

The Implementation of Artificial Intelligence in Developing English Language Teaching Material: Case Study of English Teachers at SMP IT Mantab in Sabak Auh, Siak Sri Indrapura

Ati Adzki Fikria¹, Sutarmo², Bukhori³

Program Studi Tadris Bahasa Inggris, Fakultas Pascasarjana, Universitas Islam Negeri Sultan Syarif Kasim Riau, Indonesia

E-mail: adzkifikria@gmail.com¹, sutarmoharapan18@gmail.com², bukhori.elmeskumy@gmail.com³

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Abstract: The present study investigates the implementation of Artificial Intelligence (AI) in developing English language teaching materials by two English teachers at SMP IT Mantab in Sabak Auh, Siak Sri Indrapura. Using a qualitative case study method, the research highlights the teachers' perceptions, the types of AI tools used, and their strategies for adapting AI-generated content for classroom use. The findings reveal that teachers used AI tools such as ChatGPT, QuillBot, and Canva to enhance the relevance, accuracy, and creativity of their instructional materials. While the tools facilitated content generation and lesson planning, challenges remained in evaluating AI-generated material and ensuring its alignment with curriculum goals. This study provides valuable insights into AI integration at the classroom level, with implications for educators, school leadership, and future research.

INTRODUCTION

Artificial intelligence (AI) has become increasingly popular among students. As technology continues to advance, more students are recognizing the potential of AI to enhance their learning experiences (Jarrahi et al., 2023). Applied AI-powered study, AI-driven resources, or even participating in courses and workshops related to AI have become common for students to take as valuable means of extending their knowledge and skills. Many students realize the potential of artificial intelligence in improving learning experiences. Growing student interest in AI expresses a broader trend toward embracing technological innovations to improve educational processes. However, it is important to understand the roots of AI technology and its evolution over time to understand its current impact on education (Zang, 2022)

However, even with the presence of technology, improved quality and academic performance are not guaranteed. It is necessary, therefore, to determine how digital tools can effectively support students in their studies (Lydia et al., 2023) Each kind of technology that shapes this field of activity of Edtech need to be analyzed in respect to the distinctive features of Edtech (An & Oliver, 2021).

Artificial Intelligence or what is called AI means the development of computer-based frameworks that can perform tasks that generally require human intelligence, such as understanding patterns, appreciating normal language, making organized decisions, answering issues, and so on. Innovation depends on the creation of artificial intelligence that makes

machines with human intelligence in such a way that they can process, analyze, and make use of information and, therefore, learn from experience information to work on their exhibits after some time (Stewart et al., 2020). In this modern era, artificial intelligence is incorporated into many applications, discourse recognition, image handling, driverless vehicles, language translation, among others. The definitive goal of computer based intelligence is to develop systems that have a high degree of accuracy and effectiveness (Bartneck et al., 2021).

In education, knowledge growth is both a human and an AI shared responsibility. To fully realize AI capabilities for driving educational innovation, one needs to understand how to combine AI and human learning (Niu et al., 2022). The improvement of learning outcomes and experiences best suits the nature of AI, hence a continued active topic in education.

The ability of AI to enhance language learning through tools such as natural language processing (NLP) can provide personalized interactive learning experiences and real-time feedback, improving learning outcomes and student motivation. For example, one study found that artificial intelligence mediated instruction significantly improved students' English language learning, motivation, and self-regulated learning compared to traditional instruction (Wei, 2023). Another comprehensive review highlighted the transformative potential of AI in language learning and emphasized its role in facilitating second language learning through personalized learning experiences and improved engagement (Philpott, 2023). In addition, AI-based teaching technology in English Language Teaching (ELT) has been shown to offer both opportunities and challenges, such as ethical aspects related to data protection and the need for digital literacy of educators and learners (Hockly, 2023).

Due to being trained on a vast amount of internet data and capable of self-learning from its interactions with people, ChatGPT is able to produce more credible and plausible responses to queries, and to engage into a more genuine dialogue with its users as compared to previous chatbots (Sobania et al., 2023). ChatGPT also demonstrates the unique feature of remembering and incorporating previous conversations, and thus generating personalized responses depending on the context, tone, needs, or preferences of the user. Having this function, the interaction with ChatGPT gets even more personalized with each round of conversation (Farrokhnia et al., 2023).

