

THE INTEGRATION OF GENERATIVE AI AND MOBILE-ASSISTED LANGUAGE LEARNING IN ENGLISH EDUCATION: STUDENTS' PERSPECTIVES

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Abstract

This study aims to examine the impact of Generative Artificial Intelligence (GenAI) and Mobile-Assisted Language Learning (MALL) on improving English language proficiency skills students. A qualitative approach was employed, utilizing a structured questionnaire distributed to 28 respondents. Data were analyzed descriptively to explore students' perceptions and the extent of AI integration in language learning. The findings reveal that 85.7% of participants agreed or strongly agreed that AI facilitates English language learning, enhances motivation, and accelerates the learning process. ChatGPT emerged as the most frequently used AI tool (42.9%), followed by Gemini and Cici. These results indicate that the integration of AI and MALL holds significant potential for supporting language acquisition and critical thinking development. The study provides practical implications for designing technology-enhanced learning models in higher education.

Keywords – generative ai, mobile-assisted language learning, english language learning

Introduction

In the contemporary digital era, the advancement of artificial intelligence (AI) technology offers the potential to address existing limitations (Baharuddin et al., 2025). Nevertheless, the systematic application of advanced technologies, such as Generative AI and Adaptive Learning Analytics, in fostering critical thinking remains limited, particularly within the realms of language education at both secondary and higher education levels (Razilu, 2025). Numerous prior studies have examined the capacity of technology to enhance students' cognitive skills, including the implementation of Learning Management Systems (LMS), AI-based chatbots, and automated feedback mechanisms in language acquisition. Research conducted by Sofa et al. (2025) indicates that adaptive learning can significantly enhance student engagement, while the investigation by Julianto & Ratumanan (2023) demonstrates that Generative AI can stimulate creativity in writing. Conversely, a learning analytics-based methodology has been employed to monitor learner progress and tailor educational content accordingly (Manu et

al., 2023). However, these investigations typically analyze the impact of each technology in isolation, lacking an integrative framework that explicitly prioritizes the cultivation of critical thinking as a primary educational objective (Nu'man & Retnawati, 2022).

The proliferation of generative artificial intelligence (AI) has marked a transformative epoch in multiple domains, from creative industries and scientific research to education and language learning. Generative AI, characterized by its capacity to produce novel text, images, audio, and even code, is increasingly embedded in digital infrastructures, reshaping the modalities through which individuals access, process, and disseminate knowledge. Language learning, in particular, is experiencing profound changes, both in autonomous and instructed contexts, as large language models (LLMs) such as ChatGPT, multilingual virtual agents, and multimodal AI systems become ubiquitous tools for learners and educators alike (Godwin-Jones, 2024). The integration of generative AI

into educational settings, especially language learning, has already produced significant changes in practice and policy (Godwin-Jones, 2024). Learners now have access to AI-powered chatbots, virtual tutors, automated assessment tools, and content creation platforms that can generate practice materials, provide corrective feedback, and simulate immersive conversational environments. Teachers, in turn, leverage AI to create lesson plans, design personalized learning trajectories, and assess student work with unprecedented speed and flexibility (Godwin-Jones, 2024). Moreover, AI is poised to enhance the utility of immersive technologies such as virtual and augmented reality, moving beyond scripted interactions to enable dynamic, adaptive, and context-sensitive language practice (Godwin-Jones, 2024).

This study seeks to evaluate the efficacy of generative artificial intelligence (GenAi) utilized by students in the context of English language acquisition. The research will address the following inquiries:

1. What impact does the use of GenAi have on English language learning?
2. How do students perceive the application of GenAi in the process of learning English?

Generative Artificial Intelligence (GenAI) in Education

Generative Artificial Intelligence (Generative AI) constitutes a specialized domain within artificial intelligence, characterized by its capacity to create novel content derived from extensive datasets (Rizal, 2024). Pioneers such as Ian Goodfellow, the architect of Generative Adversarial Networks, have significantly advanced this field (Goodfellow et al., 2014). Within the educational context, Generative AI is conceptualized as a machine learning algorithm-based system adept at producing text, images, or solutions in response to user input (Wicaksana &

Putra, 2023). Zahrani and Haqu (2024), through their work on the development of the Generative Pre-trained Transformer (GPT) model, demonstrated that this model possesses the capability to comprehend and generate natural language with a complexity comparable to that of human communication. In the realm of language acquisition, generative AI is employed in various applications, including writing assistants, interactive chatbots, and automated feedback systems (Rohmawaty et al., 2024). The effectiveness of these systems is evaluated based on parameters such as response accuracy, content relevance, answer personalization, and the quality of interactions rooted in natural language (Mertayasa et al., 2025).

