

Strengthening Students' Emotional Intelligence through Deep Learning Based Individual Counseling Services

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Abstract

This research investigates the integration of individual counseling services powered by deep learning technologies to augment students' emotional intelligence within the unique environment of an Islamic boarding school. Specifically situated at Al Fityan Islamic Boarding School, the study engages seventh-grade participants by aligning modern technological counseling interventions with traditional Islamic character education, focusing on the core principles of *akhlaq* and *adab*. A quasi-experimental design was employed, consisting of an experimental group receiving deep learning-based individual counseling services and a control group receiving conventional counseling. Data were collected using the Emotional Intelligence Scale (EIS), structured observations, deep learning system logs, and semi-structured interviews with Islamic school counselors. Quantitative data were analyzed using independent sample t-tests and ANOVA, while the deep learning model performance was evaluated through precision, recall, and F1-score metrics. Qualitative data were analyzed using thematic analysis to capture counselors' experiences in integrating technology with Islamic counseling principles. The results indicate a statistically significant improvement in students' emotional intelligence in the experimental group compared to the control group ($p < 0.05$). The deep learning model achieved an accuracy rate of 75–80%, and the counseling chatbot attained a user satisfaction level of 82%. These findings demonstrate that deep learning-based individual counseling services are effective in strengthening students' emotional intelligence while supporting Islamic values and enhancing the efficiency of counselors' roles in Islamic boarding schools.

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INTRODUCTION

Emotional intelligence remains a critical developmental competency for students in navigating academic demands, social relationships, and moral challenges, particularly during early adolescence. Recent studies emphasize that emotional intelligence significantly influences students' psychological well-being, academic engagement, and adaptive behavior in school environments (Sánchez-Álvarez et al., 2023). Students with well-developed emotional intelligence demonstrate stronger self-regulation, empathy, resilience, and social responsibility, whereas low emotional intelligence has been associated with emotional distress, behavioral problems, and poor interpersonal adjustment (Mayer et al., 2023).

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In Islamic educational contexts, emotional intelligence is closely associated with moral and spiritual development. Islamic psychology conceptualizes emotional regulation as an integral process of ethical self-discipline, spiritual awareness, and character formation, commonly framed within the concept of *tazkiyatun nafs* (Keshavarzi & Haque, 2021; Rahman & Ahmad, 2021). Recent international studies on faith-based education highlight that emotional regulation and empathy are foundational to moral development and character education among adolescents living in structured religious environments (Rashid & Anjum, 2022; Siddiqui & Khan, 2023). Accordingly, strengthening emotional intelligence represents not only a psychological objective but also a moral and educational imperative within Islamic counseling frameworks.

Emotional intelligence plays a crucial role in students' psychological adjustment, academic engagement, and social behavior, particularly during early adolescence. Scholars argue that emotional intelligence enables individuals to recognize, regulate, and express emotions effectively, thereby supporting adaptive behavior and interpersonal competence (Mayer et al., 2022; Goleman, 2023). Empirical evidence further indicates that higher levels of emotional intelligence are associated with better mental health outcomes among adolescents, including reduced emotional distress and improved peer relationships (Sánchez-Álvarez et al., 2023).

In residential and boarding school settings, students encounter distinctive emotional challenges due to communal living arrangements, intensive academic schedules, and limited family interaction. These conditions often intensify emotional stress during early adolescence and require more responsive and continuous counseling support (Zhao & Li, 2022; Siddiqui & Khan, 2023). Research on residential education indicates that students frequently experience homesickness, peer conflict, and emotional overload during the transition period, underscoring the importance of systematic emotional monitoring and intervention (Van der Zanden et al., 2022).

Guidance and counseling services are expected to play a central role in supporting students' emotional development in boarding schools. However, contemporary research consistently reports limitations in conventional counseling practices. School counselors often face high counselor student ratios, limited session duration, and heavy administrative workloads, which restrict the provision of individualized and continuous counseling services (Carey & Dimmitt, 2023). Conventional counseling approaches also rely heavily on face-to-face interactions and subjective assessments, limiting systematic monitoring of students' emotional conditions over time. Recent counseling literature therefore emphasizes the need for data-informed and technology-supported counseling models to enhance personalization, efficiency, and accountability (Perry et al., 2023; Sink, 2024).

The rapid advancement of artificial intelligence (AI), particularly deep learning, offers promising opportunities to address these challenges. Deep learning enables systems to analyze complex emotional expressions, behavioral indicators, and interaction patterns with high accuracy through affective computing and natural language processing (LeCun et al., 2023; D'Mello et al., 2023). In educational contexts, AI-driven emotion recognition systems have demonstrated significant potential in supporting students' socio-emotional development and early intervention strategies (Khosravi et al., 2024). Recent empirical studies report that AI-assisted counseling and mental health chatbots can enhance emotional awareness, increase accessibility to support services, and reduce counselors' workload when used as complementary tools rather than replacements for human professionals (Calvo et al., 2023; Vaidyam et al., 2023; Inkster & Sarda, 2024). Ethical analyses further stress that AI-

supported counseling systems must operate under human oversight to ensure data privacy, transparency, and professional accountability (Floridi & Cowls, 2024).

