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Research Article

The Future of English Language Teaching in *Pesantren*: AI-Driven Personalization and Engagement

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Abstract
This study examines the role of Artificial Intelligence (AI) in English Language Teaching (ELT) at Almuslimun Islamic Boarding School in North Aceh, with a focus on its impact on pedagogy and student learning. Conducted from March to May 2025, the research engaged six English teachers—three from junior high school and three from senior high school—to explore their experiences with AI tools. Using a qualitative approach, data were collected through classroom observations, interviews, and teacher reflection journals, providing insights into how AI enhances ELT. The findings reveal that AI facilitates personalized learning by adapting content to individual student needs, boosts engagement through interactive applications like language-learning chatbots, and improves teaching efficiency via automated assessments and feedback. However, challenges such as limited technological infrastructure, teacher training gaps, and the need to align AI use with Islamic educational values were also identified. The study underscores the potential of AI to transform language education in religious boarding schools while emphasizing the importance of context-sensitive implementation. Practical recommendations are provided to help educators and policymakers integrate AI effectively, ensuring it complements traditional teaching methods without compromising the school's cultural and religious ethos. This research contributes to the broader discussion on AI in education, particularly in faith-based institutions, where the adoption of technology must strike a balance between innovation and institutional values.

Keywords
Artificial Intelligence; Educational Technology; English Language Teaching; Islamic Boarding School; Personalized Learning

Introduction
Artificial Intelligence's (AI) rapid development has significantly changed multiple sectors globally, with the education sector among its most promising frontiers. Among the various areas of educational

innovation, English Language Teaching (ELT) has emerged as a fertile ground for AI integration, offering pathways toward more personalized, efficient, and student-centered instruction.

In recent years, the implementation of AI in ELT has transcended traditional teaching methodologies, shifting from standardized, teacher-led instruction to more adaptive and learner-responsive models. Technologies such as Natural Language Processing (NLP), speech recognition, and intelligent tutoring systems have empowered educators to assess learners' abilities in real-time, diagnose learning gaps, and provide instant, targeted feedback. NLP enables systems to process and understand human language, facilitating grammar checking, vocabulary suggestions, and even conversational practice in chatbots (Zawacki-Richter et al., 2019). These technologies form the basis for adaptive learning platforms, which tailor instructional content and pace based on the learner's performance and needs (Luckin et al., 2016).

Within this context of educational innovation, the present study focuses on the integration of AI-based tools into English language instruction at Almuslimun Islamic Boarding School, located in North Aceh, Indonesia. This institution represents a unique educational setting: a private, religious boarding school (*pesantren*) that upholds Islamic teachings while also providing a comprehensive formal education. Such a setting presents both opportunities and challenges for technology integration, especially when introducing innovations that may originate outside the local religious and cultural framework.

The core objective of the study is twofold: (1) to explore how AI-driven technologies contribute to personalized learning experiences in English language acquisition, and (2) to examine teachers' perceptions, practices, and challenges regarding AI adoption within the religious and pedagogical culture of the *pesantren*. By examining this case, the study contributes to the growing body of research advocating for contextualized and ethical implementation of AI in language education.

Literature Review

Artificial Intelligence in Education

The broad definition of artificial intelligence (AI) is the branch of computer science concerned with building machines that can carry out operations commonly associated with human cognition, such as learning from experience, reasoning through logic, making decisions, and self-correcting errors (Russell et al., 2021) These intelligent systems are designed to replicate or simulate aspects of human thought and behavior, allowing machines to perform tasks that were once believed to be the sole domain of human intelligence.

Within the field of education, and more specifically ELT, AI technologies have introduced a new paradigm in instructional design and learner support. Language instruction and learning have extensively used artificial intelligence, which is revolutionizing the educational landscape (Zhao, 2025). AI-powered tools are now capable of analyzing student inputs, whether in the form of spoken language, written text, or behavioral data, to identify learning patterns, strengths, and areas of difficulty. NLP algorithms, for instance, can process written or spoken language to detect grammatical errors, vocabulary usage, and syntactic structure, enabling real-time correction and targeted feedback (Holmes et al., 2019).

Moreover, AI systems such as intelligent tutoring systems and automated writing evaluators are designed to simulate one-on-one tutoring experiences by offering instant, context-sensitive feedback. According to Heffernan and Heffernan (2014), such systems can dynamically adjust the level of difficulty, type of content, or instructional approach based on the learner's previous responses, effectively creating a personalized learning path. AI is especially helpful in large or mixed-ability classrooms where traditional one-size-fits-all training frequently falls short of meeting individual learning needs due to its limited customization.

