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Conversational AI for Santripreneurs: Enhancing Business Communication Skills in an Informal-Religious Educational Context

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Abstract: Conversational AI for Santripreneurs: Enhancing Business Communication Skills in an Informal-Religious Educational Context. **Objectives:** This paper evaluates the effectiveness of a chatbot-assisted training program in enhancing business communication among young entrepreneurs in Islamic boarding schools (*pesantren*), referred to as "santripreneurs." While santripreneurs possess strong religious and entrepreneurial values, they face challenges with formal communication tasks, such as email, product promotion, and customer replies. **Methods:** A quasi-experimental design was employed, and 60 entrepreneurs were purposively selected and assigned to either the experimental or control group. The experimental group received chatbot-assisted training, whereas the control group used classical methods, including textbooks and written exercises. Both groups had undergone pre- and post-tests that assessed clarity, professional tone, accuracy in grammar, format, and audience awareness. The usefulness, ease of use, and confidence were determined through a perception survey. The treatment lasted three weeks and consisted of daily 30-minute sessions. Paired-sample t-tests and ANCOVA were used to analyze the data. **Findings:** The experimental group showed significantly higher post-test scores than the control group ($p < 0.001$). Their mean improvement was +18.8 points compared to +8.4 in the control group. The strongest gains were observed in professional tone (+22%) and grammar accuracy (+21%), indicating that chatbot feedback was particularly effective in helping learners write formally and avoid errors. Perception data further supported these results: learners gave mean ratings above 4.5 out of 5, with the highest score ($M = 4.7$) for "the chatbot assisted me in building my communication skills." These findings demonstrate that chatbots functioned as interactive learning companions, not merely as digital tools. **Conclusion:** Chatbot-assisted training is an efficient method for developing business communication skills among santripreneurs in informal and religious contexts. In practice, it is a relatively easy and culturally flexible method of supporting young entrepreneurs in areas where formal education is scarce. By integrating AI into *pesantren*, teachers will be able to cultivate an inclusive training environment that fosters entrepreneurship, preparing their students to engage more confidently in digital business environments. Educators can foster inclusive entrepreneurship education, equipping learners with skills to participate more confidently in digital business contexts.

Keywords: chatbot, business communication, santripreneur, digital learning.

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INTRODUCTION

Over the past few years, Artificial Intelligence (AI) has emerged as a significant player in both education and business. One type of AI, chatbots, known as conversational AI, has become a valuable tool to help people learn in a more personal, interactive, and flexible manner (Elragal et al., 2024; Belda-Medina & Calvo-Ferrer, 2022). In business education, chatbots are often utilized to practice real-life communication, provide quick feedback, and assist students in improving their soft skills, particularly in writing and speaking for business purposes (Alafnan et al., 2023; Zhang, 2025). This illustrates a growing global trend in which AI is being utilized to make learning more accessible, flexible, and tailored to diverse needs and situations.

Along with changes happening around the world, a notable trend is emerging in Southeast Asia, particularly in Indonesia. In Islamic boarding schools (*pesantren*), many young people are starting their own small businesses (Naimah et al., 2020). These young entrepreneurs are called santripreneurs who combine strong religious values with a desire to run businesses. However, even though they are passionate and have great potential, many of them struggle with one big challenge: limited communication skills for business purposes. For example, they struggle to write business proposals, send formal emails, communicate with suppliers, or promote their products online. While they receive good religious and moral education in *pesantren*, they often lack formal training in how to communicate effectively in business, especially when using digital tools (Asri, 2022).

This situation has created a serious problem. As the world becomes more connected and businesses rely more on digital communication, santripreneurs who cannot speak or write clearly and professionally are left behind. For example, a preliminary observation of three *pesantren* in East Java revealed that many santripreneurs admitted to frequently losing potential clients because their email responses were too informal or confusing. Others said they felt apprehensive when bargaining with outside vendors over pricing because they were unsure of how to use formal business language. These early findings indicate both a lack of confidence and skills, which block their ability to grow their businesses. The problem is even worse because most training in communication is general, relying only on written texts, and does not align with the real-life situations that young entrepreneurs encounter. Therefore, there is a strong need to find new and creative training methods to help santripreneurs improve their communication skills, a method that fits both their culture and their use of technology. This study focuses on a targeted training intervention, distinct from formal curriculum-based learning, to address these specific practical challenges.