The principal dimensions of Generative Artificial Intelligence in educational contexts encompass: (1) Content Generation, defined as the system's capacity to produce text or educational materials (Baskara et al., 2024); (2) Feedback Mechanism, which refers to the system's ability to deliver automated feedback on the responses or text input by learners (Prakoso, 2024); (3) Contextual Understanding, characterized by the system's aptitude for comprehending the context of a user's inquiry or reply (Hadid et al., 2024); and (4) Personalization, denoting the degree to which the system can customize its output according to individual profiles or requirements (Sucianingtyas et al., 2025). These four dimensions are critically significant in fostering the development of critical thinking skills, as learners not only receive information but are also prompted to assess, respond to, or construct arguments based on the outcomes of their interactions with the system.

Research conducted by Mubarakah (2024) indicates that the integration of Generative AI in English language learning significantly enhances students' writing skills, particularly with respect to coherence, argumentative structure, and

the elaboration of ideas. In a similar vein, a study by Aulia and Mandailina (2024) demonstrates that learners utilizing generative AI-based applications exhibit improvements in their analytical and reflective competencies when engaging with texts. Nevertheless, a notable gap exists in the literature, as most studies have not explicitly investigated the impact of generative AI on structured critical thinking skills. Therefore, this study seeks to address this gap by implementing a hybrid learning model that positions Generative AI as a facilitator for the creation and exploration of reflective ideas within the context of language learning.

In the context of this study, Generative AI will serve as a pedagogical tool in English language learning activities at the higher education level (Siregar et al., 2025). The implementation scenario involves assigning tasks related to essay writing or text analysis, facilitated by an AI system that offers automatic feedback and reflective prompts (Wang, 2015). The interaction between learners and the AI system will be analyzed to examine how this technological stimulus influences critical thinking processes, specifically in terms of depth of thought (Febriyanto et al., 2022), argumentation structure, and reflection. This study focuses on EFL (English as a Foreign Language) learners who require high-level cognitive stimuli in the process of acquiring a second language (Rima et al., 2024).

Mobile Assisted in Language Learning

Mobile Assisted Language Learning (MALL) represents a significant technological advancement in the realm of English language acquisition. The proliferation of mobile devices, including smartphones and tablets, has generated novel opportunities for educational enhancement, particularly in the domain of foreign language instruction. MALL provides a level of flexibility and accessibility that enables learners to

engage with educational materials at their convenience, regardless of time and location (Kukulska-Hulme, 2012). Research conducted by Viberg and Grönlund (2013) indicates that the implementation of MALL can enhance student motivation and engagement in language learning, as mobile devices are frequently integral to their daily routines. From a pedagogical perspective, Mobile-Assisted Language Learning (MALL) significantly contributes to the advancement of innovative teaching methodologies. For instance, project-based learning can be effectively integrated with mobile technology to offer a more comprehensive and meaningful learning experience (Kearney et al., 2012). In this context, mobile technology serves as a tool for data collection, recording conversations, and producing digital presentations that facilitate language learning projects. Consequently, the implementation of MALL not only aids in the acquisition of language skills but also fosters the development of digital and collaborative competencies that are essential in the context of globalization.

Methodology

This study employed a qualitative research design to explore students' attitudes and perceptions regarding the use of Artificial Intelligence (AI) in English language learning. Data were collected through a structured questionnaire consisting of 12 items, adapted from previous studies, and distributed via Google Forms. The questionnaire utilized a five-point Likert scale ranging from "Strongly Agree" to "Strongly Disagree." The sample comprised 20 students enrolled in secondary-level education, specifically from a Madrasah Aliyah School, who were learning English as a foreign language. Participants were selected based on their limited prior exposure to technology-assisted language learning.

