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CULTIVATING LITERACY AND WELL-BEING: THE ATIPS AI CHATBOT FOR RAMADAN

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Abstract: While Artificial Intelligence (AI) has transformed English Language Learning (ELL), generic platforms often suffer from a cultural mismatch that ignores the physiological and spiritual rhythms of diverse learners. This study introduces ATIPS (Adaptive Theological Information & Physical Support), a Holistic Digital Companion designed for Muslim students. Utilizing a mixed-methods case study at a private university in South Jakarta (N=68), the research evaluates a Triple-Integration Model that synchronizes English literacy tasks with the unique demands of the Ramadan fast. The system employs Just-in-Time Adaptive Intervention (JITAI) architecture to deliver Contextualized Scaffolding, strategically shifting from high-cognitive linguistic drills in the morning to low-stakes wellness support in the afternoon. Data from surveys, interviews, and backend telemetry reveal a significant 82% engagement rate and a 69.2% increase in perceived productivity. These results indicate that ATIPS effectively mitigates the participation tax and techno stress typically associated with intensive study during ritual periods. By bridging the Affective-Linguistic Gap, ATIPS achieves Affective-Linguistic Synchrony, where academic excellence and spiritual observance become mutually reinforcing. This research provides a critical blueprint for the transition from Responsible AI to Resonant AI, advocating for digital tools that respect the Cultural Sovereignty and well-being of the global communities they serve.
Keywords: *Chatbot AI; English language learning; Ramadan literacy; culturally responsive AI; affective-linguistic gap; holistic digital companions.*

INTRODUCTION

The integration of Artificial Intelligence (AI) into language education has precipitated a paradigm shift, moving from static information delivery to the creation of personalized, adaptive learning ecosystems. However, for Muslim students, the holy month of Ramadan—characterized by fasting, prayer, and heightened spiritual devotion—often introduces a tension between religious obligations and academic exigencies. The physiological demands of fasting, including disrupted circadian rhythms and metabolic fluctuations, can significantly deplete cognitive resources (Rahman, 2022). This phenomenon creates a "productivity gap," rendering traditional, temporally rigid learning schedules difficult to sustain.

Current literature posits that AI-powered chatbots represent a transformative approach to English Language Learning (ELL), providing mobile accessibility and real-time interactive engagement that conventional textbooks cannot replicate (Abdallah et al., 2024). Empirical studies demonstrate the efficacy of these systems in simulating naturalistic conversation (Allouch et al., 2021) and significantly reducing "evaluative anxiety" by providing a non-judgmental, low-stakes environment for practice (Xiao et al., 2024;

Li et al., 2025). Furthermore, recent findings underscore that AI-driven gamification and personalization—key components of the ATIPS framework—not only enhance linguistic accuracy but also foster sustained motivation in remote settings (Idowu, 2024). Crucially, the flexibility of AI-mediated learning schedules (Fuad et al., 2024) is theoretically well-suited to accommodate the irregular routines and fluctuating energy levels of fasting students. By demonstrating how a chatbot can support both holistic well-being and targeted language development, this research argues that educational tools achieve maximum efficacy only when they align with the user's "Cultural Reality" and spiritual rhythms (Wijirahayu et al., 2024; Fitas et al., 2025).

The integration of Artificial Intelligence (AI) into educational and religious landscapes has reached a critical inflection point. As Mirzaraimova (2025) posits, we have entered a "new era" of profound teacher-student-AI collaboration where technology is reimagined not as a replacement for expertise, but as a future-oriented pedagogical partner (Petro, 2025; Hul et al., 2025). This shift is particularly evident in sensitive sectors where AI is tasked with handling nuanced human experiences, from pharmacy chatbots managing patient care (Ramadhani, 2023) to intergenerational learning tools utilizing reminiscence (Svobodová et al., 2024).

In religious contexts, the need for safe, theological digital spaces is paramount (Ammad, 2025). However, the success of such tools hinges on the mediating effect of trust (Lim, 2025) and the ability of deep-learning systems to provide responsive, sentiment-aware interactions (Ma et al., 2025; Sa et al., 2025). While systematic reviews show high AI adoption in public services (Concha et al., 2024), a gap remains in "culturally responsive" systems that cater to specific spiritual rhythms, such as the month of Ramadan.