Numerous studies have shown that chatbots can help individuals improve their communication and language skills. For example, Huang et al. (2022) and Zhang and Huang (2024) found that chatbots help students feel more engaged and less nervous when learning a second language. Saiz-Manzanares et al. (2023) and Neo et al. (2022) stated that chatbots enhance student satisfaction and foster more active learning in online education. Kétyi et al. (2024) and Guo et al. (2023) demonstrated that chatbots can aid students in practicing the expression and justification of their opinions in business classes. Romadhon (2024) and Duong and Chen (2025) investigated how chatbots can be utilized to practice writing emails in a work environment. Additionally, Jaton (2024) and Mumtaz et al. (2024) emphasizes the importance of aligning AI tools with local values and cultural traditions when integrating them into diverse educational settings. Taken together, these studies demonstrate that chatbots are beneficial in various settings, including language learning, business communication, online education, and workplace training. Not only do

they assist students in becoming more confident and active learners, but they also in understand why AI use is necessary according to cultural standards. In a nutshell, chatbots are becoming key learning collaborators that develop both professionalism and cultural sensitivity, and are no longer just mere practice support tools.

Numerous studies have demonstrated the effectiveness of chatbots in schools and companies. However, few studies have investigated how chatbots can be utilized in informal or religious training contexts. For instance, there remains a lack of research on how chatbots can enhance business communication skills among young entrepreneurs from Islamic boarding schools. These students, often referred to as santripreneurs, play a crucial role in Indonesia's emerging business landscape; nevertheless, they are frequently overlooked in academic studies. It has been found that chatbots can be used in business education, encompassing business English classes (Kétyi et al., 2024; Klimova & Seraj, 2023), international business communication training (Zadorozhnyy & Lai, 2023), and management education (Zhang, 2022). Based on these studies, chatbots can be employed to guide learners in practicing negotiation, presentation, and professional writing.

Such findings, however, cannot be directly applied to *pesantren* training environments since the context in *pesantren* is dissimilar to that in formal business schools. *Pesantren* education is less formal, value-based, and closely tied to religion and local culture. Consequently, further research is needed to understand how chatbots can be effectively utilized in such a unique learning environment. To fill this gap, this study examined how well conversational AI (chatbots) can improve business communication skills for santripreneurs. It especially focuses on whether chatbot training can help them improve in specific areas, such as writing clarity, tone, grammar, and audience awareness. Additionally, the study examines learners' perceptions of using chatbots, specifically whether they find them useful and easy to use. By focusing on a group that is rich in culture but has limited access to digital training tools, this research adds to the growing interest in the use of AI in education. It gives practical ideas for supporting young entrepreneurs through technology.

According to the gaps identified in the literature, this current study addresses the following question: Can the use of chatbots enhance the business communication skills of santripreneurs more effectively than conventional approaches? In addition, what do santripreneurs think about the usefulness and ease of use of chatbots as training tools in their distinctive, informal, and religious environment? These questions lead the study in investigating both the effectiveness and the feasibility of chatbot-aided learning in *pesantren*.

METHOD

Participants

This study involved 60 santripreneurs aged 18 to 22 from three Islamic boarding schools (*pesantren*) in East Java, Indonesia. The population consisted of *pesantren* students who were also actively engaged in small business activities, such as managing canteen shops, running online sales, or joining entrepreneurship training. A purposive sampling technique was used to ensure that all participants had prior exposure to business practices. The inclusion criteria required that participants be *pesantren* students aged 18–22 years old with at least one year of experience in business, such as managing a small shop, participating in an entrepreneurship program, or conducting online sales. Students without business experience or those unable to commit to daily sessions over the three-week intervention were excluded. Participants were then divided into two groups: 30 students in the experimental group and 30 in the control group.

Research Design and Procedures

The study employed a quasi-experimental design with a pre-test and post-test control group. Random assignment was not feasible in the *pesantren* environment; thus, potential threats to validity, such as initial ability differences, were managed by covarying with pre-test scores and using comparable tasks for both groups. The intervention lasted three weeks, comprising a total of ten sessions. The experimental group received chatbot-assisted training on business communication, interacting with a chatbot powered by the OpenAI GPT-4 model (March 2024 version). Activities included writing professional emails, addressing customer inquiries, and preparing product promotions, with the chatbot providing real-time feedback on clarity, tone, grammar, and structure. The control group addressed the same topics using traditional methods, including group discussions and writing tasks from textbooks, with instructor feedback provided at the end of each session. Both groups spent equal time in training, ensuring that the instructional method was the only variable that differed between them.