Prior to participation, informed consent was obtained, and anonymity was ensured throughout the data collection process. Data analysis involved descriptive statistics to summarize participants' responses and identify trends in AI usage and perceptions. Visual representations, including charts and percentage distributions, were generated to illustrate the frequency of mobile-assisted learning and the adoption of AI tools such as ChatGPT, Gemini, and Grammarly. Qualitative responses were analyzed thematically to capture students' experiences and reflections on AI's role in enhancing critical thinking and language proficiency

Finding and Discussion

This section provides a visual representation of the data extracted from the questionnaire using google form. Quantitative and qualitative data will be analyzed in this section. This is demonstrated in figure 1 using handphone to help English in language learning

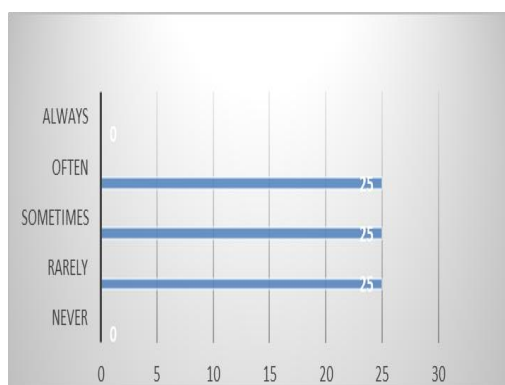


Figure 1. Using Handphone to Help Students' English Skill

When asked about how often they use mobile phones to assist English learning, responses were quite diverse, it shows that students response Always: 5 participants, Often: 7 participants, Sometimes: 7 participants, Rarely: 7 participants, and Never: 2 participants. This indicates that most students integrate mobile technology into their learning at

least occasionally. Chart shows how frequently students use mobile phones (handphones) to assist in learning English. It includes five categories with corresponding percentages. Always 17.9%, Often: 25%, Sometimes: 25%, Rarely: 25%, Never: 7.1%. "Often," "Sometimes," and "Rarely" each account for 25%, indicating that most students use mobile phones occasionally or moderately for English learning. Only 17.9% of students report using mobile phones always, suggesting that constant reliance on mobile devices is less common. 7.1% of respondents never use mobile phones for English learning, showing that almost all students incorporate mobile technology to some extent.

Mobile phones are widely used as a learning aid, but not predominantly on an "always" basis. The equal distribution among "often," "sometimes," and "rarely" suggests variability in habits—likely influenced by personal preference, access to resources, or teaching strategies. Very few students completely avoid using mobile phones, indicating strong integration of technology in language learning. The implication study fact that encourage structured use of mobile phones for English learning, as most students already use them occasionally. Provide guidelines and apps that maximize learning benefits, especially for those who use them rarely or sometimes. Investigate why some students use mobile phones less frequently—possible reasons include lack of internet access, device limitations, or preference for traditional methods.

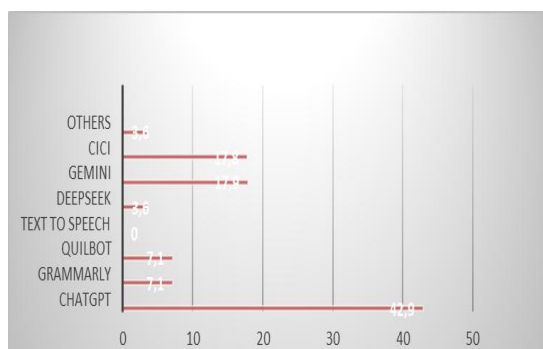


Figure 2. AI Tools used by Students

Figure 2 illustrates that the distribution of AI tools used by respondents in a survey. Each bar represents the percentage of participants who reported using a specific tool. ChatGPT: 42.9% (Highest usage), Gemini: 17.9%, Cici: 17.8%, Grammarly: 7.1%, Quilbot: 7.1%, Deepseek: 3.6%, Others: 3.6%, text to 0% (No respondents reported using this tool).

It shows that ChatGPT is by far the most popular AI tool, used by nearly half of the respondents (42.9%). This suggests strong preference and reliance on ChatGPT for language learning. Gemini and Cici have similar adoption rates (around 18% each), indicating they are second most popular. Grammarly and Quilbot are used by only 7.1% each, showing limited popularity compared to ChatGPT. Deepseek and Others have minimal usage (3.6%), and Text To has no users. The data reflects a clear dominance of ChatGPT in AI-assisted learning, likely due to its versatility and accessibility. Gemini and Cici are emerging alternatives but still far behind ChatGPT. Tools like Grammarly and Quilbot, traditionally known for writing assistance, are less favored for broader language learning tasks. Minimal usage of niche tools suggests that learners prefer well-known, multifunctional platforms. The implication of this study is to focus training and resources on ChatGPT, as it is the most widely adopted. Introduce learners to other tools like Gemini and Grammarly for specialized tasks (e.g., grammar checking, adaptive learning). Investigate why some tools

have very low adoption—lack of awareness, accessibility issues, or limited features.

