

## The Use of Artificial Intelligence in English Learning: Case Study in English Department

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### Abstract

The advancement of artificial intelligence (AI) has reshaped education, particularly in English language learning at the university level. Applications such as QuillBot, Grammarly, Google Translate, and Duolingo are increasingly used by students to strengthen their language proficiency. This study aims to identify which AI tools offer the most benefits, examine how English Department students at Muhammadiyah University of Ponorogo integrate them into learning routines, and evaluate their impact on academic outcomes. A qualitative case study approach was employed, with data collected through a Google Forms survey targeting students experienced in using AI applications. Data were analyzed using the Miles and Huberman interactive model, which involves reducing redundancy, categorizing responses, and drawing valid conclusions. Findings show that students actively use various AI tools to support academic tasks, especially in writing and text comprehension. QuillBot and Grammarly are the most frequently used, helping improve grammar, paraphrasing, and plagiarism avoidance. Students also report positive effects, including increased motivation, confidence, and subject mastery. However, they remain cautious about limitations, such as occasional inaccuracies in paraphrased content.

Keywords:

Artificial Intelligence;

English Learning;

Case Study

## 1. Introduction

Artificial Intelligence, also known as AI, is the advancement of computer systems that can perform tasks involving human intelligence, such as pattern recognition, natural language identification, systematic decision-making, and answering questions. The main idea of AI technology is to create machines with human intelligence, the ability to learn from experience, and the capacity to process, analyze, and use data to improve performance over time (Gusli et al., 2023).

The rapid growth of computer systems in this era of globalization cannot be ignored, as it continues to impact the field of education. Technological advances require us to keep pace with them. The rapidly evolving nature of education demands that all students, regardless of level, participate in this development and use it to enhance their knowledge, sharpen their skills, and innovate to facilitate their work (Delgado et al., 2020).

Education is one of the fastest growing fields as technology advances. Due to these changes, the use of AI technology is gaining popularity in the educational sector. Gusli et al. (2023) state that advances in technology and digital platforms make learning English easier, while Nurmala et al. (2023) emphasize that this provides students with opportunities to improve their English skills. The integration of technology-enhanced tools in English language teaching significantly supports vocabulary acquisition, grammar mastery, and speaking fluency, making the learning process more efficient and engaging.

However, problems arise from the inappropriate use of information technology in education, especially in English language learning (Nimasari et al., 2025). Studies have shown that although technology has great potential, improper application can hinder the teaching and learning process. Warschauer (2002) noted that the success of technology in language learning depends on appropriate teaching environments, while Chapelle (2007) stressed that technology should strategically support educational goals rather than serve as an additional tool without clear guidelines. Therefore, students must learn to choose and use digital tools effectively to meet their learning objectives (White, 2010).

## 2. Literature Review

The rapid development of Artificial Intelligence (AI) has significantly transformed educational practices, particularly in the field of English language learning. AI-powered applications are increasingly utilized to support various language skills, including grammar correction, vocabulary development, writing accuracy, and pronunciation practice. Delgado et al. (2020) argue that AI-based learning tools provide adaptive feedback and personalized learning experiences, allowing learners to progress at their own pace. In higher education contexts, such tools are perceived as valuable resources that complement traditional instruction by offering immediate assistance and flexible access to learning materials.

Several studies have documented the positive role of AI in facilitating English language acquisition. Gusli et al. (2023) highlight that AI applications help students improve linguistic accuracy and learning efficiency, particularly in grammar and writing tasks. Similarly, Nurmala et al. (2023) report that AI-assisted learning environments enhance students' engagement and motivation, as learners feel more confident when receiving instant feedback. These findings suggest that AI tools can function as effective learning aids, especially for students who require additional support outside classroom instruction. Despite these benefits, the effectiveness of AI in language learning is highly dependent on how it is integrated into pedagogical practices. Warschauer (2002) emphasizes that technology alone does not guarantee learning success; instead, meaningful learning occurs when technology is aligned with instructional goals and supported by appropriate learning environments. Chapelle (2007) further argues that AI and computer-assisted language learning tools should be evaluated based on their ability to promote genuine language use, critical thinking, and learner interaction, rather than merely automating tasks.