The learning scenarios and dialogues were designed by two business communication lecturers and an instructional designer to align with course outcomes. Activities included responding to business emails, customer inquiries, marketing texts, and addressing complaints. For example, in one task, the chatbot prompted: *"You are a customer service officer. A customer complains that his order has been delayed. Write a polite and professional email response that acknowledges the issue and offers a solution."* The chatbot allowed iterative improvement by offering immediate feedback on tone, clarity, grammar, and structure.

Instruments

Two instruments were employed: performance tests and a perception questionnaire. The performance test used a scoring rubric to evaluate participants' written business communication before and after the intervention. The rubric covered five criteria: (1) organization and logical coherence, (2) professional tone and appropriateness, (3) grammatical accuracy, (4) formatting conventions, and (5) audience consideration. Each criterion was scored on a 1–5 scale, where 1 indicated poor and 5 excellent mastery. The rubric was validated by three applied linguists and business communication experts. Two independent raters scored the tasks, and inter-rater reliability was confirmed using Cohen's Kappa.

Additionally, a 9-item questionnaire using a 5-point Likert scale assessed participants' perceptions of the chatbot's usefulness, ease of use, and learning support. Items included statements such as *"The chatbot was easy to use," "The chatbot feedback helped me improve my writing,"* and *"I feel more confident in writing business emails after using the chatbot."* The instrument demonstrated high reliability, with a Cronbach's Alpha of 0. 89.

Data Analysis

Data analysis was conducted using SPSS version 26. Descriptive statistics were first used to summarize results. A paired-samples t-test assessed within-group improvements from pre-test to post-test. ANCOVA was then employed to compare post-test results between groups while controlling for pre-test scores, thus determining whether group differences were statistically significant beyond chance. A significance threshold of $p < 0.05$ was applied.

Ethical Considerations

Prior to the study, all participants signed consent forms after being provided with clear explanations of the study's objectives. Participation was voluntary, and participants could withdraw at any time without penalty. To ensure confidentiality, personal information and

names were anonymized, and codes were used in place of actual names. Chatbot conversation logs were stored securely and used solely for research purposes, with no disclosure of participant identities to third parties.

RESULT AND DISCUSSION

This section presents the research results using numbers and data. It explains how much santripreneurs improved their business communication skills after using chatbot-based training, compared to another group that learned through traditional methods. A total of 60 participants took both the pre-test and the post-test. Their communication skills were evaluated based on five areas: the clarity and organization of their writing, the professionalism of their tone, the accuracy of their grammar, their adherence to the correct format, and their understanding of the intended audience.

Table 1. Descriptive statistics of pre-test and post-test scores

Group	N	Pre-Test Mean (SD)	Post-Test Mean (SD)	Mean Gain
Experimental	30	62.4 (±5.8)	81.2 (±6.1)	+18.8
Control	30	61.9 (±6.3)	70.3 (±5.9)	+8.4

Table 1 shows that students using the chatbot outperformed those who learned with traditional methods. On average, the experimental group improved by 18.8 points, while the control group improved by 8.4 points. This suggests the chatbot helped learners develop communication skills. Feedback supports this, as participants gave the chatbot a high average rating of 4.6. Many described it as more than a digital tool, calling it a learning companion. The highest score, 4.7, was for the statement, "The chatbot assisted me in building my communication skills," which shows that most participants felt it helped them write and express themselves more effectively in a business setting.

These results are consistent with previous studies. For example, Winkler and Söllner (2018) found that chatbots can improve user satisfaction and motivation in online courses. Moreover, Alafnan et al. (2023) found that the use of chatbots can enhance learners' ability to write professional emails. Similarly to those studies, the santripreneurs involved in this study found the chatbot useful because it provided them with timely feedback and also gave them confidence. Nonetheless, those results are contrary to earlier research, which aimed at a corporate or academic background, where the application of chatbots in informal and religious environments, such as pesantren, is highlighted, despite limited access to professional training and computer technology.

In this way, the statistical improvements presented in Table 1 are not only numbers but also actual changes in learners' experiences. Combining quantitative benefits with qualitative feedback demonstrates that chatbot-based learning can be both effective and culturally relevant.