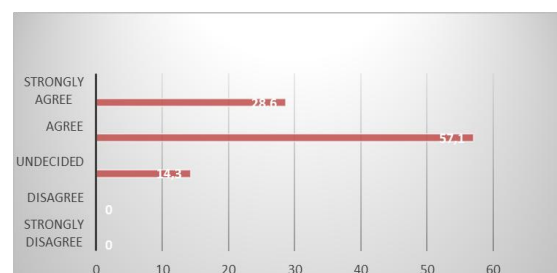


Figure 3. Using AI in Language Learning

Figure 3 illustrates respondents' opinions on using AI in language learning. It shows five categories of responses with corresponding percentages. Strongly Agree: 28.6%, Agree: 57.1%, Undecided: 14.3%, Disagree: 0%, Strongly Disagree: 0%. A combined 85.7% (Strongly Agree + Agree) of respondents believe AI is beneficial for language learning. This indicates strong acceptance and perceived usefulness of AI in educational contexts. 14.3% of respondents are undecided, suggesting some uncertainty or lack of experience with AI tools. Neither "Disagree" nor "Strongly Disagree" was selected, showing zero resistance or dissatisfaction among participants.

The data reflects a highly favorable attitude toward AI in language learning. The undecided group may represent individuals who have limited exposure to AI or are unsure about its effectiveness. The absence of negative responses suggests that concerns about AI integration are minimal in this sample. Address the undecided group through training and demonstrations to showcase AI's benefits. Explore why some respondents remain neutral—possibly due to lack of familiarity or trust in AI.

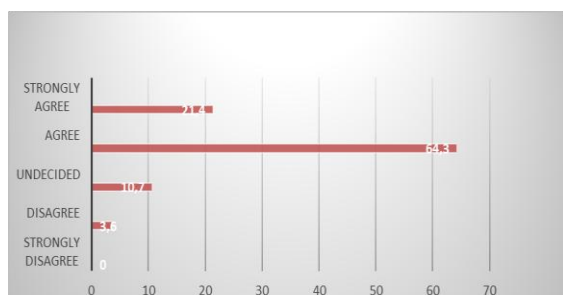


Figure 4. AI to help and Improve Language Faster

Figure 4 shows five response categories with corresponding percentages Strongly Agree 21.4%, Agree: 64.3%, Undecided: 10.7%, Disagree: 3.6%, Strongly Disagree: 0%. A combined 85.7% (Strongly Agree + Agree) of respondents believe AI helps improve language learning faster. This indicates that strong acceptance and perceived effectiveness of AI in language learning. 10.7% of respondents are undecided, suggesting some uncertainty or lack of experience with AI tools. Only 3.6% disagree, and 0% strongly disagree, showing very low resistance or dissatisfaction.

The overwhelming majority (almost 9 out of 10 respondents) perceive AI as beneficial for accelerating language learning. The small undecided group may represent individuals who have limited exposure to AI or mixed experiences. The negligible negative responses suggest that concerns about AI's effectiveness are minimal in this sample. The implication of this study that AI tools can be confidently integrated into language learning programs, as most learners find them helpful. Address the undecided group by providing training or demonstrations to showcase AI's benefits. Although negative feedback is minimal, ensuring accuracy and relevance of AI outputs can further strengthen trust.

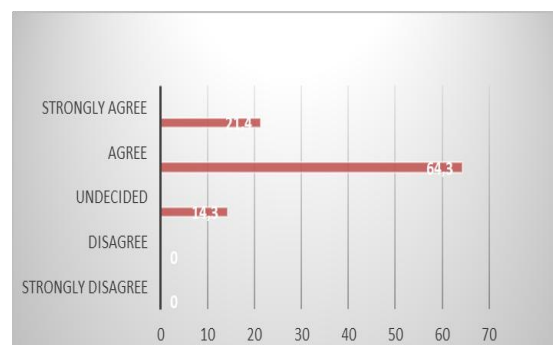


Figure 5. Using AI Enthusiate

Figure 5 shows respondents' opinions on whether using AI makes them more enthusiastic about learning. It includes five response categories with corresponding percentages. Strongly Agree: 21.4%, Agree: 64.3%, Undecided: 14.3%, Disagree: 0%, Strongly Disagree: 0%. A combined 85.7% (Strongly Agree + Agree) of respondents feel that AI increases their enthusiasm for learning. This indicates strong motivational impact of AI tools in the learning process. 14.3% of respondents are undecided, suggesting some uncertainty or lack of experience with AI's motivational effect. Neither "Disagree" nor "Strongly Disagree" was selected, showing zero resistance or dissatisfaction regarding AI's role in boosting enthusiasm.