In the context of ELT, this means students can engage with AI-enhanced applications such as Grammarly, Write & Improve, or ChatGPT, which provide immediate, actionable feedback on grammar, vocabulary, coherence, and fluency. For speaking and pronunciation, AI tools like ELSA Speak leverage speech recognition to evaluate phonetic accuracy and fluency, offering personalized drills and progress tracking.

The significance of AI in this field lies not only in its automation of assessment but also in its ability to function as a formative learning companion. These tools promote learner autonomy, allowing students to practice outside classroom hours, receive non-judgmental feedback, and learn at their own pace, a crucial factor in language acquisition. Furthermore, they assist educators by reducing the burden of manual grading and enabling more time for higher-order instructional planning and student mentoring.
In summary, AI in ELT goes far beyond mere automation. It represents a paradigm shift toward responsive, data-informed, and personalized language learning, grounded in intelligent systems' ability to simulate key aspects of human teaching and adapt dynamically to learners' evolving needs.

Personalized Learning

Personalized learning is to an educational approach that tailors teaching and learning to each student's unique characteristics, needs, preferences, and learning pace. Rather than relying on a standardized instructional model, personalized learning emphasizes flexibility in content delivery, assessment, and instructional strategy. It supports the notion that learners are diverse in their backgrounds, cognitive styles, motivation levels, and prior knowledge factors, which significantly affect their learning outcomes (Ning et al., 2025).

In traditional classrooms, personalizing instruction for every student is highly challenging due to time constraints, large class sizes, and limited resources. However, the integration of AI into educational contexts has made personalized learning not only feasible but scalable. AI systems are capable of collecting, analyzing, and interpreting large amounts of learner data in real time to deliver adaptive, responsive, and targeted instruction (Zawacki-Richter et al., 2019).

One key way AI facilitates personalized learning is through diagnostic assessments. These AI-powered tools assess learners' baseline knowledge, language proficiency, and cognitive strengths or weaknesses at the beginning of a course or learning session. Based on this diagnostic data, the system can recommend specific content, exercises, or strategies tailored to the learner's starting point (Luckin et al., 2016).

Furthermore, adaptive content delivery is another core AI function that enables educational platforms to dynamically modify the sequence, difficulty level, and format of learning materials based on how students respond. If a student, for instance, struggles with grammatical accuracy, the AI system might generate additional grammar-focused activities, gradually increasing complexity as the learner improves. This real-time customization enhances both engagement and efficiency, ensuring that learners are neither overwhelmed nor under-challenged (Holmes et al., 2019).

Another critical element is predictive analytics, in which AI uses historical and current learning data to forecast future performance or potential learning difficulties. Such insights allow teachers to intervene early and provide proactive support, which is especially valuable in language learning environments where gaps in foundational knowledge (e.g., vocabulary, syntax, pronunciation) can hinder long-term progress.

In the context of ELT, personalized learning through AI can take many forms. Tools like Duolingo or LingQ adjust lesson recommendations based on user performance. Writing platforms such as Grammarly or Write & Improve provide individualized feedback and writing suggestions. Pronunciation apps like ELSA Speak tailor speaking exercises to correct specific phonetic errors. These tools not only provide

differentiated instruction but also give learners greater agency and autonomy, enabling them to self-direct their learning process, a core goal of 21st-century education.

Religious and Cultural Contexts in Technology Integration

In the context of educational institutions with strong religious foundations, such as Islamic boarding schools (*pesantren*) in Indonesia, integrating new and emerging technologies, such as AI presents both unique opportunities and profound challenges. The *pesantren* demonstrates a high level of readiness for English language programs, as reflected in the variety of programs, the contributions of teachers, the availability of facilities, and the overall environment (Mawardi et al., 2024). While AI offers transformative benefits such as personalized learning, data-driven instruction, and automated assessment, it cannot be applied in a culturally neutral or pedagogically detached manner. Instead, successful implementation must involve careful consideration of ethical, pedagogical, and religious values that define the identity of such institutions (Selwyn, 2022).

Religious boarding schools often emphasize not only academic achievement but also spiritual development, moral formation, and adherence to specific religious doctrines and traditions. As such, any technological innovation introduced into this environment must align with the institution's overarching mission, which typically includes the preservation of religious values, the cultivation of character (*akhlak*), and the reinforcement of the Islamic worldview across all aspects of education (Azra, 2000).