A paired-sample t-test was used to compare the average scores of each group before and after the training. As shown in Table 2, both groups demonstrated clear improvement; however, the group that utilized the chatbot showed a more significant improvement than the group that used regular methods.

Table 2. Paired samples t-test results (within-group comparisons)

Group	t-value	df	p-value	Interpretation
Experimental	13.27	29	< 0.001	Significant
Control	06.01	29	< 0.001	Significant

To assess the effectiveness of the chatbot intervention, the researchers employed a method called ANCOVA. This method compared the final test scores of the two groups while also considering their starting scores. The results (shown in Table 3) show a clear and meaningful difference between the two groups, with the chatbot group scoring higher than the group that used regular learning methods ($p < 0.001$).

The results (presented in Table 3) indicate a significant difference between the two groups, with the chatbot group scoring higher than the one using standard learning methods ($p < 0.001$). We have also determined the effect size in terms of partial eta squared (ç²) to gain a better insight into how strong this impact is. The coefficient stood at 0.28, which is a significant effect according to Cohen's guidelines (1988). This means that chatbot use accounted for 28% of the variation in post-test scores, even after accounting for differences in pre-test scores. In practical terms, this suggests that the intervention had a strong and meaningful effect, not only statistically significant but also highly relevant for real learning contexts. This suggests that chatbots have the potential to improve learning outcomes more effectively than traditional approaches.

Table 3. ANCOVA results (post-test as dependent variable, pre-test as covariate)

Source	SS	Df	MS	F	p-value
Group (Treatment)	872.45.00	1	872.45.00	0.936806	< 0.001
Pre-Test (Covariate)	243.21.00	1	243.21.00	06.10	0.016
Error	2287.62	57	40.12.00		

To better understand the results, we examined which aspects of communication improved significantly in the group that used the chatbot. As shown in Figure 1, the most significant i3,s\ 0mprovements were observed in using a professional tone (22% increase), correct grammar (21% increase), and writing that is clear and organized (18% increase).

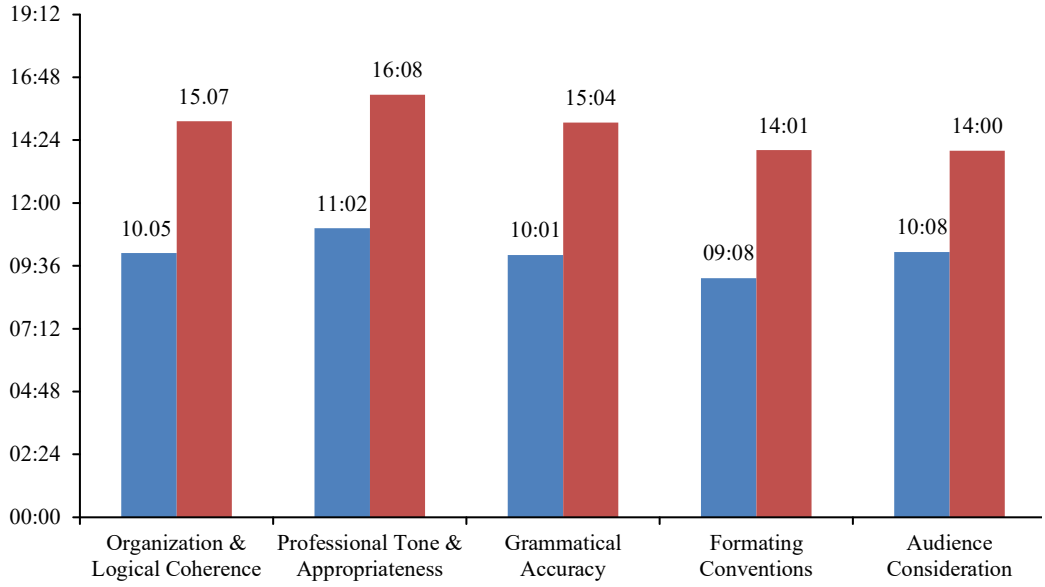

Figure 1. Component-wise improvement in business communication skills (experimental group)

The findings indicate that the business communication skills of santripreneurs were greatly enhanced through learning with the assistance of a chatbot compared to traditional learning techniques. The chatbot group averaged an increase of 18.8 points, whereas the group that used traditional methods increased by 8.4 points. The ANCOVA test also demonstrated that this difference was not due to chance but was real, even after considering the students' starting scores.