Despite the proliferation of AI in "smart hospitality" (Kovacevic et al., 2024) and the logistical facilitation of major religious events like Hajj (Alqatari et al., 2025), current literature primarily treats AI as a transactional tool. There is a marked lack of evidence regarding systems that simultaneously address language acquisition, physiological well-being, and spiritual productivity. While recent calls for "responsible AI" (Atenas & Stefanelli, 2025) and ethical integration (Sousa, 2025) set a theoretical stage, the practical application of a chatbot that synchronizes cognitive tasks with the unique rhythmic demands of the Ramadan fast remains unexplored. ATIPS addresses this "missing link" by merging affective computing with religious-oriented pedagogy.

To bridge the identified research gap, this study introduces the ATIPS Chatbot, a specialized intervention conceptualized as a Holistic Digital Companion. The system employs a "Dual-Identity Design" to maximize both technical efficacy and user acceptance. Technical Definition, In the backend architecture, ATIPS operates as an Adaptive Theological Information & Physical Support system. This reflects its primary function as a context-aware engine that processes complex data regarding ritual requirements, physiological health markers, and linguistic scaffolding. For User Persona, to reduce "evaluation apprehension" and foster psychological safety, the system is presented to the user as a supportive interface providing "A Way to Know Some Tips." This branding focuses on actionable, low-stakes strategies designed to maintain academic and spiritual productivity throughout the month of Ramadan.

The novelty of ATIPS lies in its departure from the "functional silos" and "cultural mismatch" inherent in generic platforms (Fitas et al., 2025). ATIPS presents a specialized alternative that prioritizes holistic integration." While traditional language-learning chatbots focus on decontextualized cognitive skills (Zhang & Hashemifardnia, 2026), ATIPS introduces a Dual-Purpose Integration Model. By embedding vocabulary and grammar practice within the user's daily spiritual reflections, ATIPS treats the learner as a "whole person" rather than a data processor. Specifically calibrated for the physiological demands of fasting, the system provides evidence-based health and productivity guidance. This creates a unique value proposition: it reduces the "cognitive tax" of learning by making the educational experience inseparable from the user's spiritual journey. ATIPS demonstrates how AI can act as a "relational co-mediator" (Susilo, 2024), bridging the "Affective-Linguistic Gap" (Yunita et al., 2025) to foster a psychologically supportive space for L2 development.

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Table 1. *Unique value proposition of ATIPS*

Feature	Generic LLM Tutors (e.g., Duolingo, ChatGPT)	Existing Islamic Chatbots (e.g., Hadith/Prayer bots)	ATIPS Chatbot (Proposed Model)
Contextual Awareness	Low: Focuses on general scenarios (travel, work).	High: Focused on religious facts/logistics.	Peak Ritual Awareness: Aligns with the 30-day Ramadan rhythm.
Integrated Utility	Cognitive only. Language skill acquisition.	Spiritual/Informational only: Religious guidance.	Holistic Integration: Literacy exercises built into well-being tips.
Affective Design	Neutral: Standard pedagogical persona.	Formal: Often acts as a static repository.	Affective Partner: Addresses "fasting fatigue" during literacy tasks.

The significance of this research extends into the broader discourse on Responsible and Resonant AI. By providing a validated case study of ritual-aware technology, this work informs the design of "Holistic Digital Companions" that prioritize instructional agency alongside user well-being . It offers a scalable model for universities to support Muslim students, ensuring a digital future where students learn "not under constraint, but in community" (UNESCO, 2025). The three pillars of contribution are pedagogical, social and methodological. Pedagogically, it demonstrates the efficacy of "Contextualized Scaffolding," respecting the "Cultural Sovereignty" of the learner (UNESCO, 2025). Socially, it directly addresses the "productivity gap" or "participation tax" experienced during Ramadan. By acting as a cognitive off loader, ATIPS ensures that spiritual observance and academic excellence are not mutually exclusive. Methodologically it advocates for a shift beyond binary performance metrics to capture "Affective-Linguistic Synchrony"—the nuanced alignment of emotional state and cognitive output required for successful human-AI synergy. Ultimately, ATIPS serves as a blueprint for a holistic digital companion, moving the discourse toward technology that actively validates the spiritual and emotional well-being of the diverse global communities it serves.