Several important issues arise from integrating AI into *pesantren* environments, including ethical, pedagogical, and religious considerations. In ethical considerations, sensitive student data is frequently gathered and analyzed by AI systems, including learning behaviors, language inputs, and performance records. In a religious environment, where issues of privacy, modesty, and moral responsibility are paramount, the use of AI must align with ethical principles grounded in religious teachings. Institutions, for instance, may question the permissibility (*halal/haram*) of certain content or the origin of specific AI tools, particularly those developed in non-Islamic contexts or embedded with cultural assumptions foreign to the school's values.

Moreover, algorithmic bias, where AI systems inadvertently reflect the prejudices or preferences of their creators, poses a risk if not properly monitored. AI-driven language learning platforms that include inappropriate content, cultural insensitivity, or secular ideologies may inadvertently undermine the moral fabric that religious schools strive to maintain (Holmes et al., 2019).

In pedagogical considerations, the role of the teacher in a *pesantren* is not merely to deliver academic knowledge, but also to act as a spiritual guide and role model. Therefore, AI should not replace human interaction but rather support the pedagogical process while preserving the relational and spiritual dimensions of learning. Teachers must be empowered to use AI tools not as substitutes, but as extensions of their professional and religious responsibilities.

Additionally, AI content must be tailored to suit the curricular goals of Islamic education, which may include classical Arabic language, Qur'anic interpretation, and religious jurisprudence (*fiqh*). Implementing AI tools that only cater to Western-centric English learning frameworks could diminish the cultural and linguistic relevance for students in Islamic boarding schools.

In terms of religious considerations, some educators and stakeholders within religious communities express concern that over-reliance on AI could disrupt the divinely guided teacher-student relationship or promote excessive automation that neglects human agency and moral accountability. These concerns highlight the need for sharia-compliant educational technologies and the involvement of religious scholars (*ulama*) in reviewing and approving AI tools before adoption.

AI systems must also respect religious norms in their design and functionality. Applications, for instance, should avoid featuring content or visuals that contradict Islamic teachings (e.g., inappropriate language, music, or images). Language learning platforms should ideally offer Islamic-context vocabulary, examples, and culturally respectful prompts that affirm the students' identity.

In the case of Almuslimun Islamic Boarding School, North Aceh, the integration of AI was approached with deep awareness of these religious and ethical dimensions. Teachers selected AI tools that provided clear educational value without compromising religious principles. They also actively curated content and supervised student use to ensure that the technology served as a tool of empowerment rather than disruption. The school's experience exemplifies how context-sensitive integration of AI can align modern pedagogical advancements with religious mission and values.

The integration of AI into religious educational institutions such as Islamic boarding schools must go beyond technical feasibility. It requires cultural sensitivity, religious alignment, and ethical foresight. School leaders, educators, and policymakers must collaboratively ensure that AI serves the holistic development of learners, academically, morally, and spiritually. As Selwyn (2022) asserts, technology should never be viewed as value-neutral; rather, it must be critically evaluated within the sociocultural context in which it operates.

Method

Research Design

This study employed a qualitative descriptive research design to explore English teachers lived experiences, perceptions, and practices in integrating AI into their teaching of English as a foreign language. Qualitative description is particularly well-suited for studies that aim to capture detailed accounts of participants' viewpoints, daily practices, and contextual challenges, especially in educational settings where complex social and pedagogical interactions are at play (Sandelowski, 2000).

Unlike other forms of qualitative inquiry, such as phenomenology or grounded theory, that focus on deeper philosophical interpretation or theory generation, qualitative descriptive research is pragmatic and content-oriented. It allows researchers to remain close to participants' words and experiences, presenting a comprehensive summary of events or perspectives in everyday terms (Colorafi & Evans, 2016). This approach was chosen specifically because the study's aim was not to theorize the AI integration process but to understand and document how teachers perceive, adapt to, and apply AI tools in their classroom settings.

In this study, the participants were six English teachers (three from junior high school and three from senior high school) at Almuslimun Islamic Boarding School, North Aceh, Indonesia, an institution with both formal academic and religious curricula. The qualitative descriptive method provided a flexible framework for exploring how these teachers, working within a religious and culturally sensitive environment, approached the adoption of AI-assisted language teaching tools such as Grammarly, ELSA Speak, and ChatGPT, and how these tools impacted their pedagogical strategies and classroom interactions.

Semi-structured interviews, in-person classroom observations, and teacher reflection journals were used to gather data. Participants were able to openly discuss their experiences throughout the semi-structured interviews, which also covered important subjects related to the use of AI in ELT. Observations were conducted to triangulate the data and capture real-time practices involving AI tools. Reflection journals, in turn, provided deeper insights into teachers' ongoing thoughts, adjustments, and attitudes toward the integration process over the study period.

