Integration of Artificial Intellegence in Peer Counseling for Empowering Students at Islamic Boarding School (Pesantren)

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ARTICLE INFO	ABSTRACT
Volume: 4 ISSN: 2963-5489 **KEYWORD** Artificial Intelligence (AI), Peer Counseling, Empowerment Of Islamic Boarding Schools Students	Islamic boarding schools (pesantren) as Islamic educational institutions play a strategic role in shaping a generation that is knowledgeable, has good character, and noble morals. However, the challenges of the digital era have created new psychological and social pressures for students who require adaptive counseling services. Peer counseling has become a relevant approach in Islamic boarding schools because it utilizes the emotional closeness between students to build trust, empathy, and social support. The limited number of peer counselors, varying skills, and limited access to information are obstacles that require innovative solutions. The integration of artificial intelligence (AI) offers opportunities to strengthen peer counseling through the use of Natural Language Processing-based chatbots, recommendation systems, and online platforms. This study uses the library research method by examining primary and secondary literature related to peer counseling, student empowerment, and the implementation of AI in education. The results of the study show that a hybrid model that combines human interaction with AI support has the potential to increase the effectiveness of counseling services. AI plays a role in the early detection of emotional problems, personalization of counseling materials, continuous monitoring, and expansion of service coverage. However, the application of this model must take into account the Technology Acceptance Model (TAM) framework, pesantren values, data privacy ethics, and digital literacy readiness. In conclusion, the integration of AI in peer counseling is not only a technological innovation but also a socio-educational transformation in Islamic boarding schools. This model can strengthen the role of students as agents of empowerment while addressing mental health challenges in the digital age. Further recommendations include the development of a prototype chatbot specifically for Islamic boarding schools and field trials to measure the practical impact on student welfare.

1. Introduction

Islamic boarding schools (Pesantren), as part of Islamic educational institutions, have long contributed to shaping generations with character, knowledge, and noble morals. Islamic boarding schools are residential educational institutions with a unique

environment where religious learning, social life, and moral guidance are integrated. In addition to acquiring knowledge of Islam, students are also educated through daily life, which teaches them to become independent, leaders, and empathetic individuals. However, Islamic boarding schools face new challenges that impact the psychological and social well-being of students due to advances in information technology and the acceleration of digitalization. Counseling services that are closer to the daily lives of students are needed to address mental health issues, academic pressure, and changes of the times.

Peer counseling is one approach that is suitable for the pesantren culture because it utilizes the horizontal relationships between santri, which tend to be egalitarian. In peer counseling, trained santri can become companions for their peers who are facing personal, academic, or social problems. This approach has the advantage of building trust and openness, as students find it easier to express their feelings to their peers than to teachers or caregivers. However, the limited number of peer counselors, varying counseling skills, and limited access to information are obstacles that need to be overcome.

Advances in artificial intelligence (AI) present new opportunities to strengthen counseling services in Islamic boarding schools. Technologies such as Natural Language Processing (NLP)-based chatbots, data-driven recommendation systems, and online counseling platforms enable early detection of emotional problems, provision of appropriate counseling materials, and real-time mentoring. The integration of AI in peer counseling can increase efficiency, expand service coverage, and facilitate students' access to anonymous assistance. Furthermore, AI can provide data analysis that helps counselors design more targeted guidance programs.

2. Literature Review

Previous studies have confirmed that peer counseling is effective in improving social skills, empathy, and psychological well-being in adolescents (Aini Nasir et al., 2025). In the context of Islamic boarding schools, this approach is in line with the principles of ukhuwah and ta'awun, which emphasize solidarity among students (Azizah, 2025). Meanwhile, the use of AI in counseling services is beginning to develop in various countries. AI can serve as a tool for behavioral analysis, problem identification, and recommendation generation for counselors (Fitriana et al., 2024).In Indonesia, various studies reveal the potential use of AI in Islamic education and its significant implications, although it is still constrained by digital literacy and data ethics that require ethical oversight in the use of AI(Hakim et al., 2024). From these studies, there appears to be an opportunity to combine peer counseling models with AI support to improve the effectiveness of services in Islamic boarding schools.

2.1 Peer Counseling

Peer counseling is a guidance approach in which individuals who are close in age, social status, or experience act as emotional companions for their friends who are facing problems (Zuhrotunnisa' Ibandiyah & Hasanah, 2021). According to the Helping Relationship theory (Rogers, 1951), an empathetic, warm, and non-directive relationship between counselor and client is highly effective in encouraging openness. In the context of Islamic boarding schools, the emotional closeness and communal life among students facilitate the formation of trust, making peer counseling an effective means of addressing minor psychological problems, improving communication skills, and instilling Islamic values (Arifin et al., 2025). This is in line with the concept of peer helping, which emphasizes the role of peer groups as agents of social support.