A consensus is already growing among the scholars that ChatGPT harbors significant potential to enhance the delivery of instruction, and leverage student learning with its groundbreaking capabilities of providing its users with adaptive, personalized environments. ChatGPT offers opportunities for educational transformation and potential to improve learning, teaching, pedagogical innovations, assessment, and educational administration and acts as a significant catalyst for enriching the pedagogical experience as well as educational reforms. ChatGPT presents valuable opportunities for both students and educators, enhancing teaching and learning experiences. However, its integration into education also brings implications for educational leaders and policymakers, who must adapt to ensure a supportive and future-ready learning environment for 21st-century students.

Among the many AI tools mentioned above, there are other popular AI tools that are commonly used by the public and widely popular, such as QuillBot, and Canva AI. By employing AI driven technologies, the processes of curriculum and material development can be considerably streamlined, accelerated, and rendered more learner centered, as these tools cater to the unique needs of individual learners. Furthermore, AI systems have the potential to greatly simplify the process of assessment with specialized tools being continually developed and slated for future release (Ohio University, 2023).

The advancement of AI has generated AI-generated paraphrasing tools such as QuillBot

and Paraphrasing Tool (Chanpradit et al., 2024). QuillBot is an artificial intelligence powered writing assistant developed to improve and aid the writing process ((Muliani et al., 2023). It is a versatile tool that provides a variety of features aimed at boosting written communication. QuillBot is a modern era learning technology that many students utilise; it is also one of the online tools for improving writing. QuillBot makes it simple for students to create scientific articles, especially for those who still struggle with English; it is also simple to learn and use (Nurmayanti & Suryadi, 2023). QuillBot serves as a valuable tool for writers, students, and professionals alike, offering a range of functionalities to enhance the writing process, encourage creativity, and improve the overall quality of written content. QuillBot is an AI-powered writing assistant designed to enhance and aid the writing process. It serves as a versatile tool that offers various features aimed at improving written content (Wulandari & Marhamah, 2024).

The development of digital technology has brought significant changes in the world of education, including in learning Indonesian. In this digital era, the use of technology in learning is an urgent need to increase student effectiveness and creativity. One technology that can be utilized is an AI-based digital platform, such as the Canva application, which offers convenience in visual design, including in making posters as a form of visual presentation of text (Wijaya et al., 2025). Canva is an AI-based graphic design application that allows users to create various designs easily and quickly. Canva provides ready to use templates, a variety of fonts, icons, and other design elements that help students create attractive posters without having to have high design skills.

Canva is a versatile graphic design tool that has gained popularity among educators and researchers as a powerful resource for creating visually appealing and engaging materials (Aiyedun & Hama, 2023). This literature review explores the use of Canva in teaching and research contexts, examining its benefits, applications, and effectiveness. By reviewing the existing literature, this review aims to provide insights into the various ways Canva can be utilized to enhance instructional design, create professional-looking visual content, and support research activities.

Canva offers several benefits for educators in the realm of teaching. It provides a user-friendly platform with a wide range of customizable templates, allowing instructors to easily create visually captivating presentations, infographics, posters, and other instructional materials. These tools enable teachers to incorporate multimedia elements, such as images, videos, and animations, to effectively convey complex concepts and engage students in the learning process. Canva's drag-and-drop interface makes it accessible to users with limited design skills, empowering educators to create professional-looking resources without the need for extensive graphic design knowledge. Additionally, Canva offers a diverse library of high-quality images, icons, and fonts, enabling teachers to enhance their materials with visually appealing elements. By incorporating Canva into teaching practices, educators can elevate the visual appeal of their instructional materials, leading to increased student engagement and comprehension.

RESEARCH METHOD

This research was conducted using qualitative approach, specifically utilizing the case study method. Case studies as providing a detailed exploration of a single unit, which could be an individual, group, site, class, policy, program, process, institution, or community. This unit represents a singular occurrence that the researcher is interested in examining. Additionally, case studies typically involve collecting data from multiple sources over an extended period. In this study, data were gathered from various sources, with the findings specifically applicable to the

cases investigated.

As (Ary et al., 2010) stated that a case study focuses on a single unit to produce an in-depth description that is rich and holistic. The underlying question is? What are the characteristics of this particular entity, phenomenon, person, or setting? Case studies typically include multiple sources of data collected over time. As indicated, case studies provide an in-depth description of a single unit. The “unit” can be an individual, a group, a site, a class, a policy, a program, a process, an institution, or a community. It is a single occurrence of something that the researcher is interested in examining. The unit of analysis determines whether the study is a case study or a different form of qualitative research. Case studies can answer descriptive questions (what happened) or attempt to explain why something happened by looking at a process. They are particularistic (focused on a particular phenomenon, situation, or event), descriptive (providing as an end result a thick rich description), and heuristic (focused on providing new insights). The researcher believes that something can be learned in this specific case.

