

Digital Transformation of English Language Learning Through Artificial Intelligence Chatbots: Teacher and Student Perspectives in Central Aceh

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A B S T R A C T

This research aims to examine the students' and teachers' perspectives in Aceh Tengah regarding the digital transformation of English language learning through Chatbot AI. Descriptive qualitative design was employed and the data gather through semi structure interview with 4 English teachers and 12 senior high school students in Aceh Tengah. The findings indicate that digital technology, including Chatbot AI, has been used as a supporting tool in English language learning, particularly to assist in understanding materials, completing assignments, and expanding students' knowledge. Students perceive Chatbot AI as beneficial due to its ease of use, speed, and clarity of information, while teachers view it as an additional learning resource that should be used wisely with supervision and verification of information. Nevertheless, the use of Chatbot AI remains limited due to facility constraints, uneven internet access, school policies restricting device usage, and differences in students' English proficiency levels. The conclusions and recommendations of this study are expected to contribute to policymakers, educators, application developers, and researchers in enhancing understanding of the impact of Chatbot AI on English language learning.

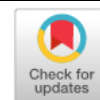
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INTRODUCTION

The rapid development of Artificial Intelligence (AI) has significantly influenced educational practices worldwide, marking a major shift in how teaching and learning are conducted. Globally, AI technologies are increasingly integrated into educational settings to support personalized learning, automate assessment, and enhance student engagement. Tools such as AI-powered chatbots, intelligent tutoring systems, and adaptive learning platforms have enabled educators to provide more individualized instruction and real-time feedback. Moreover, the rise of AI has transformed how students access information and complete academic tasks, raising both opportunities for innovation and concerns related to academic integrity, critical thinking, and ethical use. As a result, many countries are actively exploring policies and strategies to integrate AI into education systems, emphasizing digital literacy and teacher readiness. These global trends highlight the growing importance of understanding how AI can be effectively and responsibly implemented in diverse educational contexts.

The influence of technology in education is unavoidable. The contribution of technology to education, known as digital transformation, has brought many changes in teaching and learning methods, learning content, distribution of teaching materials, and other aspects of education. Digital transformation in learning includes online learning platforms such as Zoom Meeting and Google Meet; online learning applications such as Ruangguru, Quipper, and Duolingo; and artificial intelligence (AI)-based tools such as chatbots (Chatgpt, Gemini, Meta AI, Perplexity AI), among others.

AI chatbots are one example of digital transformation in education, providing a learning experience that is easy, interactive, and enjoyable. Through AI chatbots, facilities such

as information, insights, answers to user questions, and exercises are available, accessible to students and teachers anytime and anywhere. Furthermore, AI chatbots have the potential to significantly impact the quality of teaching and learning in schools.

Several literature studies show that digital media has had an impact on improving English speaking, listening, reading, and writing skills (Melati, 2024). In addition, students who use digital media in learning can make it easier for students to manage their study time and the speed of learning according to their abilities (Wibowo, 2020). Technology in English learning has become a trend in the current era. English, which is an international language, is a means of communication and key information in various aspects of life, making English very important to be mastered and learned by generations, even starting from elementary school to college. The role of technology in English learning includes providing easy access to information from online learning resources (courses, websites, learning applications), and more than that, the presence of technology can make lessons more interactive. (Paramita, 2023). It's undeniable that today's students grow up and live side by side with technological advances and access to the web anytime, anywhere as long as there's internet access. This has undoubtedly impacted the way students learn, obtain learning information, think, socialize, and make decisions (Taopan et al., 2023). One digital medium that has significantly impacted student learning activities and teacher teaching methods is AI chatbots. Numerous previous studies have examined how AI chatbots, such as ChatGpt, benefit both students and teachers (Dwiedi et.,al, 2023) (Kasneci. et Al., 2023) (Sok & Heng, 2023). The use of AI chatbot technology in learning contexts is crucial for further exploration and research in an era increasingly dominated by technology and artificial intelligence (AI). (Hasdiansa et al., 2024).