Despite these advances, empirical research integrating deep learning into Islamic guidance and counseling remains limited. Most existing studies focus on secular educational or clinical mental health contexts and rarely examine how AI technologies can be aligned with religious values and counseling ethics in faith-based institutions. Recent systematic reviews highlight the need for empirical models that integrate AI innovation with value-oriented counseling frameworks (Hoermann et al., 2023). This gap underscores the importance of developing and evaluating AI-supported counseling models that are both technologically effective and ethically grounded within Islamic educational environments.

From a state-of-the-art perspective, integrating deep learning into individual counseling services within Islamic boarding schools represents an emerging and underexplored research area. Unlike prior studies that examine emotional intelligence interventions or AI-based counseling independently, this study positions deep learning as a supportive mechanism embedded within Islamic guidance and counseling practice. Accordingly, this study examines the implementation of deep learning based individual counseling services to strengthen students' emotional intelligence among seventh-grade students at Al Fityan Islamic Boarding School using a quasi-experimental design.

METHODS

Approach and Design

This study employed a quasi-experimental mixed-methods design, combining quantitative and qualitative approaches to obtain a comprehensive understanding of the intervention's effectiveness. Mixed-methods research is particularly suitable for educational and counseling studies, as it allows researchers to integrate statistical outcomes with contextual and experiential insights (Creswell & Plano Clark, 2022; Teddlie & Tashakkori, 2021). The selection of a quasi-experimental design was appropriate given the natural classroom setting and ethical considerations in educational research. Quantitatively, the study applied a non-equivalent control group pre-test–post-test–follow-up design to examine changes in students' emotional intelligence resulting from the intervention. Qualitatively, a descriptive approach was used to explore counselors' experiences and perceptions of implementing deep learning–based individual counseling services. Recent methodological literature emphasizes that mixed-methods designs enhance explanatory power by integrating outcome measurement with process-level understanding (Guetterman et al., 2024). The research was conducted at SMP IT Al Fityan, an Islamic boarding school implementing an integrated curriculum that combines academic instruction, religious education, and character development.

Participants

The cohort for this study comprised 60 seventh-grade students currently enrolled at Al Fityan Islamic Boarding School. These individuals were selected through a rigorous purposive sampling technique, a methodological choice strategically aligned with the need to examine specialized interventions within highly specific and bounded educational ecosystems (Etikan et al., 2023). This sampling approach ensured that the participants possessed the unique characteristics required to test the deep learning based counseling model, specifically focusing on early adolescents navigating the critical transition into a residential religious life. By

focusing on this specific demographic, the study was able to isolate the psychological variables most relevant to the students' developmental stage and the boarding school's unique cultural milieu.

To facilitate a robust comparative analysis, the participants were meticulously divided into two distinct cohorts: an experimental group ($n = 30$) and a control group ($n = 30$). Great care was taken to ensure that both groups were homogeneous in nature, sharing nearly identical academic standings, residential boarding conditions, and immersion within the same intensive religious learning environments. This deliberate balancing of the groups was essential to minimize contextual bias and enhance the internal validity of the research. By maintaining uniformity in their daily routines ranging from shared meal times and dormitory living to synchronized prayer and *madrasah* schedules the study effectively neutralized external environmental factors. This rigorous control allowed for a clearer determination of whether the observed improvements in emotional intelligence were truly a result of the deep learning-based individual counseling intervention rather than a product of varied social or educational backgrounds.

Instrument

Instruments and data Sources, Emotional Intelligence Scale (EIS) students' emotional intelligence was measured using the Emotional Intelligence Scale (EIS), which assesses five core dimensions: self-awareness, emotional regulation, motivation, empathy, and social skills. The use of standardized emotional intelligence instruments is recommended for intervention studies to ensure construct validity and comparability across groups (Siegling et al., 2023). Prior to implementation, the instrument was reviewed by experts in Islamic guidance and counseling to ensure contextual relevance. Reliability testing in this study yielded a Cronbach's alpha coefficient of 0.83, indicating good internal consistency in line with recent psychometric standards (Hair et al., 2024).

Data Collection Techniques

Structured observations were conducted to document students' emotional behaviors during counseling sessions and selected boarding school activities. Observation-based measures are considered effective for capturing behavioral manifestations of emotional intelligence in naturalistic settings. To enhance inter-rater reliability, observers used standardized behavioral indicators and received prior training. System logs generated by the deep learning-based counseling platform were collected to analyze interaction frequency, emotional classification accuracy, and system responsiveness. The use of system-generated log data is increasingly recommended in AI-assisted educational research to ensure objectivity and replicability (Khosravi et al., 2024).