Another important issue discussed in the literature concerns students' dependency on AI applications. While AI tools promote learner autonomy, excessive reliance may reduce students' cognitive engagement and critical language awareness. White (2010) cautions that technology-assisted learning must be designed to encourage reflection and active processing, not passive acceptance of automated output. This concern is echoed in recent studies showing that students sometimes trust AI-generated content without sufficient evaluation, which may hinder the development of independent language skills. Overall, previous research demonstrates that AI has strong potential to enhance English language learning when used strategically and ethically. However, there remains a research gap regarding how students perceive the effectiveness of different AI tools and how these tools influence learning behaviors in real academic contexts. Many studies focus primarily on technological affordances or learning outcomes without examining patterns of use, perceived benefits, and challenges from students' perspectives. Therefore, qualitative case studies exploring students' experiences with AI applications are essential to provide deeper insights into how AI can be effectively integrated into English language education.

## 3. Method

This study employed a qualitative research design. Qualitative research is often called naturalistic research because it emphasizes processes and meanings that are not measured in terms of quantity. It focuses on understanding social phenomena as experienced by participants. In this study, the researcher adopted a case study approach since it allows for in-depth exploration of how English Department students use Artificial Intelligence (AI) applications in their learning process. Case study research was considered suitable to provide detailed descriptions and contextual insights into students' experiences.

The research participants consisted of students from the English Department at Muhammadiyah University of Ponorogo. The population included all students enrolled in the department, while the

sample was drawn using random sampling. A total of 15 respondents were selected as the sample of this study. The criteria for sample selection included having completed at least one semester of English language learning and having access to the technology required to use AI applications. The sampling technique ensured that each participant had equal opportunities to be chosen, thereby representing the larger population.

The data collection techniques relied on open-ended questionnaires distributed through Google Forms. This method allowed students to provide detailed responses regarding their experiences with AI in English learning. The questionnaire was designed to explore students' use of AI applications, frequency of use, benefits, and challenges encountered. The use of Google Forms facilitated efficient data gathering as participants could access and complete the form anytime and anywhere.

The data analysis followed Miles and Huberman's interactive model, which consists of three main steps: data condensation, data display, and conclusion drawing/verification. Data condensation involved selecting, simplifying, and organizing raw data into meaningful categories. Data display referred to presenting the condensed data in a structured form such as tables or narratives to identify emerging themes and patterns. Finally, conclusion drawing involved interpreting the findings and verifying them through triangulation, member checks, and continuous comparison with the collected data. This systematic process ensured the validity and reliability of the research findings.

## 4. Results and Discussion

### 4.1 Results

The findings of this study reveal that students in the English Department at Muhammadiyah University of Ponorogo actively integrate Artificial Intelligence (AI) applications such as Grammarly, QuillBot, Google Translate, and Duolingo into their learning process. These tools were primarily used to support grammar correction, paraphrasing, vocabulary enrichment, and pronunciation practice. Students reported that AI applications enhanced their learning autonomy, improved writing accuracy, and increased their confidence in speaking English. Furthermore, the accessibility and user-friendly design of these tools encouraged frequent usage, particularly in writing assignments and oral practice. Table 1 presents the frequency of AI tool usage among the respondents.

Table 1

*Frequency of AI Application Usage (n = 15)*

AI Application	Number of Students	Percentage
QuillBot	12	80%
Grammarly	11	73%
Google Translate	10	67%
Duolingo	6	40%

Despite these advantages, the study also uncovered challenges. Some students relied heavily on AI applications, which occasionally reduced critical thinking and independent problem-solving in language learning. Others expressed concerns about the accuracy of AI-generated output, especially in complex grammar structures and nuanced translation. This indicates that while AI provides significant benefits, it should be used as a supportive tool rather than a replacement for active learning and teacher guidance. Students reported multiple purposes for using AI tools. The most commonly mentioned purposes are summarized in Table 2.