In Central Aceh, technology use is not yet evenly distributed. Some schools have adequate facilities to maximize the use of technology in learning, while others have not yet implemented digital technology in the classroom. However, some schools have used technology in their learning but have not yet maximized its implementation. Based on the researcher's observations during the Community Service Program (PKM) activity: "English Speaking Strengthening Class" at a high school in Central Aceh, MAN II, the researcher found uneven use and utilization of technology in teaching and learning activities. This is due to several factors: (1) Not all children have mobile phones or internet facilities for learning (2) Not all children know or understand how to use technology in learning (3) The lack of special training to introduce technology in teaching and learning activities (4) Minimal information and socialization about what digital technologies can be utilized and used in the teaching and learning process.

Meanwhile, the researcher's observations at one school with complete and adequate technological facilities showed that technology has been implemented in learning, especially in English. The applications used are very diverse: from video conferencing applications (Google Meet) to learning support applications (Canva, Quizizz), and even the use of AI chatbot applications designed through the smoj.AI website. Based on the researcher's observations at the two schools, a clear gap and inequality in the application of digital technology in learning across schools in Central Aceh is evident.

Furthermore, brief interviews conducted with 10 students from different schools in Central Aceh revealed that four schools had internet access, while only two of the ten schools used technology in English learning. Based on these findings, it can be concluded that there is an imbalance in the use of technology in learning, particularly English, in Central Aceh.

Furthermore, although several studies have been conducted on technology, its implementation, and its impact on education, there is still very little research on the application of digital technology in relation to English learning (Taopan. et Al., 2023). Therefore, given the importance of technology-enabled English learning and the widespread but uneven use of technology across all schools, particularly in Central Aceh, the researchers were interested in exploring and investigating the views and perspectives of teachers and students regarding this matter.

This study examines teachers' and students' perspectives on the digital transformation of English learning through the use of artificial intelligence (AI) in the form of chatbots. In

addition to providing insight to teachers and students, it is hoped that the results of this study will also contribute to policymakers, educators, application developers, and researchers in improving their understanding of the impact of AI chatbots on English learning.

METHOD

This study employed descriptive qualitative in order to explore teachers' and students' perspectives and experiences in responding to the use of digital technology, particularly Chatbot AI, in English language teaching in Aceh Tengah. This approach was chosen to obtain in-depth and contextualized data regarding how Chatbot AI is implemented in classroom practices and how it is perceived by its users in real educational settings.

Respondents

The respondents of this study consisted of four English teachers and twelve students from three senior high schools in Aceh Tengah, namely MAS Maqamam Mahmuda, MAS Darul Mukhlisin, and MAN II Aceh Tengah. By using purposive sampling, Participants who had experience using Chatbot AI in English learning activities and were willing to participate in interviews were chosen. Teachers and students were involved to provide a comprehensive understanding of the implementation process and its perceived impact from multiple perspectives.

Instruments

The primary instruments used in this study were semi-structured interview guidelines and observation sheets. The interview questions were designed to explore participants' knowledge, experiences, and perceptions related to the use of Chatbot AI in English learning. In addition, observation notes were used to record classroom activities and learning interactions involving Chatbot AI. Documentation related to the use of Chatbot AI was also collected to support the data.

Procedures

The research procedures consisted of four main stages: preparation, data collection, data analysis, and report writing. During the preparation stage, the researcher selected the schools and participants, developed interview instruments, and arranged interview schedules. Data collection was conducted through interviews with teachers and students and classroom observations, with interview sessions recorded to facilitate transcription. The analysis stage involved transcribing and coding the data to identify emerging themes. Finally, the findings were compiled and reported in the form of qualitative analysis.

Data Analysis

Data were analyzed using thematic analysis. The process began with initial coding of interview transcripts and observation notes, followed by grouping the codes into broader categories and themes. These themes were then interpreted to answer the research questions. Descriptive analysis was conducted to explain how Chatbot AI was implemented in English language teaching and to identify its perceived impact based on teachers' and students' perspectives.

FINDINGS AND DISCUSSION

Findings

Utilization of Digital Technology in English Learning in Schools in Central Aceh

Types of Digital Technology in English Learning in Schools in Central Aceh

English learning in schools in Central Aceh has utilized various types of digital technology. The technologies used include learning videos from YouTube, digital dictionary applications, internet-based search engines, and learning material sharing platforms. These digital technologies are used as additional resources in the learning process, by both teachers and students, to support the delivery of material and English comprehension.