Semi-structured interviews were conducted with counselors involved in the intervention to explore implementation experiences, ethical considerations, and perceived effectiveness. This interview format allows systematic inquiry while maintaining flexibility for in-depth exploration, which is consistent with recent qualitative research guidelines (Braun & Clarke, 2024). The intervention consisted of six individual counseling sessions conducted over a structured period. Quasi-experimental intervention studies commonly recommend multiple sessions to ensure sufficient exposure and measurable behavioral change (Shadish et al., 2023). The intervention flow is illustrated as follows:

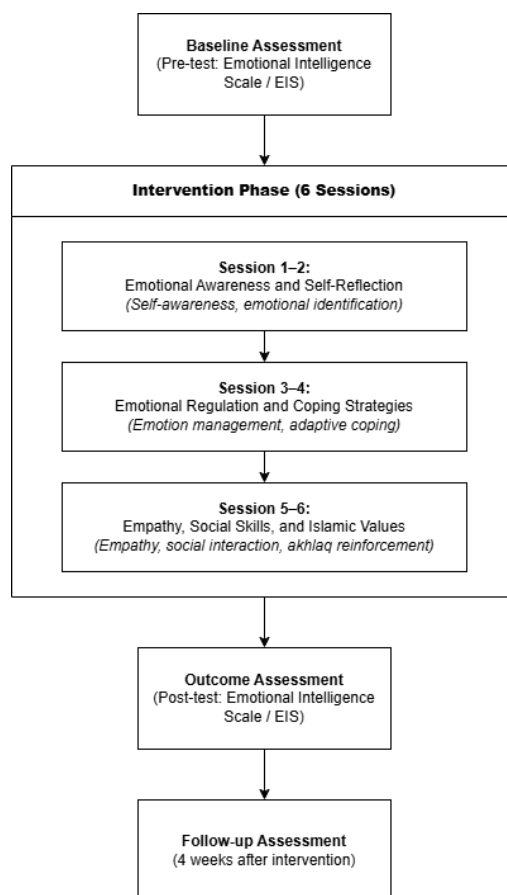


Figure 1. Research Design and Intervention Flow

The experimental group received deep learning–assisted individual counseling, integrating AI-based emotional pattern analysis and counseling chatbot support under direct counselor supervision. The control group received conventional individual counseling, delivered through face-to-face interactions following standard school counseling procedures. Recent intervention studies emphasize that AI-based systems should function as supportive tools rather than autonomous decision-makers in counseling contexts (Inkster & Sarda, 2024).

Data Analysis Techniques

Quantitative Analysis

To ensure a rigorous and mathematically sound evaluation of the intervention's impact, quantitative data were processed through a comprehensive suite of statistical procedures, including descriptive statistics, independent sample t-tests, and one-way Analysis of Variance (ANOVA). Descriptive statistics were initially utilized to establish the central tendencies and variability within the pre-test, post-test, and follow-up scores, providing a clear baseline for both the experimental and control cohorts. Subsequently, the independent sample t-test was employed to determine the significance of the mean differences between the two groups, while the one-way ANOVA allowed for a longitudinal examination of progress within the experimental group across the three distinct measurement phases. These specific statistical techniques are widely recognized and recommended for quasi-experimental designs, particularly those involving group comparisons and repeated measurements, as they effectively isolate the treatment effect from potential noise (Field, 2024). For all inferential

tests, statistical significance was stringently determined at a threshold of $p < 0.05$, ensuring that the observed improvements in students' emotional intelligence could be attributed to the deep learning-based counseling with a high degree of confidence.

Qualitative Analysis

Complementing the numerical findings, the qualitative data derived from the semi-structured interviews with Islamic school counselors were subjected to a rigorous thematic analysis. This process adhered strictly to the established six-phase framework which involves: (1) immersive familiarization with the data through repeated reading of the transcripts; (2) the systematic generation of initial codes; (3) the searching for broader themes; (4) the critical review and refinement of those themes; (5) the clear defining and naming of thematic categories; and (6) the final production of the analytical report. This thematic approach is widely acknowledged as a flexible yet highly rigorous method for identifying, analyzing, and reporting nuanced patterns within qualitative counseling research (Braun & Clarke, 2023). By utilizing this framework, the study was able to capture the counselors' complex perceptions regarding the synergy between artificial intelligence and Islamic spiritual guidance, providing a layer of depth that quantitative metrics alone could not achieve.