The choice of a qualitative descriptive approach was instrumental in preserving the richness and complexity of the teaching context, especially given that the integration of AI in education, particularly in religious boarding schools, is still relatively new and underexplored. This methodology also enabled the researchers to remain faithful to the participants' voices, reflecting the nuances of their experiences without imposing external theoretical frameworks.

Furthermore, this approach adheres to Creswell and Poth (2018), who view that qualitative description is appropriate when the goal is to provide straightforward answers to research questions, such as "What are the teachers doing?" "How are they using AI?" and "What are their perceptions of its impact?" are central to this study.

Setting and Participants

This study was conducted at Almuslimun Islamic Boarding School, located in North Aceh, Indonesia, over three months from March to May 2025. The institution serves as a combined junior and senior high school and functions within the framework of a *pesantren,* a traditional Islamic boarding school. As such, it operates under a dual curriculum model that blends national formal education standards with religious teachings, particularly in Islamic jurisprudence (*fiqh*), Qur'anic studies, and Arabic language instruction. This unique combination provided a distinctive and culturally sensitive context for examining the integration of AI into ELT.

The selection of Almuslimun Islamic Boarding School was based on purposive sampling (Creswell & Poth, 2018), considering the school's openness to technological innovation despite its strong religious foundations. The institution had recently begun experimenting with AI-assisted tools in its English classes, making it an ideal site for investigating real-time, practical experiences of educators engaging with educational technology in a religious setting.

The participants in this study were six English language teachers, representing both educational levels within the school. Totally three English teachers from the junior high school level (Grades 7–9), who primarily taught students aged 12–15, and a total of three English teachers from the senior high school level (Grades 10–12), working with students aged 16–18.

All participants had a minimum of three years of teaching experience and were actively involved in the school's efforts to improve language instruction through technological integration. Their inclusion provided a diverse yet balanced perspective on how AI is being adapted across different age groups and proficiency levels within the same institutional and cultural setting.

The teachers were also selected for their willingness to participate in a collaborative, reflective research process, which included semi-structured interviews, classroom observations, and the maintenance of reflective teaching journals. These instruments were designed to capture nuanced, experiential data regarding the use of AI tools such as Grammarly, ChatGPT, and ELSA Speak, and their perceived effectiveness, challenges, and alignment with both pedagogical goals and religious norms.

The choice to involve both junior and senior high school teachers was critical in understanding the continuum of AI integration across educational stages. It allowed for comparative insights into how AI tools were tailored to meet the different cognitive and linguistic needs of younger versus older students, as well as how teachers modified their strategies based on student maturity and curriculum demands (Miles et al., 2018)

By situating the research within a *pesantren* context, the study contributes valuable knowledge to the growing literature on AI in education, particularly in underrepresented, faith-based institutions, where technology integration must be negotiated within religious, ethical, and cultural frameworks (Selwyn, 2022).

Data Collection Techniques

To achieve a comprehensive understanding of how English teachers integrate AI into their classroom practices, this study employed three primary qualitative data collection methods: semi-structured interviews, classroom observations, and teacher reflection journals. Each of these methods was chosen to capture different dimensions of the participants' experiences, allowing for a rich triangulation of data (Creswell & Poth, 2018; Merriam & Tisdell, 2016).

Semi-structured interviews involve exploring teachers' perceptions and the challenges they face. Semi-structured interviews were conducted with all six participants to investigate their perceptions, attitudes, expectations, and challenges regarding the integration of AI into ELT. This method was selected for its flexibility, allowing the researcher to follow a guided set of open-ended questions while also probing deeper into unexpected yet relevant issues raised by participants (Adams, 2015).

The interviews covered topics such as teachers' familiarity with AI tools, perceived benefits of AI for student learning, practical and ethical concerns (e.g., data privacy, religious compatibility), and institutional support and training availability. Each interview lasted approximately 25–40 minutes and was conducted in a comfortable, semi-private setting to encourage honest and reflective responses. The interviews were audio-recorded and transcribed verbatim, ensuring data accuracy and enabling thematic coding during the analysis phase. This method proved invaluable in uncovering nuanced and subjective insights, particularly about personal beliefs, fears, and contextual obstacles in adopting AI technologies within a religious educational setting.

In addition to self-reported data, direct non-participant classroom observations were conducted to record how AI tools were used during English lessons. This method allowed for the objective documentation of teacher-student interactions, the integration of AI applications, and any pedagogical adjustments made during instruction. Observation protocols were developed to focus on specific indicators, such as the type and frequency of AI tools used, the nature of student engagement and participation, teachers' instructions, scaffolding, and feedback strategies when using AI, and technical or behavioral challenges observed during implementation. These observations provided contextualized evidence to complement and validate the teachers' verbal accounts. As Patton (2015) emphasizes, classroom observation is beneficial for understanding real-time behaviors in natural settings, which may not always be fully articulated in interviews.