"Here we have lab facilities and an infocus" (Data 1, Teacher 1)

"In the lab, we also learn using computers" (Data 2, Student 2)

"Learning with technology is fun, like watching YouTube" (Data 5, Student 9)

"I usually use Transtool. They're a bit lazy with dictionaries, but Transtool is on their phones, so they prefer it. They're happier using it" (Data 1, Teacher 1)

Digital technology is utilized in English learning in a variety of ways. Teachers utilize digital technology to present material, provide examples of language usage, and prepare teaching materials, while students use the technology to search for information, understand vocabulary, and complete assignments.

"Yes, we use it to search for information, because as teachers, we also need to stay updated, so we don't fall behind the current generation," (Data 1, G1)

"We use it to look for assignments, ma'am" (Data 5, S12)

"To do assignments, ma'am" (Data 5, S12)

In addition to school, some students utilize digital technology at home due to the limited availability of devices at school. Using technology at home allows students to access materials, create assignments, and improve their English comprehension independently. This shows that despite limitations, students still strive to utilize technology to support their learning.

"When I'm at home, ma'am, I use my parents' cell phones to study" (Data 3, Student 10)

"If I'm not at home, I can't use ChatGPT at school" (Data 3, Student 10)

AI Chatbots in English Learning

In addition to commonly used digital technologies, AI chatbots have been found to be beginning to be utilized in English learning in several schools in Central Aceh. Furthermore, AI chatbots are used by students as learning aids that can be accessed independently through digital devices. The use of AI chatbots is generally related to students' needs to understand material, look up vocabulary, and obtain quick explanations in English.

"We usually use ChatGPT to do homework" (Data 3, Student 10)

"Yes, we use it to find information so teachers can also stay up-to-date with the current generation" (Data 1, Teacher 1)

Interview results indicate that most students and teachers are familiar with various types of AI chatbots, which are categorized as Open Domain AI chatbots, such as ChatGPT, Blackbox AI, Meta AI, and Gamma AI. In addition, AI chatbots are used for media categorized as Close Domain Chatbots, such as Kahoot, Proprofs, Duolingo, and Quizizz.

"Meta AI, chat gpt, Gemini, black box AI, (Data 1, Student)

"ProProfs. This is an interesting application because answering questions immediately gives students grades and certificates, so they feel happy" (Data 1, Teacher 2)

"We use Duolingo for speaking" (Data 5, Student 11)

"For our application, we usually use Kahoot for quizzes" (Data 3, Teacher 3)

The use of AI chatbots in English learning does not always take place in the classroom, but rather occurs outside of formal learning hours. Several students stated that AI chatbots helped them when they had difficulty understanding the material or completing assignments. Meanwhile, teachers are aware of the existence and use of AI chatbots by students, although the level of utilization in formal learning activities varies. "When I'm at home, I use my parents' cell phone to study." (Data 3, Student 10)

"If I'm not at home, I can't use ChatGPT at school." (Data 3, Student 10)

Teacher and Student Perspectives on the Use of AI Chatbots in English Learning at Schools in Central Aceh

Teacher Perspectives on the Use of AI Chatbots in English Learning at Schools in Central Aceh

The results of the study indicate that teachers have diverse views on the use of AI Chatbots in English learning. Some teachers view AI Chatbots as additional tools that students can use to independently understand the material. Teachers noted that students primarily use AI Chatbots to search for explanations, check grammar, and assist with English assignments.

"Yes, we use them to search for information so that teachers are also up-to-date with the current generation" (Data 1, Teacher 1)

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"I usually use Transtool, they prefer it because it's on their phones" (Data 1, Teacher 1)

Teachers believe that AI can help students complete assignments, understand the material, and broaden their horizons. AI Chatbots can also be an engaging learning tool, for example, for writing practice, translating texts, and providing examples of language usage. However, teachers emphasized that AI does not completely replace the role of teachers, but rather serves as a tool to enhance effective learning. "I can write, but I can't speak with ChatGPT. So, I think there are positives, but the downside is that it's instant." (Data 1, Teacher 2)

"ProProfs is interesting. After answering a question, the grade and certificate are immediately displayed, which makes students happy." (Data 1, Teacher 2)

"Actually, this AI chatbot is good, but sometimes the answers are too high. We can't rely on it. It's helpful, but you can't rely on it completely. You have to look for information in books as well." (Data 3, Teacher 3)

Student Perspectives on the Use of AI Chatbots in English Learning at Schools in Central Aceh
Generating Ideas When Stuck

Students use AI Chatbots as a tool to initiate or develop ideas, especially when they feel stuck. This use is done independently and tailored to each student's needs.