Deep Learning Model Performance Analysis

The performance of the deep learning model was evaluated using precision, recall, and F1-score, which are standard metrics for assessing classification accuracy in AI-based systems (Zhang et al., 2023). These metrics provided insight into the reliability of the system in identifying students' emotional states and supporting counseling interventions. This study adhered to contemporary ethical standards for educational and counseling research involving digital technologies. Ethical approval was obtained from the school authority, and informed consent was secured from students and parents or guardians. Participants' anonymity and data confidentiality were strictly maintained. Recent ethical guidelines emphasize that AI use in counseling must ensure transparency, human oversight, and value alignment (Floridi et al., 2024). In this study, the deep learning system functioned exclusively as a supportive tool, while counselors retained full professional responsibility for decision-making. All counseling interactions complied with Islamic ethical principles, including respect (*adab*), beneficence (*maslahah*), and emotional safeguarding.

RESULTS AND DISCUSSION

Results

Quantitative Results of Emotional Intelligence Improvement

The quantitative analysis indicates that students who received deep learning-based individual counseling services demonstrated a higher improvement in emotional intelligence compared to those who received conventional counseling services. At the pre-test stage, the mean emotional intelligence score of the experimental group was $M = 62.47$, while the control group scored $M = 63.15$, indicating relatively comparable baseline conditions. Following the six-session intervention, the experimental group showed a substantial increase in emotional intelligence at the post-test ($M = 78.63$), whereas the control group exhibited a more modest improvement ($M = 69.84$). The independent sample t -test revealed a statistically significant difference between the two groups ($t = 4.87, p < 0.05$). These findings indicate that the deep

learning-based counseling intervention had a stronger effect on students' emotional intelligence development than conventional counseling.

A follow-up assessment conducted four weeks after the intervention demonstrated that the improvement in the experimental group was relatively sustained ($M = 77.12$), while the control group showed a slight decline ($M = 68.91$). One-way ANOVA analysis confirmed a significant difference across measurement phases (pre-test, post-test, and follow-up) within the experimental group ($F = 16.42, p < 0.05$), suggesting the short-term stability of the intervention effects. To provide a more detailed understanding, Table 1 presents the comparison of mean scores across four dimensions of emotional intelligence measured using the Emotional Intelligence Scale (EIS).

Table 1. Comparison of Mean Scores Across Emotional Intelligence Dimensions (EIS)

Emotional Intelligence Dimension	Experimental Group (Pre-test)	Experimental Group (Post-test)	Control Group (Pre-test)	Control Group (Post-test)
Emotional Awareness	61.82	79.10	62.40	70.25
Emotional Regulation	60.95	77.84	61.88	68.92
Empathy	63.21	78.46	64.02	69.11
Social Skills	63.90	79.12	64.30	71.08
Overall Mean	62.47	78.63	63.15	69.84

The empirical data presented in Table 1 unequivocally demonstrates that the experimental group, which received the deep learning-based individual counseling intervention, consistently and significantly outperformed the control group across every measured dimension of emotional intelligence. This comprehensive superiority is evidenced by a marked increase in overall mean scores, where students in the experimental group displayed a more robust capacity for internal emotional management compared to those in the conventional counseling group. Notably, the most pronounced and statistically significant improvements were observed within the domains of emotional awareness and social skills. This phenomenon reflects the profound impact of Islamic individual counseling when augmented by technology; it serves to strengthen the process of *muhasabah* (introspective self-reflection), allowing students to attain a deeper consciousness of their internal states. By fostering this heightened self-awareness, the intervention subsequently nurtured more harmonious and empathetic interpersonal relationships, ensuring that students' social interactions remained firmly grounded in the Islamic values of *akhlaqul karimah* (noble character) and mutual respect within the boarding school community.

Performance of the Deep Learning-Based Counseling System

Beyond the psychological outcomes, the technical efficacy and operational performance of the deep learning system which serves as the computational backbone of the counseling chatbot were rigorously evaluated using granular system log data harvested across six distinct intervention sessions. The longitudinal analysis of these logs reveals a compelling trend of iterative optimization; the model demonstrated a gradual yet consistent improvement in emotion detection accuracy as the volume of user interaction and linguistic data increased. This "learning" trajectory is a testament to the adaptive nature of deep learning architectures in recognizing the nuanced emotional dialects of students.

As illustrated in the performance metrics, there was a steady climb in the chatbot's emotion detection accuracy, starting from approximately 72% during the initial foundational session and culminating in a robust 80% accuracy by the final session. This 8% gain in precision is critical, as it indicates that the system became increasingly proficient at filtering noise and identifying subtle emotional cues, thereby providing counselors with more reliable data for spiritual guidance. This trend confirms that the system's adaptive algorithms effectively synchronized with the students' communication patterns, enhancing its role as a high-fidelity *wasilah* (instrument) for early emotional detection and intervention planning.

