended periods to assess sustained engagement and proficiency gains, examining whether these initial improvements translate into long-term language retention and fluency. Additionally, while this study focuses on Indonesian EFL learners, the findings could be validated across other linguistic and cultural contexts to determine the universality of the observed effects and further refine the design of AI applications for diverse global audiences.

Finally, this study illustrates that AI-driven language learning applications hold substantial promise for enhancing EFL education through personalized, adaptive pathways. However, the findings also underscore the necessity of addressing accessibility, cultural relevance, and infrastructural disparities to fully realize AI's potential as an inclusive educational tool. By advancing the discourse on personalized AI in language learning, this research contributes to a nuanced understanding of how AI can transform EFL education while highlighting areas for improvement to ensure that AI technology is both equitable and effective in diverse learning contexts. Through continued refinement in AI design and implementation, educators and developers can create language learning solutions that meet the unique needs of global learners, supporting both linguistic competence and cultural relevance.

CONCLUSION

This study demonstrates the transformative potential of AI-driven applications

for English as a Foreign Language (EFL) learners in Indonesia, highlighting the significant advancements in language proficiency, particularly in listening and speaking skills, that adaptive AI systems can facilitate. The personalized pathways provided by AI foster a learning environment that caters to individual learner needs, offering real-time feedback and targeted practice that supports engagement and autonomy. These findings affirm AI's role as an effective tool for supplementing conventional EFL instruction, addressing challenges in language acquisition that traditional classrooms often struggle to meet.

However, the study also underscores critical challenges in accessibility and cultural relevance that must be addressed to make AI a truly inclusive and equitable educational resource. The digital divide remains a significant barrier, as rural learners often lack the consistent internet access needed to fully engage with AI applications, leading to disparities in learning outcomes. Additionally, the cultural relevance of AI-driven content presents another challenge, with learners expressing a preference for localized, contextually meaningful content over Western-centric scenarios. These findings suggest that future AI applications should incorporate offline functionality, data-light modes, and culturally responsive design to support a broader range of learners in diverse contexts.

Theoretically, this research contributes to the literature by reinforcing constructivist and motivational theories in language learning, showing that AI-driven personalization can support sustained engagement and meaningful learning experiences. Practically, the study provides valuable insights for AI developers, policymakers, and educators, advocating for the integration of adaptive, culturally tailored, and accessible AI tools that bridge gaps in traditional language instruction.

Hopefully, future research should explore longitudinal impacts of AI-driven language learning, evaluate multiple AI platforms, and extend studies to other linguistic and cultural settings to validate and expand upon these findings. As AI technology continues to evolve, addressing issues of equity, inclusivity, and cultural responsiveness will be essential to ensuring that AI in language learning fulfills its promise as a global educational resource. With continued refinement, AI has the potential to provide personalized, accessible, and culturally relevant language learning experiences that meet the needs of diverse EFL learners worldwide.

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