The most significant change was the use of a professional tone; the chatbot assisted participants in learning how to use formal language and the appropriate words in business contexts. The fact that grammar and writing clarity improved also indicates that the immediate feedback provided by the chatbot enabled learners to correct their errors and refine their writing gradually. These findings suggest that conversational AI, such as chatbots, can be an effective means of developing communication skills when applied appropriately, particularly among young entrepreneurs who study in religious schools or informal environments.

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The most significant change was the use of a professional tone, with an improvement of 22%. This is not surprising in the santripreneur context. The santripreneurs commonly speak and write in familiar and colloquial styles that are a by-product of everyday life in the *pesantren*. The language used in this environment should be polite and respectful, although it may differ from that required in a business setting. The chatbot also provided the students with clear and organized instructions on how to write polite, formal, and professional sentences. This observation is consistent with the results of Romadhon (2024) and Zadorozhnyy and Lai (2023), who found that chatbots can help learners develop better-structured and accurate business emails. This was also the case in the current research, as the santripreneurs enjoyed consistent exposure to professional tone that they did not receive in traditional lessons.

There was a substantial improvement in grammar accuracy (21%) and format and structure (21.5%). To some degree, one can attribute this to the origins of the santripreneurs. Since most respondents had little formal instruction in business writing, their grammatical structure was often influenced by informal speech or colloquialisms. The corrective and explanatory feedback provided by the chatbot helped bring about a gradual shift in more accurate grammatical usage. This observation aligns with the findings of Shin et al. (2024) and Anbananthen et al. (2022), which suggest that chatbots can correct word usage and grammar, as well as model polite and professional business language. In the case of the santripreneurs, the value of such real-time support was exceptionally high, since these practical business competencies are not highly emphasised in traditional *pesantren* education.

The fact that writing clarity and professional tone have been improved in the study is comparable to the studies by Romadhon (2024) and Zadorozhnyy and Lai (2023), which demonstrated that chatbots can assist learners in writing more structured and proper emails in work contexts. Santripreneurs also benefited in the same manner in this study. The chatbot provided them with instant feedback, not just in correcting grammar and word selection, but also in showing how they could apply polite and professional business vocabulary (Shin et al., 2024). These are important skills that are not typically taught in most traditional *pesantren* (Islamic boarding schools), where there is a

greater emphasis on religious studies than on applied business communication.

These results suggest that conversational AI, such as chatbots, can be an effective means of developing communication skills when applied appropriately, particularly among young entrepreneurs who study in religious schools or informal environments. The unique context of santripreneurs played a significant role in this regard. Since they began with less familiarity with the conventions of business communication, the improvement of professional intonation and grammar was particularly notable. This suggests that contextual factors, such as educational background and cultural context, can significantly influence the learning process and the development of specific skills.

To assess perceptions of the chatbot-mediated training environment, all participants completed a brief questionnaire. They provided feedback on the chatbot's utility, accessibility, pedagogical effectiveness, and any increase in their confidence in business communication. As shown in Figure 2, most users reported a positive attitude, rating the chatbot highly for usefulness, ease of use, and quality of feedback.

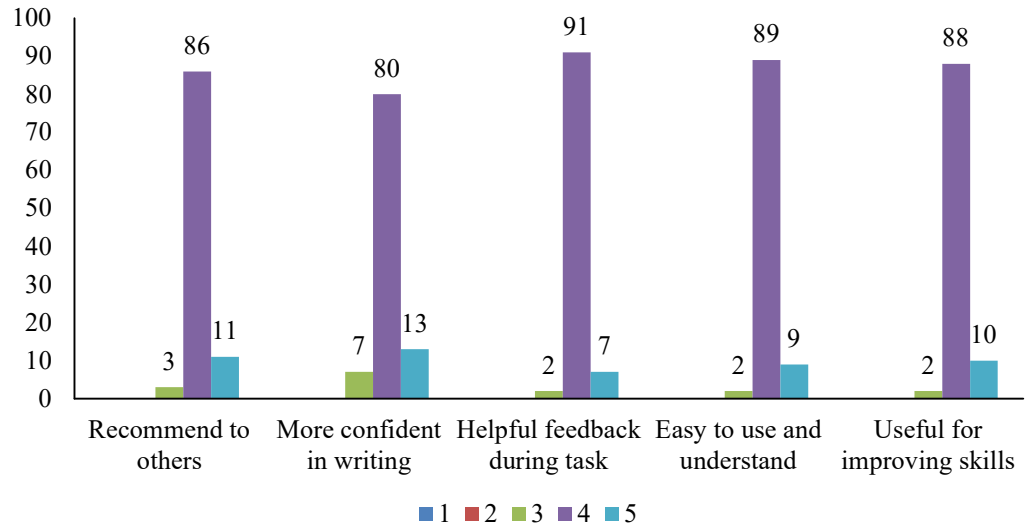

Figure 2. Participants' perceptions of the chatbot-based training tool (n = 30)