Table 2

*Purposes of AI Application Use*

Purpose of Use	Frequency	Percentage
Grammar correction	13	87%
Paraphrasing	12	80%
Vocabulary enrichment	10	67%
Translation support	9	60%
Pronunciation practice	6	40%

Compared to previous studies, this research highlights both consistencies and differences. Similar to findings by Gusli et al. (2023) and Nurmala et al. (2023), AI integration was shown to facilitate vocabulary acquisition, grammar mastery, and fluency. However, unlike earlier studies that largely emphasized the positive impact of AI, this research also stresses the potential drawbacks of overreliance on technology, echoing concerns raised by Warschauer (2002) and Chapelle (2007). Thus, the findings provide a more balanced perspective by acknowledging not only the opportunities but also the limitations of AI in English learning.

Participants reported several perceived benefits of using AI applications in English learning. These benefits are categorized into three main themes: learning efficiency, confidence building, and learning autonomy. Representative verbatim responses include:

*“QuillBot helps me paraphrase my sentences so my writing sounds more academic and less repetitive.”* (Participant 4)

*“Grammarly makes me more confident because I can check my grammar before submitting assignments.”* (Participant 9)

*“Using AI tools allows me to study independently without always asking the lecturer.”* (Participant 12)

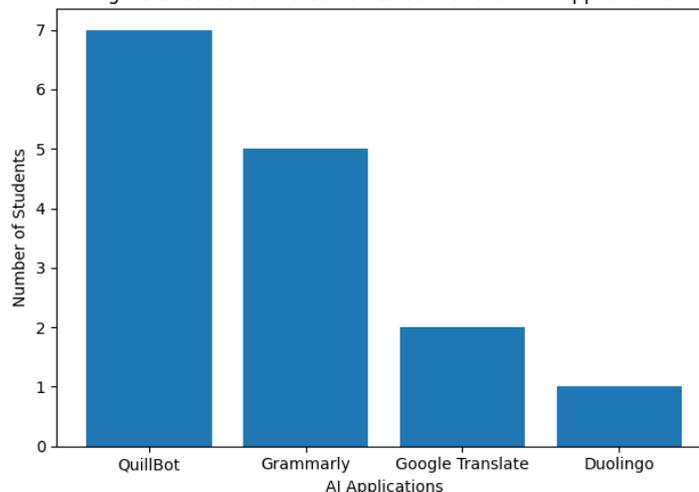
Despite the benefits, students also reported challenges related to AI use. The main issues included overreliance, accuracy concerns, and reduced critical thinking. Examples of student responses are as follows:

*“Sometimes I depend too much on Grammarly and forget to think about the grammar rules myself.”* (Participant 6)

*“The paraphrasing result from QuillBot is not always accurate, so I still need to check it manually.”* (Participant 14)

When asked which AI application was perceived as the most effective overall, students ranked the tools as shown in Figure 1. Overall, the results suggest that AI tools contribute positively to English learning outcomes, but their effectiveness depends on how students strategically use them in combination with traditional learning methods and teacher support.

Figure 1. Students' Perceived Effectiveness of AI Applications



## 4.2 Discussion

This study demonstrates that Artificial Intelligence (AI) applications are becoming integral to English learning in higher education. The main finding indicates that AI tools such as Grammarly, QuillBot, Google Translate, and Duolingo contribute to improving students' writing accuracy, vocabulary acquisition, and speaking confidence. These outcomes correspond directly to the original objective of this study, which was to explore how students integrate AI applications into their learning practices and to evaluate the advantages and challenges of such integration.

From a scientific perspective, these results can be explained by the nature of AI technology itself. By offering instant feedback, grammar correction, and vocabulary suggestions, AI fosters learner autonomy and accelerates the language acquisition process. This aligns with constructivist learning theories, which emphasize the importance of active engagement and self-directed learning. However, the reported drawbacks, such as overreliance on AI and reduced critical thinking, highlight the necessity of balancing technology with cognitive effort and teacher guidance. These findings suggest that AI should be positioned as a supportive learning aid rather than as a substitute for human instruction.