Consequently, this study is structured around two central research questions designed to evaluate the efficacy of the "Resonant AI" model. The first question (RQ1): In what ways does the ATIPS chatbot mitigate the specific physiological and emotional friction (the "affective-linguistic gap") encountered by English language learners during the month of Ramadan? The second (RQ2): How do students perceive the utility of the ATIPS chatbot as a dual-purpose Holistic Digital Companion, and to what extent does this "ritual-aware" scaffolding foster sustained learner autonomy and engagement in English language acquisition?

METHOD

This study employed a mixed-method case study approach to investigate the potential of the ATIPS Chatbot in promoting English language learning and engagement. The research was conducted at Universitas Muhammadiyah Prof. DR. HAMKA, specifically targeting students enrolled in an English course within the Public Health program. This setting was selected to evaluate the chatbot's efficacy in a specialized academic context where health literacy is paramount.

The study cohort comprised 68 undergraduate students distributed across three classes within the Public Health program. The demographic distribution consisted of 23 males and 45 females, with an age range of 19 to 22 years. Regarding English proficiency, a pre-course placement test classified the majority of participants at the pre-intermediate level. All participants were active students for whom the ATIPS Chatbot was integrated as a mandatory component of their English coursework.

The intervention was built upon a Natural Language Processing (NLP) architecture using Google Dialogflow, specifically engineered to address the "Affective-Linguistic Gap." Technically defined as an Adaptive Theological Information & Physical Support system, the bot utilized temporal scaffolding to align its feedback with the physiological rhythms of the Ramadan fast. Over an 8-week period, students engaged in mandatory 15-minute weekly sessions featuring public health-themed vocabulary drills, grammar quizzes, and scenario-based roleplays. The backend logic was programmed to shift between high-cognitive linguistic tasks in the morning and low-stakes wellness support in the afternoon, mitigating the techno stress typically associated with intensive e-learning during fasting periods.

Data Collection Strategy A multi-pronged data collection strategy was employed to ensure triangulation and provide a comprehensive

understanding of the chatbot's effectiveness. Data sources included:

Surveys. Pre- and post-intervention surveys were administered, combining multiple-choice questions (assessing self-reported confidence, vocabulary, and grammar) with open-ended inquiries to measure shifts in students' perception of English achievement.

Chatbot Interaction Analysis. Backend logs were analyzed to capture interaction frequency, topic selection, and common linguistic challenges. This provided qualitative insights into direct user engagement and the chatbot's responsiveness to EFL learners.

Focus Group Discussions (FGDs). Post-intervention FGDs were conducted with small groups (5 students per group) to gather in-depth qualitative data on feature preferences and instructional effectiveness, aligning with frameworks for analyzing instructional challenge.

Performance Analysis. Researchers analyzed written assignments and recorded spoken presentations to objectively measure improvements in English expression and fluency following sustained ATIPS usage.

A multi-pronged data collection strategy was employed to ensure methodological rigor and triangulation. Quantitative data were gathered through pre- and post-intervention surveys measuring self-reported confidence and perceived literacy gains, complemented by an analysis of backend server logs that captured interaction frequency and linguistic accuracy. These were balanced by qualitative insights from Focus Group Discussions (FGDs) and open-ended survey prompts, which explored the emotional and cultural resonance of the AI persona. Finally, researchers conducted a performance analysis of students' written and spoken assignments to objectively validate the correlation between chatbot usage and academic achievement.

The dataset was analyzed through an integrated lens of descriptive statistics and Reflexive Thematic Analysis (RTA). Quantitative trends were identified through percentage-shift analysis of survey responses, while qualitative transcripts and interaction logs were iteratively coded to identify latent themes. such as pedagogical challenges and content applicability. This study adhered to the 2025–2026 AI Ethics Guidelines, ensuring informed consent, data anonymization at the database level, and voluntary participation. Students were explicitly informed that their engagement with the research components would not impact their formal academic standing, maintaining a clear boundary between the pedagogical intervention and the evaluative study.

RESULTS AND DISCUSSION

Online applications have become a popular medium for learning, offering diverse activities and fostering a sense of community. The increasing integration of social media and gamified learning elements effectively engages students (Alifandra, Wijirahayu, Alam, et al., 2023). This trend presents a unique opportunity to leverage AI chatbots for enhancing Ramadan productivity and English language acquisition.