As seen in Figure 2, participants had a very favorable opinion of the chatbot-based learning platform. The vast majority of respondents agreed with all statements. For instance, 86% of respondents strongly agreed and 11% agreed that they would suggest the chatbot to others, demonstrating a very high level of endorsement. Similarly, 80% of respondents strongly agreed that the chatbot increased their writing confidence, while 13% agreed, indicating that the program successfully aided the development of their writing skills. The growth of self-assurance in professional communication. Positive perceptions were also evident regarding the chatbot's feedback; 91% strongly agreed that it was beneficial during assignments, and an additional 7% agreed. Ease of use was confirmed by 89% who strongly agreed and 9% who agreed that the chatbot was simple to operate and understand, which is particularly important for beginners. In terms of skill improvement, 88% strongly agreed and 10% agreed that the chatbot helped them enhance their communication skills.

Overall, these distributions demonstrate that more than four-fifths of participants consistently chose the highest category of agreement. This pattern not only reflects high levels of satisfaction but also highlights the chatbot's usability,

effectiveness, and potential as a reliable learning tool for santripreneurs.

The study is novel in that it demonstrates that chatbot-assisted training is easy and enjoyable for individuals with limited or no digital literacy. The high positive ratings indicate that AI platforms can help reduce learning gaps among marginalized communities. The platforms improve the efficiency and accessibility of learning when designed to appreciate cultural contexts and remain user-friendly.

Several studies have shown similar ideas in other settings. Romadhon (2024) found that chatbots reduce anxiety and increase engagement for language learners. Guo et al. (2022) showed that chatbot support improves students' ability to argue and explain ideas in business courses. This study agrees with those findings but is unique because the learning takes place inside a *pesantren*, an environment where technology is not a regular part of daily study.

The results also connect to learning theory. According to Vygotsky's sociocultural theory, learning is most effective when it is accompanied by social help and support (De Felice et al., 2023). In this study, the chatbot functioned as a "digital tutor," providing targeted assistance or scaffolding at the right moment. Scaffolding implies that support is provided in steps only to the extent that the learner needs it, and is gradually withdrawn as the learner becomes more competent. This was demonstrated by the chatbot providing concise feedback, either positive or negative, on tone, grammar, or specific words in the event of a mistake, which allowed students to correct one component at a time rather than being overwhelmed by too much information all at once. This enabled learners not to feel lost and gave them the motivation they needed.

It is also an opportunity to practice repeatedly and reflect, which is consistent with the previous constructivist concept of Bruner (1966), which states that people learn best when they construct their own knowledge. Constructivism proposes that learners learn through experience, a process that involves trial and error. Students had an opportunity to test, receive feedback, make changes, and test again during each chatbot session, as errors provided a chance to learn. The learners were not merely imitating answers but gradually developing their own style of writing business messages. This connection between scaffolding and constructivim explains why the chatbot was effective: it helped guide learners while allowing them to remain in control of their learning, ultimately becoming confident and self-sufficient in the long run.

The chatbot was developed specifically for santripreneurs and incorporated authentic tasks, including promoting halal products, using formal greetings, and respectfully managing customer complaints. The relevance of these examples to the students' daily experiences increased their motivation and engagement in practice activities. Many AI studies focus on classrooms or company settings, but this work demonstrates that when AI is tailored to local culture and values, it can also succeed in religious schools. This culturally sensitive approach aligns with the views of Jaton (2024) and van de Poel (2020), who argue that AI systems should reflect local traditions and ways of thinking.

These results show that conversational AI can be both effective and easily accessible, especially for young entrepreneurs in pesantren often called santripreneurs who typically have limited opportunities to participate in formal business communication training. The substantial improvement shown by the experimental group suggests that a chatbot can work like a personal tutor, guiding learners step by step.