"If I don't know what to write, I ask the AI Chatbot first," (Data 2, Student 1).

Helping to increase knowledge and understanding of school material.

The use of AI chatbots as a learning aid is flexible and tailored to students' needs. Several students stated that the AI chatbot provides easy-to-understand explanations that can be accessed at any time. *"It's good, ma'am. It helps me get information" (Data 4, Student 6)*

"It increases my knowledge. If I don't know something, I can just ask the AI (Data 6, Student 7)

Easy to operate and provides fast responses

Students stated that the AI Chatbot is easy to operate and provides fast responses. This ease of use is one of the reasons they are interested in using AI Chatbots in English learning. Easy access through digital devices allows students to use AI Chatbots without requiring complex technical skills.

"It's easier, and the illustrations make it interesting too" (Data 5, Student 9)

Translating and correcting grammar

Students use the AI Chatbot to translate and correct grammar independently, both before and after completing assignments. The AI Chatbot is considered helpful in correcting language errors and increasing their confidence in speaking English.

"We do assignments, translate, and create PPTs, ma'am (Data 2, Student 1)

"Use Duolingo for speaking" (Data 5, Student 11)

Barriers and Support for the Use of AI Chatbots in English Language Learning in Schools in Central Aceh

Barriers to the Use of AI Chatbots in English Language Learning in Schools in Central Aceh

Limited Facilities Supporting Technology Utilization in the Classroom

Limited supporting facilities are one of the barriers to the use of AI Chatbots in English language learning in schools in Central Aceh. Schools only have internet access in a few locations, and there are limited digital devices that can be used equally by students in the classroom. This situation affects the intensity of digital technology use, including AI Chatbots, in the learning process.

"We have facilities like a lab, but Wi-Fi is still limited to certain locations. We haven't had any training to upgrade our technological knowledge that can be applied in the classroom. We need to socialize technology training." (Data 1, Teacher 1)

These limited facilities mean that the use of AI Chatbots is more common outside of the classroom than in formal learning activities. Students who lack personal devices or adequate internet access struggle to utilize AI Chatbots optimally. "We have our own data packages," (Data 1, Student 3).

In addition to limited facilities, there are also limited teacher and student skills in using technology, especially AI Chatbots. Several teachers stated that they did not fully understand how to utilize AI Chatbots as part of English learning.

On the other hand, student skills in using AI Chatbots also varied. Some students still use AI Chatbots limitedly and do not understand how to utilize them effectively to support learning.

"Yes, ma'am. Chat Gpt doesn't work for speaking" (Data 5, Student 12)

"...We need technology training outreach" (Data 1, Teacher 1)

Support for Using AI Chatbots in English Learning in Schools in Central Aceh

Schools have provided several facilities to support the use of digital technology in English learning, such as computer laboratories, projectors, and internet access at several locations. These facilities provide initial support for teachers and students in integrating technology into the learning process, although they have not yet specifically focused on the use of AI chatbots. "Here we have lab facilities and an infocus" (Data 1, Teacher 1)

"In the lab, we learn using computers and the internet" (Data 2, Student 2)

Teachers provide support by introducing and guiding students in the use of digital technology, including AI chatbots, as additional learning resources. Teachers not only allow the use of AI but also guide students in using AI chatbots wisely, emphasizing the importance of double-checking information from other sources. This support demonstrates the teacher's role as a facilitator in the use of learning technology.