The data reflects that AI is not only perceived as helpful for learning but also as a motivational factor for most learners. The undecided group may represent individuals who have not fully explored AI's potential or remain skeptical about its motivational benefits. The absence of negative responses suggests that AI integration is widely accepted and welcomed. Implication of this study Incorporating AI tools can enhance learner engagement and enthusiasm. Provide more exposure and training to undecided respondents to demonstrate AI's motivational benefits. Explore what specific AI features (e.g., adaptive feedback, instant answers) contribute most to increased enthusiasm.

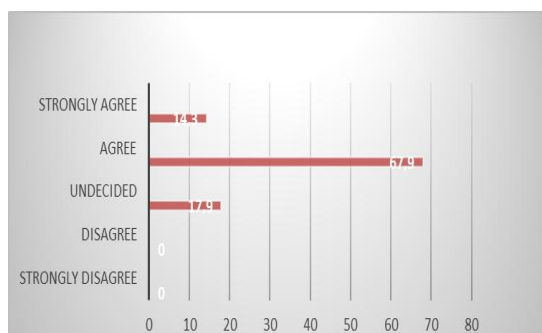


Figure 6. Using AI Feedback

Figure 6 illustrates respondents' opinions on whether using AI feedback helps improve English skills. It includes five response categories with corresponding percentages. Strongly Agree: 14.3%, Agree: 67.9%, Undecided: 17.9%, Disagree: 0%, Strongly Disagree: 0%. A combined 82.2% (Strongly Agree + Agree) of respondents believe AI feedback improves English skills. This indicates a high level of confidence in AI's role in language improvement. 17.9% of respondents are undecided, suggesting some uncertainty or lack of experience with AI feedback. Neither "Disagree" nor "Strongly Disagree" was selected, showing zero dissatisfaction regarding AI feedback.

The data reflects that most learners perceive AI feedback as beneficial for improving English skills. The undecided group may represent individuals who have not fully utilized AI feedback or are unsure about its effectiveness. The absence of negative responses suggests strong acceptance and trust in AI-assisted feedback. Implications of this study: Incorporating AI feedback systems can significantly enhance English learning outcomes. Provide more exposure and training to undecided respondents to demonstrate the value of AI feedback. Explore what specific feedback features (e.g., grammar correction, vocabulary suggestions) contribute most to skill improvement.

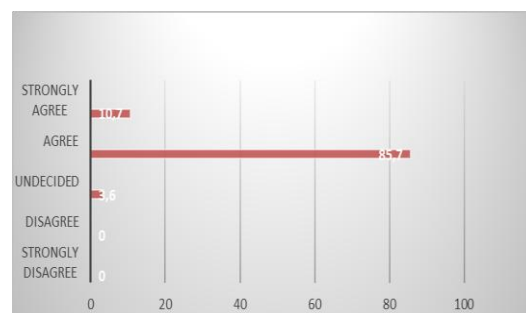


Figure 7 Using AI More Confidence in Learn English

Figure 7 illustrates respondents' opinions on whether using AI increases their confidence in learning English. It includes five response categories with corresponding percentages. Strongly Agree: 10.7%, Agree: 85.7%, Undecided: 3.6%, Disagree: 0%, Strongly Disagree: 0%. A combined 96.4% (Strongly Agree + Agree) of respondents feel that AI boosts their confidence in learning English. This is the highest positive response among similar charts analyzed, showing strong psychological benefits of AI integration. Only 3.6% of respondents are undecided, indicating very few learners are unsure about AI's confidence-building effect. Neither "Disagree" nor "Strongly Disagree" was selected, showing zero dissatisfaction regarding AI's role in enhancing confidence.