The findings agree with many earlier studies. Winkler and Söllner (2018) and Kaiss et al. (2024) reported that chatbots improve user satisfaction and motivation in online learning. Alafnan et al. (2023) also showed that chatbot simulations help learners feel more confident when writing professional emails. Similarly, the

entrepreneurs in the study reported that the chatbot feedback was helpful and easy to understand, which provided them with greater confidence to write. The only distinction is the environment: in the majority of past research, the object of study is corporate training or university courses, whereas in this study, informal and religious education is considered, where modern tools are not necessarily available.

This work presents new evidence that chatbot-based training can be both simple and meaningful, even for users with limited digital experience. Positive feedback scores above 4.5 show that many participants felt supported. This supports the idea that AI tools can help close learning gaps in underserved communities when they are designed in a culturally friendly way.

Other studies also point in the same direction. Romadhon (2024) and Kim and Su (2024) found that chatbots reduce anxiety and keep language learners engaged. Guo et al. (2022) and Nusivera et al. (2025) showed that chatbot support improves argumentation skills in business education. Our results are similar: when a chatbot provides quick and helpful answers, learners become more confident and better at expressing their ideas. The difference lies in the context a pesantren environment where technology is not the primary focus of daily study.

The research indicates that students in rural or religious settings, or those lacking modern facilities, still benefit from the advantages of technologically mediated training when the technology is effectively integrated into their local environment. This provides a cost-effective and accessible means for young entrepreneurs to develop their communication skills. The application of AI in pesantren also facilitates learning that aligns with local culture and real-world needs. Jaton (2024) and van de Poel (2020) emphasize that AI should respect local traditions and values. The chatbot used in the research was specially modified to suit santripreneurs, with tasks like halal product marketing, polite greetings, and ethical customer care. Being accustomed to the content, learners found the tool relevant and continued to use it.

Practical recommendations. It is suggested that *pesantren* teachers can incorporate chatbot training, lasting 20-30 minutes, into entrepreneurship lessons, providing students with daily guidance on how to write business emails politely, make requests, and respond to customers. To ensure cultural comfort, templates and scenarios should incorporate halal products, cooperative trade, and respectful Islamic greetings. As an educational technology developer, creating lightweight chatbot modules with bilingual prompts (in Bahasa Indonesian and English) and offline support would assist schools with low internet bandwidth. For policymakers, scaling up digital pedagogy skills in rural Islamic schools can be achieved by subsidizing low-cost AI platforms and providing teachers with training in digital pedagogy.

Future research may involve longer interventions (e.g., 8-12 weeks) to investigate whether skills are maintained, explore other AI models or gamification features, and examine oral communication skills such as negotiation or pitching. Mixed methods, such as interviews, would provide more information on learners' attitudes. The similarities and differences in AI acceptance in relation to local culture would also be demonstrated through comparative studies across *pesantren* in various provinces.

This study has some limitations. The sample was limited to 60 entrepreneurs in East Java and may therefore not be representative of all *pesantren* in Indonesia. The emphasis was on written work; there was no measurement of oral skills. Scalability may still be limited by access to a stable internet connection. Lastly, confidence is self-reported and can be biased. Nonetheless, the culturally adapted chatbot has potential. It demonstrates that AI-based learning can enhance informal and religious schools by strengthening

soft skills, provided it does not violate learners' values, day-to-day realities, and aspirations.

CONCLUSION

The results of this study demonstrate the effectiveness of a chatbot-oriented conversational artificial intelligence (AI) training intervention in enhancing the business communication skills of santripreneurs as a new generation of businesspeople. Chatbot use was able to enhance clarity of writing, professional tone, grammatical accuracy, and message organization. These results suggest that AI-driven feedback can address specific communication challenges faced by solopreneurs, especially in a business work environment where they lack training or experience. The research contributes to the literature on AI in training and professional development by providing evidence from a culturally unique and underrepresented training context.

This research suggests that incorporating AI into an informal yet culturally entrenched environment, such as a pesantren, can make digital entrepreneurship training more accommodating and responsive to learners' needs. The study is also limited, particularly due to its narrow scope and emphasis on short-term gains, which may not adequately reflect the long-term effects and overall outcomes of entrepreneurship. Even with these shortcomings, the research makes a unique contribution by demonstrating that chatbot-based learning can be adapted to meet the needs of marginalized populations in acquiring practical communication skills. This highlights the importance of culturally sensitive AI implementation in education and offers valuable insights that can inform future research and practice.

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