Additionally, this study utilizes teacher reflection journals, which serve to capture ongoing experiences and promote professional growth. To gain insights into the evolving experiences of teachers over time, participants were asked to maintain weekly reflective journals throughout the three-month research period (March–May 2025). Reflective journals significantly improved participants' critical thinking, writing skills, and engagement, thereby enhancing metacognition and self-engagement (Draissi et al., 2021).

Teachers were encouraged to write freely about their day-to-day experiences using AI tools, student reactions and learning outcomes, adjustments made in lesson planning or assessment, and reflections on the alignment between AI integration and school values. These written narratives served as a longitudinal data source, highlighting how teachers' understanding, confidence, and pedagogical approaches developed as they experimented with AI. The journals also revealed how contextual and institutional factors such as infrastructure, training, and administrative support shaped the teachers' ability to effectively implement AI in their classrooms. By combining interviews, observations, and journals, this study ensured methodological triangulation, enhancing the credibility and depth of the findings (Denzin, 2012).

AI Tools Used

The integration of AI in ELT at Almuslimun Islamic Boarding School was operationalized through the implementation of several educational technologies designed to support different aspects of language acquisition. These tools were selected based on their capacity to provide real-time, adaptive, and individualized learning experiences, which align with the core principles of personalized learning (Zawacki-Richter et al., 2019). The AI tools used in the classroom included Grammarly, ELSA Speak, ChatGPT, and Kahoot with an AI-powered question generator.

Grammarly is an AI-powered writing assistant that provides real-time feedback on grammar, punctuation, vocabulary usage, and stylistic issues. In this study, Grammarly was used to help students improve their written English proficiency. It was particularly beneficial during essay writing tasks, where students could revise drafts independently before submitting final versions. This aligns with research by Ding & Zou (2024) who found that automated writing evaluation systems like Grammarly, Pigai, and Criterion significantly improve students' writing skills, with both learners and educators showing positive attitudes towards these digital tools.

An AI-based smartphone software called ELSA Speak (English Language Speech Assistant) employs deep learning algorithms and automatic speech recognition (ASR) to help learners pronounce words more correctly. In this study, speaking sessions were supplemented with ELSA, giving students more time outside of class to work on their fluency, intonation, and pronunciation.

ELSA's speech recognition engine provides learners with instant, personalized feedback, indicating which phonemes are mispronounced and offering guided corrections. According to Li and Zhao (2025), AI-powered technologies improve oral communication abilities by enhancing confidence, decreasing fear, and improving fluency; yet, issues like data protection, technical support, and emotional interaction continue to be major adoption difficulties.

ChatGPT, developed by OpenAI, is a generative AI model that can generate human-like text responses based on user input. In the context of this study, ChatGPT was used for two main purposes: (1) vocabulary practice, and (2) writing assistance. For vocabulary, teachers designed prompts in which students interacted with ChatGPT to learn new words in context, request example sentences, or generate synonyms and antonyms. For writing, students used ChatGPT to brainstorm ideas, create outlines, or seek stylistic suggestions for paragraphs they had written. ChatGPT aids language skill development by providing feedback and collaborating with students for practice, enhancing their language skills through recommended activities (Bin-Hady et al., 2023).

Kahoot, a popular gamified learning platform, was enhanced through the integration of AI-powered question generation, enabling teachers to create personalized and adaptive quizzes. The AI generator within Kahoot uses input texts, lesson topics, or curricular standards to suggest question sets tailored to students' learning levels automatically. In this study, Kahoot was used primarily for formative assessment, helping teachers evaluate students' understanding of grammar rules, vocabulary, and reading comprehension in a fun and engaging format. The AI component enabled teachers to save time on quiz creation while ensuring that questions were differentiated based on learner profiles.

Data Analysis Technique

The data analysis in this qualitative descriptive study followed a systematic, content-focused approach aligned with Sandelowski's (2000) framework, which emphasizes staying close to participants' words without imposing external theoretical interpretations. The analysis comprised five iterative stages. First, data organization was conducted by transcribing all semi-structured interviews verbatim, compiling observation field notes, and collecting teacher reflection journals. Second, preliminary coding involved two cycles of coding (Miles et al., 2018). Initial open coding identified discrete meaningful units from

participants' statements, such as "Grammarly helps student autonomy" or "concerns about religious compatibility." Descriptive codes remained close to participants' original language.