The data reflects that AI is not only perceived as helpful for learning but also significantly improves learners' confidence. The near absence of neutrality and complete lack of negative responses suggest that confidence-building is one of AI's strongest impacts in language learning. The implications: AI tools should be leveraged as confidence boosters in language learning programs. Maintain and enhance features that promote learner confidence, such as personalized feedback and adaptive learning. Explore which AI functionalities (e.g., instant feedback, error correction, conversational practice) contribute most to confidence improvement.

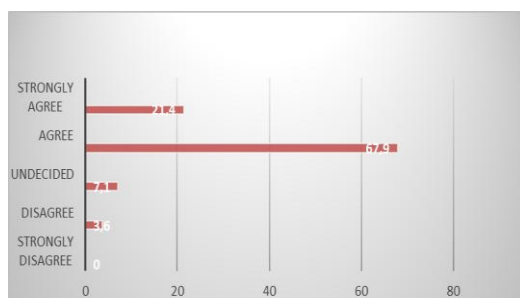


Figure 8. Using AI Analysis

Figure 8 shows respondents' opinions on whether using AI helps them analyze English texts better. It includes five response categories with corresponding percentages. Strongly Agree: 21.4%, Agree: 67.9%, Undecided: 7.1%, Disagree: 3.6%, Strongly Disagree: 0%. A combined 89.3% (Strongly Agree + Agree) of respondents believe AI improves their ability to analyze English texts. This indicates strong confidence in AI's analytical support for language learning. 7.1% of respondents are undecided, suggesting a small group is unsure about AI's effectiveness in text analysis. Only 3.6% disagree, and 0% strongly disagree, showing negligible resistance to AI's role in text analysis. The data reflects that AI is widely perceived as a valuable tool for improving text analysis skills in English. The small undecided and negative groups may represent learners with limited exposure or those who encountered inaccuracies in AI outputs. The implication of this study, AI tools should be integrated into activities that involve text analysis, such as reading comprehension and critical evaluation exercises. Address the undecided and negative respondents by providing training and examples of effective AI use. Explore which AI features (e.g., grammar checking, summarization, semantic analysis) contribute most to better text analysis.

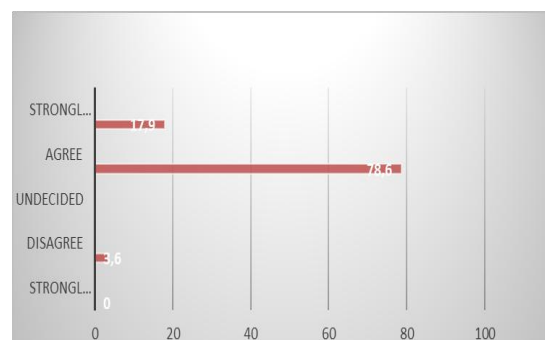


Figure 9. Using AI to Ask Information Help Students Gain Better Understanding

Figure 9 shows respondents' opinions on whether using AI to ask for information helps them gain better understanding. It includes five response categories with corresponding percentages. Strongly Agree: 17.9%, Agree: 78.6%, Undecided: 3.6%, Disagree: 3.6%, Strongly Disagree: 0%. A combined 96.5% (Strongly Agree + Agree) of respondents believe that asking AI for information improves their understanding. This is one of the strongest positive results among similar charts analyzed. Only 3.6% are undecided, and 3.6% disagree. No respondents strongly disagree, indicating negligible resistance. The data reflects that AI is widely perceived as an effective tool for clarifying and deepening understanding. The very small undecided and negative groups may represent learners who either have limited experience with AI or encountered occasional inaccuracies.

The implication of this study Encourage students to use AI for inquiry-based learning, as it significantly enhances comprehension. Address the small group of undecided or disagreeing respondents by providing guidance on effective AI usage. Explore which AI features (e.g., detailed explanations, examples, interactive Q&A) contribute most to improved understanding.

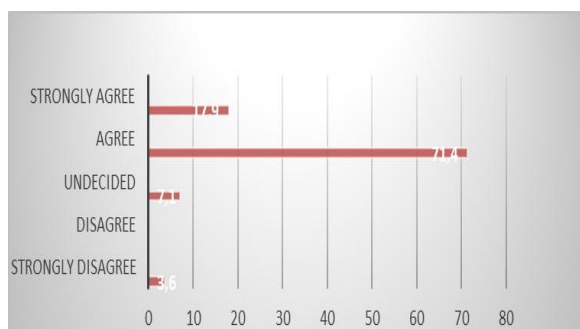


Figure 10. Respondents' Opinion using AI

Figure 10 illustrates respondents' opinions on whether using AI helps them connect ideas from different sources. It includes five response categories with corresponding percentages. Strongly Agree: 17.9%, Agree: 71.4%, Undecided: 7.1%, Disagree: 0%, Strongly Disagree: 3.6%. A combined 89.3% (Strongly Agree + Agree) of respondents believe AI helps them connect ideas from various sources. This indicates strong confidence in AI's role in enhancing integrative thinking. 7.1% of respondents are undecided, suggesting a small group is unsure about AI's effectiveness in connecting idea. Only 3.6% strongly disagree, and 0% disagree, showing negligible resistance to AI's role in idea integration.