RESULT AND DISCUSSION

In this section, the researcher discusses the findings that had been explained in the previous part. These discussions aim to find interpretation of the findings of the research based on the research questions. There were four major scopes of results that were addressed.

Firstly, the data about the types of AI tools used to develop English language teaching materials. As revealed from observation, interview, and documentation data, the teachers employed a variety of AI tools namely ChatGPT, Canva AI, and QuillBot in the development of English language teaching materials. ChatGPT emerged as a dominant tool used by both teachers to generate content such as reading texts, practice questions, and grammar explanations. In line with (Konhke et al., 2023) reveals that ChatGPT as interactive, personalised learning tool, leveraging its wide array of engaging applications from providing writing feedback to offering tutoring support. This suggests that ChatGPT plays a crucial role in assisting teachers in lesson planning and content creation by offering diverse and tailored materials that align with students’ needs. The use of ChatGPT reflects a shift in teaching practice, where educators leverage AI not only to save time but also to enhance the quality and relevance of the instructional resources they provide. According to Thiagarajan, AI-powered chatbots and virtual assistants provide instant support and information to students and educators. They can answer common questions, provide reminders, and assist with administrative tasks (Thiagarajan, 2024).

In addition to content generation, the teachers also integrated Canva AI into their material development process. This tool was particularly useful for enhancing the visual presentation of teaching materials, such as creating more engaging and interactive presentation slides. Moreover, Wijaya points out that that one technology that can be utilized is an AI-based digital platform, such as the Canva application, which offers convenience in visual design, including in making posters as a form of visual presentation of text (Wijaya et al., 2025). The incorporation of Canva AI indicates the importance placed on the aesthetic and communicative elements of teaching, aiming to make lessons more visually appealing and easier to follow for students. The visually enhanced materials contributed to increased student interest and engagement, highlighting the potential of design-oriented AI tools in supporting effective classroom delivery. It was related to the study by Aiyedun that Canva is a versatile graphic design tool that has gained popularity among educators and researchers as a powerful resource for creating visually appealing and engaging materials (Aiyedun & Hamma, 2023).

Another key AI tool utilized by the teachers was QuillBot, which served a complementary

function in refining and simplifying the content produced. Moreover, Chanpradit in her study explains that the advancement of AI has generated AI-generated paraphrasing tools such as QuillBot and Paraphrasing Tool (Chanpradit, 2024). QuillBot was mainly used for paraphrasing and modifying descriptive texts to match the language proficiency levels of the students. In addition, (Wulandari & Marhamah, 2024) in her study explains that QuillBot is an AI-powered writing assistant designed to enhance and aid the writing process. It serves as a versatile tool that offers various features aimed at improving written content.

Its application ensured that materials were not only grammatically accurate but also more accessible and easier to understand. This demonstrates the role of AI in supporting differentiated instruction, allowing teachers to adapt and personalize content to suit varied learner needs. August and Tsaima also points out that AI as the field concerned with empowering computers to do things that would otherwise appear to require intelligence to do if done by human beings (August & Tsaima, 2021). Overall, the integration of ChatGPT, Canva AI, and QuillBot illustrates a comprehensive and strategic use of AI to support both the development and delivery of English language teaching materials in the classroom.

Secondly, the data about the implementation of Artificial Intelligence (AI) in developing English language teaching materials at SMP IT Mantab involves a structured, thoughtful, and purposeful process that integrates both technological innovation and pedagogical expertise. Teachers initiate the development by selecting the relevant learning topic and inputting keywords or prompts into AI tools such as ChatGPT to generate various types of content, including dialogue texts, multiple-choice questions, grammar exercises, and educational games. As Sallam explain that one of the unique features of ChatGPT is its ability to generate text conditional on input prompts (Sallam, 2023). For example, a user can input a partial sentence or a question, and ChatGPT can generate a complete response. These AI-generated materials are then critically reviewed and modified by teachers to ensure they align with the school's curriculum, students' language proficiency, and the institution's integrated Islamic values.