Third, thematic development proceeded through pattern aggregation, where similar codes were clustered into broader categories. For instance, codes including "fear of over-reliance" and "concerns about cheating" coalesced under "pedagogical challenges." Categories were reviewed against raw data to ensure faithful representation. Fourth, data triangulation was performed by comparing themes across the three sources—interviews, observations, and journals. This cross-verification identified convergent findings (e.g., ELSA Speak improved pronunciation confidence) and divergent perspectives, which were documented as nuanced variations. Lastly, interpretation and presentation involved writing descriptive summaries using everyday language, supplemented by illustrative quotations. Findings were organized around research questions without extending beyond participants stated experiences. Member checking with six participants confirmed the accuracy of interpretations, enhancing credibility.

Results

Enhanced Personalization and Student Motivation

Respondents in the study consistently observed that the integration of AI tools fostered a more student-centered and individualized learning environment, enabling students to progress at their own pace according to their unique language needs. One of the respondents remarked: “The students are now more confident speaking English, and the app corrects them gently; they also enjoy competing with themselves.”

This sentiment reflects the motivational impact of non-threatening AI feedback, where learners are guided toward improvement privately and respectfully. By collaborating with AI technology, teachers can develop their knowledge and spark students' interest while also preparing them for the future (Hajar et al., 2025). Incorporating AI chatbots into EFL classroom activities can enhance students' enjoyment, perceived value, and stress reduction, while maintaining competence and effort (Zhang et al., 2025). Such autonomy and safe practice environments are especially beneficial in religiously conservative or high-context cultures, where public errors may lead to social discomfort or decreased participation (Oxford, 2016)

Furthermore, the self-paced nature of AI-supported tools like ELSA Speak and Grammarly allowed teachers to manage heterogeneous classrooms more effectively, ensuring that advanced learners could continue to be challenged while struggling learners received the repetition and reinforcement they required. This mirrors findings by Holmes et al. (2019), who argue that adaptive technologies can bridge achievement gaps by offering just-in-time feedback and practice tailored to individual learners’ progress. AI tools have the potential to drastically change education by improving learning opportunities and better preparing students for their future employment (Córdova et al., 2024).

The integration of AI thus not only enhanced students' linguistic skills but also nurtured their self-efficacy, a critical affective factor in second language learning (Ushioda, 2011). Riser (2025) also found that collaborative evaluation of AI-generated text enhances learners' autonomy, while teachers serve as ethical facilitators by promoting transparency, accountability, and reflective dialogue. As students gained confidence through personalized feedback and self-directed learning opportunities, teachers noted an increase in oral participation, risk-taking, and positive attitudes toward English learning in the classroom.

Teacher Perspectives on AI Integration

All six respondents participating in the study, expressed a shared sense of enthusiasm regarding the potential of AI in enhancing English language instruction. One of respondents noted: “AI tools are valuable assets for providing personalized feedback, diversifying learning activities, and increasing student motivation.”

However, despite this positive outlook, the teachers also reported varying levels of digital literacy, which significantly influenced the depth and confidence of their AI tool implementation. A respondent in junior high school reported: “We concern some challenges such as limited time to explore and integrate new technology, as well as unfamiliarity with AI platforms like ChatGPT or ELSA Speak.” These teachers expressed apprehension about disrupting the flow of traditional lesson planning and classroom routines, aligning with previous research that identifies technological self-efficacy and institutional support as key factors in teachers' adoption of educational technology (Tondeur et al., 2017)

Despite these initial hesitations, the study found that professional collaboration among teachers played a crucial role in bridging the digital literacy gap. A respondent in junior high school reported: “senior high school teachers who had greater exposure to digital tools often mentored their junior high colleagues, sharing best practices, demonstrating tool functions, and co-planning lessons that incorporated AI features.” This aligns with the findings of Vangrieken et al. (2017) who emphasized that collaborative professional learning communities foster innovation, mutual support, and reflective teaching practice.

The collaboration was also facilitated by the school's supportive culture, which encouraged knowledge sharing while respecting the religious values embedded in its instructional approach. This peer-driven support system contributed to greater confidence among less digitally fluent teachers, helping them gradually transition from passive observers to active users of AI-enhanced pedagogy. As Fullan (2016) notes, meaningful educational change often emerges from collective teacher agency rather than top-down mandates, and this case exemplified that process.