"We can introduce and teach using AI chatbots, but we still encourage them to double-check their textbooks" (Data 4, Teacher 3)

"We ask them to explain again so they understand what they understand" (Data 4, Teacher 3)

The use of digital technology, including learning apps and AI chatbots, provides a more engaging learning experience for students. The use of technology-based media such as videos, interactive quizzes, and AI-based apps makes students more enthusiastic and motivated in participating in English learning. This support is evident in students' positive experiences when learning using technology, which they find enjoyable and not boring. "After watching the video, we were asked to retell it in front of the class." (Data 2, Student 2)

"ProProfs is interesting. After answering the questions, you immediately get your grades in the form of a certificate, which makes the students happy." (Data 1, Teacher 2)

Discussion

AI Chatbots as a Supporting Tool for English Language Learning

Research findings indicate that AI Chatbots are perceived as a supporting tool in English language learning, not as a substitute for teachers or the primary learning resource. Both teachers and students view AI Chatbots as technology that aids the learning process, particularly in searching for information, completing assignments, and understanding English language materials. This is evident in the way students use AI Chatbots to complete academic assignments such as essays and vocabulary searches, as well as in teachers' attitudes, who allow the use of AI with the condition of verification. This aligns with previous research by Corella (2024), which stated that AI Chatbots, such as ChatGPT, complement the role of teachers by personalizing learning and increasing student engagement. However, AI Chatbots do not replace the role of teachers. This is in line with previous research by Tutton and Cohen (2025), which stated that AI Chatbots cannot replace teachers because human-to-human exchange in language classes is crucial for direct human interaction and connectedness in language learning.

In practice, AI Chatbots provide easy access to information and accelerate students' learning process. Students found the AI chatbot helpful because its answers were easy to understand, quickly accessible, and sufficiently detailed. This demonstrates the role of the AI chatbot in supporting independent learning outside the classroom, especially given the limited use of devices in the school environment. This aligns with previous research by Ali et al. (2023), which explained that an AI chatbot supported independent learning and asynchronous self-

assessment outside the classroom, providing a diverse learning approach that increased independence and responsibility in learning.

Teachers in this study emphasized the importance of a critical approach in using the AI chatbot and rejected complete dependence on the technology. Teachers encouraged students to maintain understanding of the material, re-explain their work, and cross-check it with the textbook. This approach demonstrates an effort to maintain a balance between the use of technology and language learning objectives, which emphasize understanding, not just the end result (data points 1 and 2). This aligns with previous research by Agarwal et al. (2024), which stated that AI chatbots do need to be reviewed by students and teachers, not only to ensure the accuracy of the information but also to avoid dependency and a lack of critical thinking skills. Its use offers benefits in increasing learning efficiency and access, but its effectiveness depends heavily on teacher control, student awareness, and integration with conventional learning resources. These findings reinforce the view that AI technology can contribute positively to English learning when used in a targeted and reflective manner, rather than as a quick fix that replaces the learning process itself.

Differences in Teacher and Student Perspectives on the Use of AI Chatbots in English Learning

The use of AI Chatbots in English learning has generated diverse views among users, particularly between teachers and students. These differing perspectives arise as a consequence of the differing roles, responsibilities, and goals in the learning process. For students, technology is viewed as a means to facilitate learning outcomes, while for teachers, technology must remain aligned with pedagogical goals and the development of overall language competency.

From the student perspective, AI Chatbots are considered practical and efficient learning tools. Students use AI Chatbots to complete assignments, translate text, search for information, and assist with writing. The ease of access and speed of obtaining answers make AI Chatbots a primary choice when students encounter difficulties understanding English material. This aligns with research by Syawaudin et al. (2025), which states that AI Chatbots can assist students in understanding complex material.

Furthermore, the concise and easy-to-understand presentation of information increases students' motivation to study independently, especially outside of school hours. This also aligns with the research findings of Hidayatullah (2025) that AI can improve motivation and independent learning.

However, students also demonstrated awareness of the limitations of AI chatbots. Some students noted that the answers they generated were not always accurate and needed to be verified with other sources. This is supported by the findings of Kurniahtunnisa (2025), who stated that students believed AI chatbots provided answers quickly, and the information they generated was often inconsistent and inaccurate. Irrelevant or inaccurate information can confuse students, impacting their understanding of the subject matter. Furthermore, there were concerns about students' dependence on AI chatbots in learning, which could impact academic integrity.