The data reflects that AI is widely perceived as a valuable tool for synthesizing information and connecting ideas across sources. The small undecided and negative groups may represent learners with limited exposure or those who encountered occasional inaccuracies in AI outputs. The implication of this study, AI tools should be integrated into activities that involve research synthesis, brainstorming, and critical analysis. Address the undecided and negative respondents by providing training and examples of effective AI use for idea integration. Explore which AI features (e.g., summarization, cross-referencing, semantic linking) contribute most to better idea connectivity.

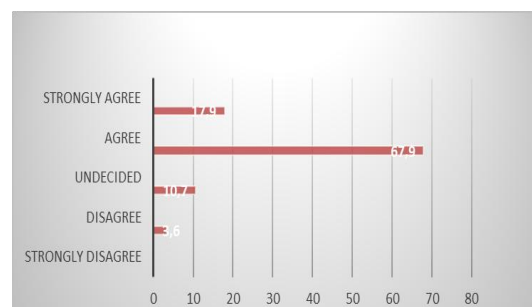


Figure 11. Using AI Help Students Provide Logical Argument

Figure 11 illustrates respondents' opinions on whether using AI helps them provide logical arguments in English discussions. It includes five response categories with corresponding percentages. Strongly Agree: 17.9%, Agree: 67.9%, Undecided: 10.7%, Disagree: 3.6%, Strongly Disagree: 0%. A combined 85.8% (Strongly Agree + Agree) of respondents believe AI supports them in forming logical arguments during English discussions. This indicates strong confidence in AI's role in enhancing reasoning and argumentation skills. 10.7% of respondents are undecided, suggesting some uncertainty or lack of experience with AI in discussion contexts. Only 3.6% disagree, and 0% strongly disagree, showing negligible resistance to AI's role in logical argumentation. The data reflects that AI is widely perceived as a valuable tool for improving logical reasoning in English discussions. The small undecided and negative groups may represent learners who have not fully explored AI's potential or encountered occasional inaccuracies.

The implication of this study, AI tools should be integrated into debate and discussion activities to strengthen logical reasoning and argumentation, Provide training and examples of effective AI use for constructing logical arguments, Explore which AI features (e.g., structured reasoning, evidence-based

suggestions) contribute most to better argumentation skills.

Students' Experience using AI

Most responses express strong satisfaction with AI in English learning. Common phrases include “sangat membantu” (very helpful), “mudah dan menyenangkan” (easy and enjoyable), and “lebih mudah memahami” (easier to understand). Many respondents highlight that AI makes learning easier, faster, and more accessible, even without external help. Several responses indicate that AI helps in problem-solving and understanding complex tasks, e.g., “AI mampu menjelaskan cara menyelesaikan masalah” (AI explains how to solve problems). Some respondents note occasional errors, e.g., “jawabannya kadang tidak sesuai” (answers sometimes do not match). A few responses express doubt, e.g., “Agak ragu karena ada salah dan benar” (a bit doubtful because there are mistakes). Comments like “tidak 100% untuk dicocoki” (not 100% accurate) indicate limitations. Many respondents say AI helps them think critically by questioning information and solving problems. Examples: “iya karena apa yang saya tidak mengerti bisa membantu saya cara menyelesaikan masalah” (yes, because what I don't understand, AI helps me solve). Some respondents remain unsure about AI's role in critical thinking.

Conclusions

The study concludes that the use of AI technologies, particularly Generative AI and MALL, significantly contributes to English language learning. Most respondents expressed positive attitudes toward AI integration, noting improvements in language skills, learning motivation, and confidence. ChatGPT was identified as the most dominant platform among students. Furthermore, AI demonstrated its potential to foster critical thinking through activities such as

text analysis, argument construction, and idea integration.

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