Ultimately, the study suggests that ongoing professional development, mentorship, and collegial dialogue are essential to overcoming barriers to AI adoption, especially in culturally sensitive and resource-conscious educational environments like Almuslimun Islamic Boarding School. It is in line with Aguilar-Cruz and Salas-Pilco (2025) who reported that AI benefits teachers by providing virtual assistance, but challenges include limited knowledge, lack of resources, and concerns about hindering critical thinking and problem-solving skills. Outamgharte et al. (2025) also indicates that while participants generally appreciate the use of teacher artificial intelligence (TAC) in reflective practice, they also express concerns about the importance of human interaction.

Although AI is capable of presenting language material quickly and in a structured manner, the role of humans remains crucial in guiding cultural understanding, assessing linguistic creativity, and ensuring that learning remains relevant to real-world needs. Human guidance in the use of AI for language learning is essential because humans can provide contextual feedback, more nuanced corrections, and emotional motivation that machines lack.

Cultural and Ethical Considerations

In the early stages of implementing AI tools in ELT at *Almuslimun Islamic Boarding School*, some teachers expressed initial concern regarding the origins and content of AI technologies, particularly those developed in non-Islamic or secular cultural contexts. This hesitation stemmed from a broader awareness that digital tools—especially those powered by machine learning and large language models—may reflect values, assumptions, or worldviews that do not always align with the school’s Islamic educational philosophy (Selwyn, 2022).

One of respondents in senior high school asserted: "*Pesantren* feared that unfiltered or culturally insensitive content could inadvertently enter the classroom through AI-generated suggestions or examples, potentially clashing with the *pesantren*'s religious principles and the broader mission of nurturing moral character alongside academic excellence." *Pesantren* students exhibit positive character traits like respect, frugality, criticality, discipline, and protection from bad habits, shaped by academic, emotional, attitudinal, and spiritual education (Zulkhairi & Hajar, 2023b).

This concern mirrors findings from Mahboob and Elyas (2014), who argue that educational tools and materials used in Islamic settings must be carefully scrutinized to ensure alignment with both language learning objectives and religious-cultural appropriateness. Moreover, in addition to students' character, the religious attitudes of the community in terms of *aqidah, ibadah*, morals, and social practices had been influenced by the *Jawi* script education procedure provided by the *pesantren* community (Zulkhairi & Hajar, 2023a).

Although the *pesantren* is self-sufficient, rather than rejecting the technology altogether, the educators at Almuslimun adopted a context-sensitive approach to integration. A respondent in senior high school reported: "by selecting AI tools with neutral, customizable, and educationally aligned features, such as Grammarly for grammar correction, ELSA Speak for pronunciation practice, and Kahoot with teacher-curated content, the teachers were able to harness the benefits of AI without compromising their institutional values. These tools allowed for teacher control over input and content, which was critical for ensuring that classroom materials remained respectful and appropriate."

Teachers also emphasized the importance of human oversight, recognizing that AI tools are not autonomous instructors but support mechanisms that require critical selection and purposeful application. This perspective is consistent with Martínez-Ariño and Teinturier (2019) who asserted that faith-based schools need to focus on strengthening religious and intercultural education, promoting dialogue between communities and values, and enhancing religious education or multicultural values, fostering civic-religious engagement. For effective mitigation, the implementation of AI-based systems such as ChatGPT also necessitates thorough consideration of ethical, dependability, accuracy, and legal problems (Alanezi, 2024).

Ultimately, the process of carefully curating AI tools and adapting them within the moral framework of Islamic education not only addressed initial apprehensions but also provided a model for how modern technology can be ethically integrated into traditional learning environments. This finding contributes to broader discussions about culturally responsive edtech adoption and underscores the importance of maintaining religious and ethical integrity in digital innovation.

Challenges

While the integration of AI tools in ELT at *Almuslimun Islamic Boarding School* demonstrated promising outcomes, the process was not without significant challenges. Teachers identified several key obstacles that hindered the consistent and equitable use of AI in classroom instruction. "One of the most pressing issues was limited internet connectivity in some classrooms," said a respondent. Other respondents from junior high school reported: "Like many AI-powered applications, including ELSA Speak and ChatGPT, which require stable internet access for real-time processing and interaction, inconsistent connectivity disrupts the flow of lessons and constrains the full utilization of these tools." This aligns with prior findings by Hajar et al. (2025), who found that the implementation of educational technology in rural areas faces numerous challenges, including infrastructure and connectivity issues.

Secondly, teachers reported a lack of formal training in AI integration. A respondent noted: "although most teachers were open to adopting new technologies, their unfamiliarity with the pedagogical underpinnings of AI-based tools limited their ability to fully align these innovations with curriculum

objectives and student needs." After completing training and self-directed education, even teachers in rural areas can use technology to enhance the educational process (Hajar et al., 2025). Without structured professional development, teachers often relied on trial-and-error approaches, which slowed implementation and occasionally led to frustration or misuse.