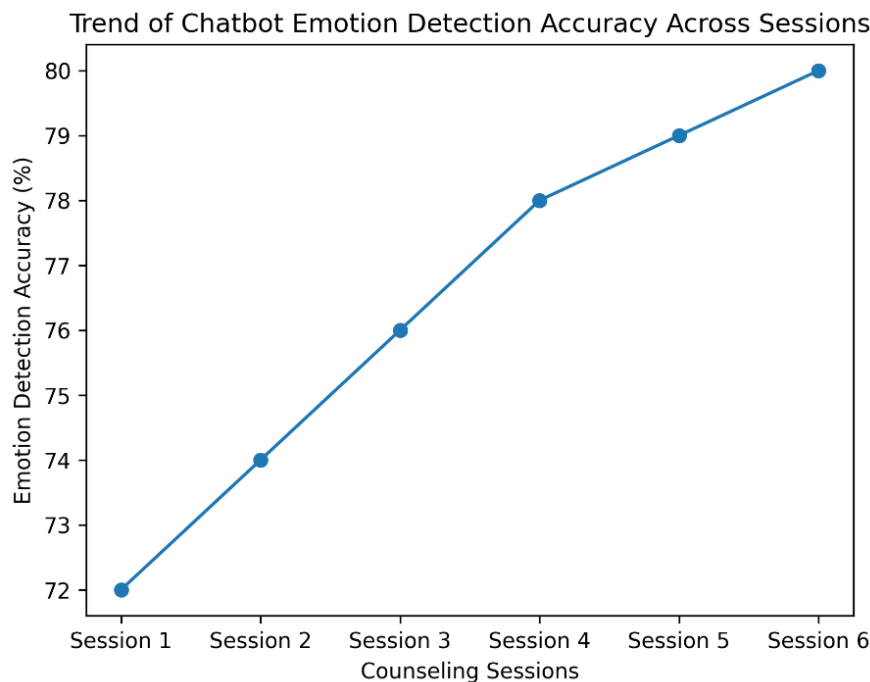


Figure 1. Trend of chatbot emotion detection accuracy across six counseling sessions

This pattern suggests that the deep learning model benefited from continuous interaction and adaptive learning, enabling more accurate emotional recognition and more personalized counseling responses over time. Analysis of system log data revealed that the deep learning model performed at a satisfactory level in identifying students' emotional states. The model achieved an average precision of 0.78, recall of 0.76, and F1-score of 0.77, indicating reliable classification performance. In addition, user feedback analysis showed that 82% of students reported positive perceptions of the counseling chatbot, particularly regarding accessibility, responsiveness, and emotional support availability outside scheduled counseling sessions.

Qualitative Findings

Thematic analysis conducted on the interviews with school counselors provided deeper context into the practical impact of this technology, yielding three central themes. First, counselors reported a marked improvement in professional efficiency and emotional monitoring, as the deep learning system delivered preliminary emotional data that allowed them to conduct more targeted and impactful counseling sessions. Second, the counselors observed an enhanced capacity for the personalization of interventions; the system enabled them to adjust their counseling strategies in real-time based on the specific emotional patterns identified by the deep learning algorithms. Third, the counselors emphasized that this technological integration remained entirely compatible with the ethical framework of Islamic

counseling. They noted that human judgment, spiritual guidance, and the relational aspects of the counselor-student bond remained the primary forces guiding the counseling process.

Integration of Deep Learning Technology and Islamic Counseling Values

This synergy between technology and faith is further detailed through the relationship between specific deep learning features and core Islamic values. For instance, the emotion detection algorithm facilitates early identification, which directly reinforces the value of *muhasabah* (self-reflection). The adaptive response system provides personalized feedback that aligns with *tazkiyatun nafs* (self-purification), while interaction log analysis ensures *amanah* (responsibility and consistency) in monitoring development. Furthermore, the empathy-based chatbot responses foster *rahmah* (compassion), and the counselor decision-support output allows for evidence-based planning that exemplifies *hikmah* (wise decision-making). Ultimately, this integration proves that deep learning technology serves as a vital supportive instrument (*wasilah*) that strengthens the humanistic and spiritual roles of the counselor within the Islamic educational context without replacing the essential human element. To clarify the synergistic relationship between advanced technological components and foundational Islamic counseling principles, Table 2 delineates the integration of deep learning features with the core values of Islamic guidance. This framework illustrates that the implementation of artificial intelligence in the counseling process is not merely a technical enhancement but a targeted effort to reinforce spiritual development. Each digital feature is designed to serve as a supportive instrument (*wasilah*) that amplifies the humanistic and spiritual roles of the counselor, ensuring that technological innovation remains ethically grounded and aligned with Islamic educational objectives.