Concerns regarding reliance on instant answers and reduced thought effort have also emerged, although they have not yet become primary considerations in daily use. This indicates that students tend to view AI chatbots as practical tools, not as a complete replacement for conventional learning processes.

Unlike students, teachers view the use of AI chatbots more critically and reflectively. Teachers acknowledge that AI chatbots can assist learning, particularly in supporting specific skills and searching for information. In line with research by Fatimah (2025), AI is seen as capable of helping ease teachers' workloads, from preparing materials and creating questions to enriching learning creativity.

However, teachers are also highly concerned about the risks of overuse, such as decreased conceptual understanding, lack of critical thinking practice, and students' tendency to copy answers without analyzing them. Therefore, teachers emphasize the importance of mentoring, supervision, and instilling a critical attitude in the use of AI chatbots. Fatimah

(2025) also concluded the same in her research that another concern is the emergence of student dependence on AI, which can weaken creativity, critical thinking, and manual literacy skills.

The differing perspectives between teachers and students demonstrate the need for a balanced learning approach when integrating AI chatbots. Students need technology that supports flexible and engaging learning, while teachers play a role as guides to ensure meaningful and responsible use of technology. With proper management, AI chatbots can be an effective learning tool, not only supporting student academic achievement but also supporting the development of critical thinking skills and digital literacy in English learning.

Barriers and Support: Implementing AI Chatbots

The implementation of AI Chatbots in English language learning in schools in Central Aceh still faces several obstacles. One major obstacle is the limited school policy that does not yet permit the use of devices in the classroom. This situation means that the use of AI Chatbots cannot be directly implemented in the learning process, but is instead limited to learning activities outside of school. As a result, the integration of AI Chatbots has not yet become a fully integrated part of the formal learning strategy, but remains a supplementary support that relies on individual student and teacher initiative.

Another obstacle relates to the readiness of human resources, both teachers and students. Teachers recognize that AI Chatbots have the potential to support learning, but there are still concerns regarding students' reliance on instant answers and a decline in critical thinking. Furthermore, differences in students' English proficiency also poses a challenge in implementing AI-based technology. Students with weak basic skills tend to copy the results of AI Chatbots without adequate understanding, requiring teachers to conduct supervision and implement follow-up strategies such as asking students to explain their work. This also aligns with Fatimah's (2025) findings regarding teachers' concerns about their students' dependence on the use of AI chatbots in learning, which can weaken creativity, critical thinking, and manual literacy skills. Furthermore, there is the potential for plagiarism, namely the issue of authenticity of student work when using AI to complete assignments, as well as the issue of personal data security in AI-based platforms.

On the other hand, there is a number of supports that enable the continued use of AI chatbots, despite limitations. Schools have provided basic facilities such as computer labs, projectors, and internet access at certain points to support technology-based learning. Furthermore, students have demonstrated positive attitudes toward the use of digital technology and AI chatbots as learning aids, particularly in completing assignments, understanding material, and seeking additional information. This support demonstrates students' cultural readiness to adapt to technology-based learning.

Furthermore, support also emerges in the form of teachers' awareness of the importance of digital literacy and the need to adapt to technological developments. Teachers do not completely reject the use of AI chatbots, but rather encourage their wise use while still combining conventional learning resources such as textbooks and live classroom explanations. These findings indicate that the successful implementation of AI Chatbots depends not only on the availability of technology, but also on school policies, teacher competencies, and pedagogical approaches that balance technological innovation with English learning objectives.

CONCLUSIONS

This study reveals that digital technologies, particularly AI chatbots, have been employed as supportive tools in English learning in schools in Central Aceh, mainly to facilitate students' comprehension of learning materials and assist them in completing assignments. Teachers perceive AI chatbots as useful supplementary resources; however, they emphasize the need for careful use, including proper monitoring and validation of the information provided. Meanwhile, students tend to show positive responses, largely due to the convenience and speed of accessing information. Despite these advantages, the integration

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of AI chatbots into classroom practices remains limited, influenced by inadequate infrastructure, school regulations restricting device usage, and varying levels of students' English proficiency. These findings highlight the necessity of supportive policies, enhanced digital literacy, and adaptive teaching strategies to ensure the effective and responsible implementation of AI chatbots in English education.

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