A third significant challenge was students' unequal access to digital devices, such as smartphones, tablets, or laptops. "While some students owned personal devices, others either lacked them altogether or had to share with siblings," said a respondent. This digital divide created disparities in students' ability to engage with AI tools outside of class hours or complete AI-assisted tasks. As Selwyn (2022) points out, such technological inequities risk exacerbating existing educational inequalities, especially in environments where students come from diverse socioeconomic backgrounds.

Collectively, these challenges underline the importance of infrastructure development, targeted teacher training, and inclusive access policies as prerequisites for successful AI integration in education. Addressing these barriers will require strategic planning at the institutional level, including investments in digital infrastructure, mobile-friendly learning environments, and capacity-building initiatives to ensure that both educators and learners can meaningfully benefit from AI-enhanced instruction.

Impacts on Teaching Practices

One of the most widely acknowledged benefits among teachers at *Almuslimun Islamic Boarding School* was the use of AI to reduce the workload associated with grading and providing feedback, particularly in writing and pronunciation exercises. Traditionally, evaluating grammar, coherence, vocabulary use, and pronunciation accuracy in English assignments demanded substantial teacher time and effort, especially in classrooms with large student numbers. However, with the integration of AI tools such as Grammarly and ELSA Speak, teachers reported that many routine evaluative tasks were automated, allowing them to redirect their energy toward more meaningful instructional practices.

Grammarly, for example, was used to provide real-time, personalized feedback on grammar, punctuation, and word choice. This enabled students to self-correct and revise their writing before submission, significantly reducing the burden on teachers to mark every mechanical error. Similarly, ELSA Speak offered instant pronunciation feedback, helping students improve their speaking fluency independently. These tools reflect the broader capability of AI to act as an intelligent tutoring system, facilitating formative assessment and immediate scaffolding (Heffernan & Heffernan, 2014; Holmes et al., 2019).

As a result, teachers could focus more on student mentoring, guiding learners through higher-order language skills, such as argumentation, critical thinking, and discourse-based communication. They also reported having more time for discussion-based learning, peer review sessions, and collaborative speaking activities. This shift from repetitive grading to interactive, human-centered instruction aligns with Luckin et al. (2016) who emphasize AI's potential to free teachers from routine tasks and enhance their roles as facilitators and mentors in the learning process. The findings are in line with Wu and Huang (2025) who found that digital transformation greatly improves the quality of college English instruction in terms of hard skills, soft skills, and subject-specific knowledge.

Furthermore, by reducing cognitive overload and administrative strain, AI tools contributed to greater teacher satisfaction and well-being, reinforcing their motivation to innovate and experiment with student-centered pedagogies. Generative AI chatbots can improve language skills, provide diverse learning materials, and promote equity in foreign language learning, but concerns about plagiarism and cognitive effects persist (Hınız, 2024). This illustrates that, when thoughtfully integrated, AI not only enhances student learning outcomes but also supports teacher professionalism and pedagogical growth.

Conclusion

This study affirms that the integration of AI in ELT can significantly enhance personalized learning and student engagement, even in educational environments traditionally perceived as conservative or resistant to rapid technological change. The experience at *Almuslimun Islamic Boarding School*, a *pesantren* that combines formal education with Islamic values, illustrates that AI-powered tools, when carefully selected and contextually adapted, can offer pedagogical advantages without compromising cultural or religious integrity.

Teachers consistently reported that AI applications such as Grammarly, ELSA Speak, ChatGPT, and Kahoot with AI-generated quizzes allowed for differentiated instruction, where students could learn at their own pace, receive instant feedback, and engage more deeply with language content. In terms of instructional practice, teachers noted that AI reduced the burden of grading and administrative tasks, allowing them to focus on student mentoring, discourse-based instruction, and more interactive classroom strategies. However, the study also reveals ongoing challenges, particularly regarding infrastructural limitations (e.g., unreliable internet connectivity) and unequal access to devices among students. Additionally, insufficient formal training in AI pedagogy left some teachers hesitant or underprepared, particularly at the junior high school level.

Despite these challenges, the case of Almuslimun Islamic Boarding School demonstrates that, with institutional support, careful planning, and ethical sensitivity, AI can be effectively integrated into diverse educational settings, including those with strong religious traditions. This reinforces the growing consensus that AI is not inherently incompatible with faith-based or traditional education, but rather, its impact depends on how thoughtfully it is aligned with pedagogical goals and cultural values.

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