In relation to prior research, this study confirms and extends existing knowledge. Similar to Gusli et al. (2023) and Nurmala et al. (2023), the findings support the positive role of AI in enhancing vocabulary, grammar mastery, and fluency. However, the present study diverges by emphasizing the risks of dependency on AI and by noting issues with accuracy in certain linguistic contexts. This contrasts with earlier works that predominantly celebrated the benefits of AI without addressing its limitations. The acknowledgment of these challenges resonates with Warschauer (2002) and Chapelle (2007), who argued that the success of technology integration in education depends on context, proper guidance, and pedagogical alignment.

The findings of this study can be further understood when viewed through the lens proposed by Nimasari et al. (2025), who argue that digital technologies in language education should function as dialogic and reflective spaces, rather than merely instrumental tools for efficiency. While AI applications such as Grammarly, QuillBot, Google Translate, and Duolingo were primarily used by students in this study to enhance writing accuracy, vocabulary acquisition, and speaking confidence, their pedagogical value depends on how learners engage with them. Similar to the participatory digital reading environments described by Nimasari et al. (2025), AI tools have the potential to support learner agency and autonomy when students actively reflect on feedback, question linguistic choices, and negotiate meaning. However, when AI is treated as an authoritative source that provides instant solutions without reflection, it risks reinforcing surface-level learning and dependency. This tension mirrors Nimasari et al.'s (2025) distinction between technology as a transformative pedagogical space and technology as a mechanistic aid. In the Indonesian higher education context, where sociocultural norms often position students as respectful recipients of authority, AI tools may inadvertently be perceived as unquestionable experts. Therefore, aligning AI-assisted EFL learning with dialogic and reflective pedagogies—such as those grounded in Systemic Functional Linguistics and critical pedagogy—becomes essential. By positioning AI as a tool for inquiry, revision, and discussion rather than as a replacement for thinking, educators can harness its benefits while fostering critical language awareness and reflective learning practices, as advocated by Nimasari et al. (2025).

Overall, the discussion reveals that while AI applications have a transformative potential in English learning, their effectiveness is conditional. They are most beneficial when integrated thoughtfully into the curriculum, used strategically by students, and supported by teachers who can guide learners in developing both linguistic competence and critical awareness. This perspective underscores the dual role of AI—as both an enabler of independent learning and a tool requiring careful management to avoid misuse.

## 5. Conclusion

This study set out to investigate how English Department students at Muhammadiyah University of Ponorogo integrate Artificial Intelligence (AI) applications into their learning and to evaluate the advantages and challenges of such integration. The findings indicate that AI tools, including Grammarly, QuillBot, Google Translate, and Duolingo, play a significant role in supporting grammar mastery, vocabulary development, and speaking fluency. At the same time, the study revealed challenges such as overreliance on technology and occasional inaccuracies in AI-generated output. These insights directly

address the research objectives by providing a balanced picture of the benefits and limitations of AI in English language learning.

The contribution of this research lies in advancing the understanding of how AI supports learner autonomy while simultaneously highlighting the risks of dependency. Unlike earlier studies that primarily emphasized the benefits of AI, this work underscores the importance of critical engagement and the need for pedagogical frameworks to guide the effective use of technology. By doing so, it enriches current knowledge on technology-assisted language learning and offers a more nuanced perspective for educators and learners.

The scientific justification for this study rests on the potential of AI to transform language education when integrated thoughtfully into teaching and learning practices. Its applications extend beyond grammar and vocabulary support to fostering learner independence and confidence. The study suggests that educators should encourage students to use AI as a complement to traditional methods, ensuring that human guidance and critical thinking remain central to the learning process.

Future research should further investigate the long-term impact of AI-assisted learning on language proficiency and explore how different AI tools affect specific skills such as writing, speaking, and listening. Comparative studies across institutions or cultural contexts could provide broader insights into the effectiveness of AI in diverse learning environments. Additionally, experimental designs that integrate AI with collaborative learning strategies could open new directions for language pedagogy in the digital era.

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