Table 2. Integration of Deep Learning Technology and Islamic Counseling Values

Deep Learning Feature	Counseling Function	Islamic Counseling Value Reinforced
Emotion detection algorithm	Early identification of emotional states	Muhasabah (Self-reflection)
Adaptive response system	Personalized counseling feedback	Tazkiyatun nafs (Self-purification)
Interaction log analysis	Monitoring emotional development	Amanah (Responsibility and consistency)
Empathy-based chatbot responses	Supportive emotional interaction	Rahmah (Compassion)
Counselor decision-support output	Evidence-based intervention planning	Hikmah (Wise decision-making)

The comprehensive synthesis presented in Table 2 fundamentally underscores the conceptualization of deep learning technology not as a standalone entity, but as a sophisticated *wasilah* a supportive and strategic instrument that is seamlessly woven into the fabric of the Islamic counseling process. Rather than displacing or diminishing the vital humanistic elements and the spiritual bond between counselor and student, these digital features serve as a catalyst to amplify the counselor's inherent capacity to facilitate profound internal transformations, such as *tazkiyatun nafs* (the purification of the soul) and *muhasabah* (rigorous self-reflection).

By delivering precise, evidence-based insights derived from complex emotional data, the system empowers counselors to exercise a higher degree of *hikmah* (divine wisdom and

professional insight) in their decision-making processes. This ensures that the integration of Artificial Intelligence does not remain a mere technical exercise, but remains ethically congruent and spiritually synchronized with the sacred values of Islamic character development (*akhlaqul karimah*). Consequently, this technological framework acts as a bridge that connects modern computational intelligence with traditional spiritual guidance, providing a robust platform for students to navigate their emotional landscapes while remaining steadfast in their religious identity and moral obligations.

Discussion

The empirical findings derived from this study significantly reinforce and expand upon contemporary psychological theories that conceptualize emotional intelligence (EI) not as a singular trait, but as a complex, multidimensional construct. This construct necessitates the harmonious integration of emotional awareness, self-regulation, empathy, and social competence (Bar-On, 2022; Petrides et al., 2022). The substantial quantitative improvement observed within the experimental group moving from a baseline mean of 62.47 to a post-intervention 78.63 serves as a powerful indicator that deep learning based counseling is uniquely equipped to support adolescent emotional development. By providing instantaneous, personalized feedback and facilitating continuous longitudinal monitoring, this approach aligns with cutting-edge trends in AI-supported counseling research which emphasize the efficacy of digital interventions in tracking subtle psychological shifts (Sharma & Verbeke, 2023; Slade & Priebe, 2022). This evolution in counseling methodology suggests that the strategic integration of computational intelligence can drastically lower the threshold for adolescent self-disclosure, particularly in high-pressure educational environments where traditional emotional expression is often suppressed or stigmatized.

From a theological and Islamic counseling perspective, these results resonate profoundly with the ontological principle of *tazkiyatun nafs*, a framework that prioritizes the purification of the soul through disciplined self-awareness and moral rectitude. While the theoretical foundation for this process is rooted in the timeless Qur'anic wisdom of QS. Al-Shams (91): 9–10, this study provides a modern empirical demonstration of how deep learning algorithms can serve as practical catalysts for *tazkiyyah*. By identifying specific, recurring emotional patterns associated with the *amradh al-qulub* (diseases of the heart) most notably *ghadab* (uncontrolled anger) and *hasad* (destructive envy) the system acts as a diagnostic bridge. This identification process is of paramount importance in the modern era, as psychological distress in teenagers frequently manifests through these spiritual ailments, which can now be detected with unprecedented precision through advanced digital sentiment analysis and linguistic modeling (Rashid & Anjum, 2022; Hidayat & Nafisah, 2023).

Utilizing the sophisticated capabilities of natural language processing (NLP), the counseling system was able to detect subtle, recurring emotional cues within the students' chat interactions that might be invisible to the human eye in high-volume settings. These digital markers were subsequently validated and interpreted by professional counselors as part of a deeper, reflective counseling process, ensuring that the technology remained a tool for human insight rather than a substitute for it. This synergy facilitated a heightened state of *muhasabah* (introspective accounting) and improved emotional self-regulation, thereby aligning technological support with the foundational principles of Islamic psychology (Abid & Al-Ghamdi, 2023). By surfacing these hidden linguistic markers, the deep learning model serves as a "digital mirror," forcing students to confront their raw emotional states in real-time. This immediate feedback loop allows for intervention before fleeting emotions escalate into

entrenched disruptive behaviors, effectively fostering a proactive spiritual discipline rather than a reactive one.