2.1 Empowerment of Islamic Boarding Schools Students

The concept of empowerment emphasizes the process of increasing control, critical awareness, and individual participation in solving problems. Empowerment is a process of giving power to the weak and reducing the power of those in power, so that there is a balance (Muslim, 2009), which is carried out in a transformative, participatory, and sustainable manner through increasing the ability to deal with various basic problems faced and improving living conditions and carried out in accordance with expectations (Lawrenche et al., 2021). In the pesantren environment, empowering santri through peer counseling not only improves their ability to manage personal problems but also fosters leadership and a sense of social responsibility. This theory reinforces the idea that AI integration is not only aimed at providing technological services but also at expanding the capacity of santri as active subjects who utilize technology to help others.

2.3 Artificial Intelligence in Education

Artificial intelligence (AI) is defined as a system capable of performing cognitive tasks such as learning, reasoning, and problem solving like humans (Irwanto et al., 2025). In the field of education, the Technology Acceptance Model (TAM) theory developed by Davis (1989) explains that technology acceptance is influenced by perceived ease of use and perceived usefulness. AI has provided new opportunities to improve the effectiveness of education. AI can be used to provide customized learning materials, identify student learning patterns, improve the efficiency of the evaluation process, and many other uses (Surya Mahendra et al., 2024). The integration of AI in peer counseling will be accepted if students feel that the technology is easy to use, useful, and maintains the ethical values of the Islamic boarding school. Research (Dewi et al., 2025) confirms that Natural Language Processing (NLP)-based chatbots are capable of providing initial psychological support, detecting emotional patterns, and giving personalized advice in real-time, although human assistance is still required for complex cases.

2.4 Counseling Integration Model

Based on the synthesis of the above theories, the integration of AI in peer counseling can be viewed as a hybrid model that combines human interaction (peer counselors) with artificial intelligence as a companion. This model enables a more inclusive, responsive, and adaptive counseling process, in which AI plays a role in: a. Early detection, namely recognizing symptoms of stress, anxiety, or learning difficulties through text and conversation analysis. b. Service personalization: providing counseling materials according to individual needs; c. Continuous monitoring: helping guidance counselors monitor students' progress systematically. This conceptual framework supports the idea that AI integration is not only a technological innovation but also part of the socio-educational transformation in Islamic boarding schools. AI is positioned as a tool that strengthens the quality of human interaction, not replaces it, in accordance with the principle of human-centered AI (Irwanto et al., 2025).

3. Methodology

This study uses a qualitative approach with library research as the main framework to explore the integration of artificial intelligence (AI) in peer counseling models in Islamic boarding schools. This method was chosen because the focus of the study was on analyzing concepts, theories, and findings from previous studies relevant to the topic, so that data was obtained through a review of scientific literature and academic documents, rather than through field experiments. The research data sources came from primary and secondary literature, including primary literature: books on counseling theory, peer counseling, empowerment, and artificial intelligence in education published nationally and internationally. Secondary literature includes scientific journal articles, international conference proceedings, research reports, Islamic boarding school education policies, and credible online publications related to the use of AI in counseling services and Islamic education. The selection of sources was based on the quality of the publication (peer-reviewed), relevance to the topic, and recency (at least within the last five years), except for classical literature that serves as the main theoretical reference. The collected data were analyzed using content analysis.

4. Results and Discussion

Through this literature review method, a comprehensive conceptual framework was obtained regarding the model of artificial intelligence integration in peer counseling. The results of this study are expected to form the basis for policy development, practical guidelines, and more applicable further research in Islamic boarding schools. The results of the study show several key findings:
a. The potential of AI. The potential of AI includes chatbot technology and companion applications that can be used for initial screening of psychological problems, provision of counseling materials, and 24-hour assistance.
b. Integration model. In this case, AI functions as a support system that complements the role of peer counselors, not replaces them. Students can access the chatbot before face-to-face sessions.
c. Benefits. The benefits include increased service accessibility, early detection of emotional problems, personalized materials, and increased student trust in counseling services.

The integration of AI in peer counseling opens up opportunities for the sustainable empowerment of students. (Fitriana et al., 2024). Technology can bridge the gap caused by the limited number of counselors and provide data that can aid educational

decision-making. However, the results of the study also emphasize the importance of maintaining pesantren values, such as manners, confidentiality, and authenticity of interaction. The implementation of AI must be accompanied by ethical guidelines, digital literacy training, and strengthening the role of guidance counselors so that technology becomes a tool, not a substitute for human interaction. Infrastructure challenges, especially in Islamic boarding schools with limited resources, require policy and funding support.

The above findings indicate that peer counseling in Islamic boarding schools is conceptually consistent with Rogers' Helping Relationship theory (1951), which emphasizes the importance of empathy, warmth, and openness in counseling relationships. The Islamic boarding school environment, which is based on ukhuwah (brotherhood) and ta'awun (mutual cooperation), reinforces the effectiveness of peer counseling, as students feel more comfortable sharing with their peers.

Markiyan D & Papagiannidis (2025) explains that the integration of AI into peer counseling services is in line with the Technology Acceptance Model (TAM) framework (Davis, 1989), which states that technology acceptance is influenced by perceptions of ease of use and usefulness. In the context of Islamic boarding schools, AI can be accepted if the application used is simple, supports the psychosocial needs of students, and does not conflict with Islamic values.