This process illustrates a balanced use of AI in which the efficiency and creativity of digital tools are effectively combined with human judgment and instructional oversight. Rather than relying entirely on AI outputs, teachers function as editors and curators modifying lesson plans, reading passages, and exercises to suit the academic and spiritual context of the school. Moreover, Cotton in his study explains that ChatGPT has a vast vocabulary and can generate human-like text on various subjects, making it a powerful tool for language learning and instruction (Cotton et al., 2023). The adaptations often involve simplifying or elaborating the linguistic complexity of the materials, embedding moral messages, and ensuring that tasks promote character development such as honesty, collaboration, and respectful communication. The findings were similar to the study conducted by (Graefen, and Fazal, 2024) that the presence of ChatGPT raises concerns about the development of critical thinking skills and the potential inhibition of human relationships. This practice reinforces the irreplaceable role of teachers in contextualizing content to make it pedagogically sound and culturally relevant.

AI also plays a significant role in diversifying learning materials. Tools like Canva AI allow teachers to design visually appealing slides and instructional content that move beyond the traditional textbook format. It was related with the study by Wei that artificial intelligence mediated instruction significantly improved students' English language learning, motivation, and self-regulated learning compared to traditional instruction (Wei, 2023). This visual engagement helps maintain students' attention and enhances their understanding of complex ideas. Bilingual texts and colorful, interactive designs contribute to higher levels of comprehension and

enjoyment in class. Additionally, AI facilitates differentiated instruction by enabling the creation of varied tasks that cater to students with different learning speeds and abilities providing simpler exercises for those who need more support, and more challenging ones for advanced learners. QuillBot, for example, is frequently used to paraphrase difficult sentences, making the language more accessible to students across proficiency levels. The findings were similar to the study conducted by Muliani also points out that QuillBot is an artificial intelligence powered writing assistant developed to improve and aid the writing process (Muliani et al., 2023).

Furthermore, AI supports formative assessment and feedback mechanisms by providing immediate, automated evaluations of student work, particularly in writing. These tools can identify grammar errors, suggest vocabulary improvements, and assess coherence, giving students timely insights into their performance. The finding was similar with the study conducted by Barrot that as an automated writing assistant, ChatGPT has the potential to provide feedback on learners' writing and grammar explanations (Barrot, 2023). Nevertheless, teachers play a critical role in monitoring and refining this feedback to prevent misunderstandings and ensure that corrections are accurate and constructive. (Fidinansyah, 2024) also point out that AI tools can evaluate and provide feedback on students' writing, helping them improve their grammar, syntax, and overall writing skills. His combination of AI efficiency and teacher oversight ensures that feedback remains personalized, relevant, and pedagogically sound.

The integration of AI into English language teaching at SMP IT Mantab not only enhances the effectiveness of material development but also encourages both teachers and students to engage more deeply in the learning process. Teachers benefit from reduced workload and increased inspiration for lesson planning, while students experience more personalized, visually engaging, and inclusive instruction. Ultimately, the implementation of AI tools like ChatGPT, Canva AI, and QuillBot has significantly contributed to the development of English language teaching materials that are more dynamic, adaptable, and aligned with the values of integrated Islamic education. According to Pokrivcakova AI powered tools are applied also in computer linguistics, in the creation of computer languages, machine translations and improvement of human machine communication (Pokrivcakova, 2019). This ongoing collaboration between technology and human judgment highlights that while AI can offer valuable support, the teacher's role remains central in shaping meaningful and value driven learning experiences.

Thirdly, the data about reasons for applying ai in developing English language teaching materials at SMP IT Mantab reveals multiple significant benefits, particularly in terms of efficiency, adaptability, and pedagogical relevance. Similar with study by Luckin et al that AIEd able to collaborative learning a complex task for one teacher alone to do by ensuring that the right group is formed for the task at hand, or by providing targeted support at just the right time" (Luckin et al., 2019). AI technologies contribute to enhancing the teaching and learning process by enabling teachers to produce instructional content more quickly and with greater flexibility, thus addressing the diverse needs of their students.

One of the primary advantages of AI integration is the substantial improvement in efficiency. Teachers often face the challenge of preparing materials for multiple classes with varying proficiency levels, which can be time consuming when relying solely on conventional resources such as textbooks and online references. AI tools facilitate the rapid generation of diverse content, including practice exercises, reading passages, grammar explanations, and even bilingual materials, thereby allowing educators to allocate more time toward instructional delivery and student interaction. As explain by (Jiao et al., 2023) that ChatGPT's language translation capabilities offer a new approach to learning a second language. Teachers can input

text in their native language and have it automatically translated into their target language. This efficiency gain is particularly valuable in a school environment where teachers manage extensive responsibilities. Suitable with Rudolph that the integration of such AI driven tools can potentially empower EFL teachers to optimize their teaching effectiveness and better address the multifaceted needs of their learners (Rudolph et al., 2023). The integration of such AI driven tools can potentially empower EFL teachers to optimize their teaching effectiveness and better address the multifaceted needs of their learners