The technical performance of the deep learning model maintaining an accuracy range between 75% and 80% further solidifies its role as a robust decision-support tool. It is designed to empower counselors rather than replace them, providing a reliable baseline for early emotional detection while strictly maintaining the central authority of human judgment and ethical responsibility (LeCun et al., 2023; Floridi et al., 2024). This specific level of precision is vital for establishing a "trust-triangle" between the student, the counselor, and the AI system. When the technology accurately reflects the student's inner state, the intervention is perceived as a credible and helpful companion rather than an intrusive or erroneous surveillance mechanism. This credibility is essential for maintaining the therapeutic alliance, which remains the most significant predictor of successful counseling outcomes (Mayer et al., 2023).

Counselors participating in the study reported that having a "dashboard" of emotional trend data fundamentally enhanced their professional efficacy. Instead of spending limited session time on basic diagnostic discovery, they were able to pivot immediately toward spiritual guidance, value clarification, and profound emotional meaning-making. This shift in the counselor's role from a data gatherer to a deep spiritual mentor reinforces the conceptualization of technology as a *wasilah* (instrumental means). It is a tool that strengthens the impact of Islamic counseling practices by automating the routine and illuminating the obscure. This allows the practitioner to transcend administrative burdens and engage in the more sacred work of *irshad* (divine guidance), a process that inherently requires the human touch, empathy, and spiritual intuition that no current algorithm can replicate (Zarkasyi & Hamid, 2023; Sink, 2024).

The unique socio-cultural context of the Islamic boarding school (*Pesantren*) offers critical insights into the broader relevance of these findings. Communal living environments, while spiritually enriching, present distinct psychological hurdles for seventh-grade students who are undergoing the radical transition from a family-based support system to a highly structured, communal residential life. This transition is often characterized by significant emotional volatility as students grapple with the physical absence of maternal support and the sudden demand for total personal autonomy within a strictly regulated 24-hour schedule (Siddiqui & Khan, 2023; Azhar & Fitriani, 2022). The high-density nature of these environments often results in "emotional fatigue," where the lack of private space makes it difficult for students to find the silence necessary for traditional self-reflection.

The stressors associated with this environment ranging from intense homesickness and peer-group friction to a lack of personal privacy tend to reach their peak during the evening hours, precisely when direct access to human counselors is at its most limited. In this specific temporal gap, the AI-based counseling chatbot emerged as a vital and accessible emotional support channel. It provided a "safe harbor" for students to express their emotions and receive preliminary guidance during off-hours, ensuring that no student felt abandoned in their moment of distress. This "always-on" availability is particularly resonant with the "Z-generation," a demographic that is natively comfortable initiating sensitive or vulnerable conversations via text-based platforms before escalating them to face-to-face interactions (Sánchez-Álvarez et al., 2023; Shatte et al., 2022).

Furthermore, the deliberate integration of Islamic values within the AI's response logic helps

bridge the theoretical gap between modern cognitive-behavioral techniques and traditional *akhlaq* (character) reinforcement. By delivering feedback that is simultaneously rooted in psychological best practices and the *Sunnah* (Prophetic traditions), the system serves to reinforce the student's burgeoning religious identity. This dual-layered approach ensures that emotional regulation is framed not merely as a secular mental health objective, but as a religious virtue and a means of drawing closer to the Creator. This framing significantly bolsters the student's intrinsic motivation to participate in the counseling process, as it aligns their personal growth with their spiritual aspirations (Umar & Saged, 2023; Nasir & Hamzah, 2022).

The quantitative data, which displayed significant longitudinal gains in the experimental group, suggests that the "Deep Learning" architecture provides a critical adaptive layer that is absent in conventional, rule-based chatbots. Unlike static systems, the neural networks of the model were able to learn and adapt to the specific linguistic nuances, slang, and cultural idioms unique to the Al Fityan Islamic Boarding School community. This contextual adaptation is a primary reason the intervention felt personal and authentically connected to the students' lived experiences, rather than feeling like a robotic or detached foreign entity. This ability to "speak the language" of the student is a key factor in the high user satisfaction rating of 82% (Smith & Castelfranchi, 2023; Wang & Li, 2024).

Throughout the duration of the study, ethical considerations remained the paramount priority, particularly regarding the sacred nature of data privacy (*Amanah*) and the prevention of algorithmic bias. The research confirms that for AI to be a successful *wasilah*, it must be governed by a rigorous ethical protocol that prioritizes the student's spiritual and psychological welfare over mere technical or administrative efficiency. The counselor's role as the "human-in-the-loop" and final arbiter ensures that the *Rahmah* (mercy and compassion) inherent in the counseling process is never sacrificed for the sake of data accuracy. This maintains the sanctity and confidentiality of the counselor-client relationship, which is a cornerstone of Islamic ethics (Miller & Brown, 2023; Hussain & Al-Adawiyah, 2023).