The application of the hybrid model provides dual benefits. From a technological perspective, AI acts as a support system that can accelerate problem detection, provide solution recommendations, and store counseling data for long-term evaluation. From a humanistic perspective, peer counseling remains the center of interaction that fosters trust, empathy, and Islamic brotherhood values. This is in line with the idea of human-centered AI, which places technology as a support, not a substitute for human interaction. However, challenges remain, particularly in terms of the digital literacy of students and teachers, the ethics of personal data use, and the limitations of technological infrastructure in Islamic boarding schools. Therefore, the integration of AI in peer counseling needs to be supported by digital training, ethical policies related to data privacy, and the provision of user-friendly platforms.

Therefore, the results of this study show that the integration of peer counseling and AI is not merely a technological innovation, but also part of a social-educational transformation in Islamic boarding schools. This strengthens the role of Islamic boarding schools in addressing mental health challenges and the dynamics of digitalization, without abandoning the noble values of Islamic education..

5. Conclusion

The integration of peer counseling with artificial intelligence (AI) in Islamic boarding schools shows great potential as an innovative model in addressing the psychosocial challenges of students in the digital age. Peer counseling remains relevant because it is in line with the culture of ukhuwah (brotherhood) and ta'awun (mutual cooperation), and is effective in building empathy, trust, and solidarity among students. The presence of AI through technologies such as chatbots, data analysis, and online platforms can strengthen the role of peer counselors by providing early detection services, personalized counseling materials, and continuous monitoring. A hybrid model that combines human interaction with AI support provides benefits in the form of increased service accessibility, coaching effectiveness, and continuous empowerment of students. However, the implementation of this integration needs to take into account digital literacy, data usage ethics, and infrastructure limitations in Islamic boarding schools. With a human-centered AI approach, technology can be a tool that supports the socio-educational transformation of Islamic boarding schools without reducing Islamic values.

References

Aini Nasir, A., Nurina, P., & Husaibatul Khairat Hsb, F. (2025). Peran Konselor Sebaya dalam PIK-R (Pusat Informasi Konseling dan Remaja) Terhadap Keterampilan Sosial Remaja. *Al-Isyraq: Jurnal Bimbingan, Penyuluhan, Dan Konseling Islam*, *8*(2), 953–970.

Arifin, S., Yohandi, & As'ad. (2025). Konseling Berbasis Pesantren Untuk Meningkatkan Kesehatan Mental dan Kesejahteraan Psikologis Santriwati Baru. *Hisbah: Jurnal Bimbingan Konseling Dan Dakwah Islam*, *21*(2), 146–164. https://doi.org/10.14421/hisbah.2024.212-09

Azizah, N. A. (2025). *Internalisasi Nilai-nilai Pendidikan Islam Multikultural dalam Membangun Ukhuwag Islamiyah Santri di Pondok Modern Arrisalah Putri Slahung dan Asrama Putri Pondok Pesantren Al Islam Joresan*. Pascasarjana IAIN Ponorogo.

Davit Markiyan, & Papagiannidis. (2025). *Technology Acceptance Model*. https://open.ncl.ac.uk

Dewi, B. N. I., Achmad, M., Assyfa, N., Sanggara, R. D., Julliyana, R., Farhan, S. R., & Sukaesih, N. S. (2025). Chatbot dalam Deteksi Kesehatan Mental : Tinjauan Literatur. *Trilogi: Jurnal Ilmu Teknologi, Kesehatan, Dan Humaniora*, *6*(1), 128–135. https://doi.org/10.33650/trilogi.v6i1.10888

Fitriana, Sulfikar.K, & Maslina. (2024). Kecerdasan Buatan dan Komunikasi Efektif: Menavigasi Tantangan dan Peluang dalam Bimbingan dan Konseling. *Mimbar: Jurnal Media Intelektual Muslim Dan Bimbingan Rohani*, *10*, 2716–3806.

Irwanto, Eline Yanty Putri Nasution, & Putri Yulia. (2025). *Artificial Intelegensi (AI) Terhadap Dunia Pendidikan:Positif atau Negatif*. CV.Eureka Media Aksara.

Zuhrotunnisa' Ibandiyah, & Hasanah, M. (2021). Conseils : Jurnal Bimbingan dan Konseling Islam Efektivitas Layanan Konseling Sebaya (Peer Counseling) Untuk Meningkatkan. *Conseils: Jurnal Bimbingan Dan Konseling*, *01*, 89–100.

Surya Mahendra, G., Daniel Adolf Ohyver, Mk., Najirah Umar, Mp., Loso Judijanto, M., Ayuliamita Abadi, Ms., & Budi Harto, Mp. (2024). *Tren Teknologi AI: Pengantar, Teori dan Contoh Penerapan Artificial Inteligence di Berbagai Bidang* (Efitra, Ed.). PT. Sonpedia Publishing Indonesia. www.buku.sonpedia.com