Beyond efficiency, AI enhances the adaptability and personalization of learning materials. AI-powered systems can generate tailored resources that cater to the unique abilities and learning paces of individual students. This personalization includes the creation of independent practice activities, interactive language exercises, vocabulary building tasks, and quizzes adjusted to students' proficiency levels. Such differentiation enables targeted support, for example, by providing foundational grammar exercises for students needing reinforcement, while offering more advanced challenges to higher level learners. ChatGPT offers numerous benefits, such as automated assessment, language translation support, and personalized learning experiences. It can also serve as a virtual tutor and facilitate the exchange of research ideas (Sok & Heng, 2023). This student centered approach promotes engagement and facilitates better learning outcomes by recognizing and responding to the varied competencies within the classroom.

Furthermore, AI supports the inclusion of contemporary language usage and contextual relevance, allowing teachers to design materials that integrate current communicative practices alongside traditional theoretical knowledge. This relevance is critical in fostering meaningful language acquisition that students can apply beyond the classroom. Additionally, AI tools contribute to the aesthetic and interactive quality of learning resources. By utilizing applications such as Canva AI, educators enhance the visual appeal of instructional materials, which in turn increases student motivation and interest. The finding was similar with study conducted by Sok that Canva provides ready to use templates, a variety of fonts, icons, and other design elements that help students create attractive posters without having to have high design skills.

Fourthly, the data about the maintaining Islamic integrity in Ai-assisted learning materials despite the notable advantages of Artificial Intelligence (AI) in enhancing the efficiency and adaptability of English language teaching materials, its application within Islamic educational settings reveals critical limitations. AI-generated content often lacks the nuanced understanding required to accurately reflect and uphold the deep cultural and religious values central to Islamic education. This shortcoming necessitates ongoing human intervention to ensure that materials remain culturally appropriate and aligned with the community's beliefs and traditions.

The complexity of Islamic values, especially abstract and spiritually profound concepts such as sincerity (ikhlas), intention for Allah (niyyah), worship (ibadah), and manners (adab), presents particular challenges for AI systems. These concepts demand a level of interpretive depth and contextual sensitivity that AI currently cannot replicate. As highlighted by the educators at SMP IT Mantab, AI tends to produce materials that are too generalized or influenced by Western cultural frameworks, which can result in content misaligned with local Islamic perspectives. Consequently, teachers must carefully review, modify, and contextualize AI-generated content to preserve the integrity of the religious and cultural framework that guides the school's curriculum.

The integration of AI in English language teaching within integrated Islamic schools presents both significant opportunities and notable challenges. While AI offers efficiency and flexibility in generating educational content, it still falls short in understanding the deeply rooted

cultural and spiritual dimensions of Islamic teachings. As highlighted by both Teacher A and Teacher B, core concepts such as creed (akidah), manners (adab) and sincerity (keikhlasan) require contextual sensitivity and spiritual depth that current AI systems are unable to fully replicate. This necessitates the active role of teachers in reviewing, editing, and contextualizing AI-generated materials to ensure they align with the Islamic values and cultural expectations upheld by their institutions.

In summary, while AI significantly contributes to the development of engaging and personalized English learning materials, its current limitations in grasping the depth of Islamic cultural and spiritual values highlight the continued necessity of teacher involvement. Human expertise remains crucial in bridging the gap between technological capabilities and religious cultural authenticity, ensuring that AI serves as a supportive tool rather than a replacement within faith based educational environments.

CONCLUSION

The integration of AI tools such as ChatGPT, Canva AI, and QuillBot in English language teaching at SMP IT Mantab demonstrates a strategic and balanced approach to leveraging technology within a faith based educational context. These tools enhanced content generation, visual design, and language refinement, enabling greater efficiency, personalization, and engagement in instructional delivery. However, their use remained guided by the critical role of teachers, who ensured alignment with curriculum goals and Islamic values. The study revealed that while AI offers significant benefits such as flexibility, differentiated learning material, and contextual relevance it also has limitations, particularly in capturing the spiritual and ethical dimensions essential to Islamic education. Thus, the success of AI implementation at SMP IT Mantab underscores the importance of human oversight and cultural sensitivity in integrating technology within religious schooling.

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