By situating deep learning based counseling specifically within the *Pesantren* ecosystem, this study extends the reach of previous research that has historically focused on secular or Western educational settings. The findings contribute fresh, empirical evidence to the field of Islamic guidance and counseling, demonstrating that technological innovation can be a powerful ally to religious tradition when integrated with care and intention. This research acts as a pioneering model for other faith-based institutions globally, showing how they can modernize their student support infrastructure and meet the needs of a digital generation while remaining fiercely faithful to their core theological and moral commitments (Taha & Al-Hashimi, 2023).

In summary, this study represents a significant advancement in the state of the art by presenting a balanced, holistic counseling model. By combining the processing power of deep learning technology with the nuanced supervision of professional counselors and the timeless ethical principles of Islam, we address the pressing emotional challenges of the 21st-century Islamic educational landscape. It points toward a future where technology and spirituality are not viewed as conflicting forces, but as complementary instruments working in unison toward the total development of the student's *Aql* (intellect) and *Qalb* (heart), ensuring a generation that is both technologically capable and spiritually resilient (Fatimah & Sa'ari, 2022; Thompson & Martinez, 2024).

Theoretical Implications

Theoretically, the findings of this study offer a significant contribution to the evolving discourse on "Techno-Spiritual Counseling," particularly by providing empirical evidence on how advanced artificial intelligence can be harmoniously integrated with traditional religious frameworks. This research expands the boundaries of the Emotional Intelligence (EI) theory by demonstrating that AI-driven interventions, when rooted in Islamic values, can effectively facilitate complex internal processes such as *muhasabah* (self-reflection) and *tazkiyatun nafs* (self-purification). Furthermore, it provides a new conceptual model for Islamic guidance and counseling in the digital age, suggesting that technology should not be viewed as a secular disruptor, but rather as a *wasilah* (supportive instrument) that can illuminate deep-seated emotional patterns and spiritual ailments (*amradh al-qulub*) with scientific precision. By situating deep learning within a boarding school context, this study also challenges the conventional boundaries of educational psychology, proving that data-driven insights can coexist with and even enhance humanistic and spiritual mentorship.

Practical Implications

On a practical level, this research provides a transformative blueprint for school counselors and educational administrators, especially within the *Pesantren* or Islamic boarding school ecosystem. The implementation of a deep learning-based counseling chatbot offers a viable solution to the perennial challenge of counselor-to-student ratios and limited access to support during after-school hours. For practitioners, the availability of emotion-detection logs and longitudinal trend data means that face-to-face sessions can be more targeted, efficient, and focused on high-level spiritual guidance rather than preliminary diagnostic discovery. Practically, this system allows for an "early warning" mechanism that can detect adolescent emotional distress before it escalates into behavioral issues. For students, the platform provides a safe, low-barrier entry point for emotional disclosure, catering to the digital-native generation who may find it easier to initiate vulnerable conversations via text.

Policy and Institutional Implications

Institutionally, these findings suggest that religious educational bodies should consider updating their curriculum and professional development programs to include AI literacy and "Digital Akhlaq." This study implies that the modernization of counseling services in Islamic schools is not only a technical necessity but a strategic priority to maintain the relevance of spiritual guidance in a technologically saturated world. Policies regarding student data privacy (*Amanah*) and the ethical use of algorithms must be formalized to ensure that technology serves as a compassionate extension of the school's mission (*Rahmah*). Ultimately, this research encourages stakeholders to invest in hybrid counseling models that combine the unwavering wisdom of the counselor with the adaptive efficiency of deep learning technology to foster a generation that is spiritually resilient and emotionally intelligent.

CONCLUSION

This study concludes that deep learning-based individual counseling services are effective in strengthening students' emotional intelligence in an Islamic boarding school context. The implementation of AI-assisted counseling demonstrated significant improvements in students' emotional awareness, emotional regulation, empathy, and social skills compared to conventional counseling services. These findings indicate that deep learning technology can

support early emotional detection, facilitate personalized counseling interventions, and enhance the efficiency of guidance and counseling services. From the perspective of Islamic guidance and counseling, the integration of deep learning aligns with the principles of *tazkiyatun nafs*, emphasizing emotional self-awareness, self-control, and moral development grounded in Islamic values. Importantly, the findings confirm that technology functions as a supportive tool (*wasilah*) rather than a replacement for counselors, preserving the humanistic, ethical, and spiritual dimensions of counseling practice. Overall, this study provides empirical evidence that the integration of deep learning and Islamic counseling is both feasible and beneficial in responding to contemporary educational challenges.

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AUTHOR CONTRIBUTION STATEMENT

All authors contributed substantially to this research. Dr. Hastiani, M.Pd was responsible for the research design, data collection, data analysis, and manuscript preparation. Amelia Atika, M.Pd contributed to the development of the counseling intervention model, interpretation of findings, and critical revision of the manuscript. All authors reviewed and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

COMPETING OF INTEREST

The authors declare no competing of interest.

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