About ATIPS Chatbot: The menu, core themes and accessibility

The pilot study of the ATIPS Chatbot revealed a system designed to support holistic well-being through three strategic thematic pillars: maintaining productivity during fasting, the importance of forgiveness, and understanding the physiological effects of fasting. These themes, detailed in Table 2, served as a "one-stop shop" for core health information relevant to the holy month. By delivering this content in an engaging and accessible manner, the chatbot successfully navigated the intersection of religious observance and health literacy.

Table 2. *ATIPS information menu*

Menu Option	Information
Behavioral Activity for Productivity During Fasting	Provides information and tips on maintaining productivity while fasting.
Return to Fitri by Learning to Forgive	Explains the importance of forgiveness in Islam and its potential benefits, especially during Ramadan.
The Effect of Fasting on Human Metabolism	Offers information on the physiological impacts of fasting on the human body.
Quiz	Presents questions to test user understanding of the provided information on various topics related to Ramadan.
Fun Fact	Shares interesting and engaging trivia related to Ramadan or Islamic traditions.

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Initial user familiarity and onboarding experience: Foundation for adoption

The study commenced by establishing a baseline for technology adoption among the participants. As illustrated in Figure 1, 38.5% of students reported prior familiarity with chatbots, indicating a promising baseline receptiveness to interactive learning tools and a potential pathway for broader adoption within Public Health programs (Al Husaeni et al., 2024). However, the data also highlighted that a substantial portion of the student body (61.5%) was less familiar with the technology, underscoring the need for user-centric design. Regarding immediate usability, Figure 2 shows that 50.1% of respondents understood how to use the ATIPS Chatbot upon initial launch. While this suggests the interface is intuitive for half the cohort, the remaining 49.9% represents a crucial area for refinement, suggesting that future iterations must enhance the onboarding process through interactive tutorials.

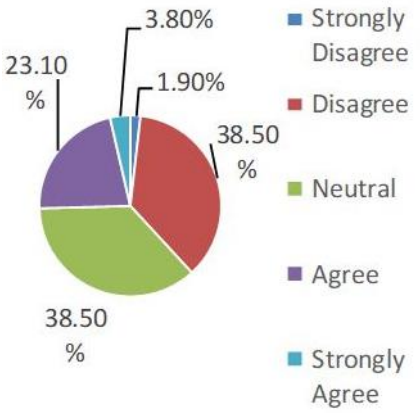


Figure1. *Chatbot familiarity*

The immediate user experience upon initial launch was a key indicator of usability. Encouragingly, 50.1% of respondents indicated they understood how to use the ATIPS Chatbot upon initial launch (Figure 2, Figure 4).

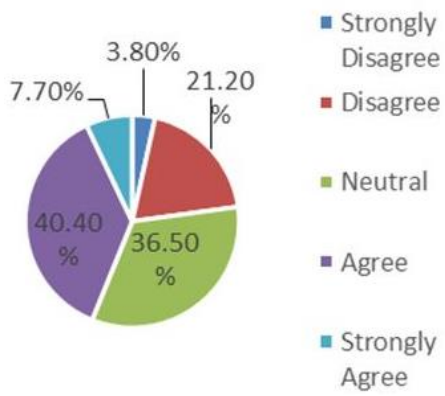


Figure 2. *About how to use the ATIPS chatbot*

This suggests that the chatbot's interface and the initial guidance provided are relatively intuitive for a significant segment of the target audience, contributing positively to a smooth user experience and potentially encouraging sustained engagement. However, the finding that nearly half (49.9%) did not report immediate understanding presents a crucial area for refinement. This points to the need for enhancing the onboarding process or the chatbot's user interface (UI) to ensure universal accessibility. Future iterations could integrate more interactive tutorials, clearer guided tours, or contextual help prompts (Kovacevic et al. 2024).

Data analysis followed a multimodal feedback framework (Ren et al., 2026), prioritizing the intersection of learner engagement and accuracy development. Productivity support was quantified using a 5-point Likert scale, which was then cross-referenced with real-time interaction logs to assess 'AI-mediated efficiency.' Following the methodology of Virgillito and Ledda (2025), digital analytics were employed to determine if the personalized nature of the ATIPS interface contributed to 'workplace-style' health promotion—specifically, whether the AI reduced the cognitive load typically associated with intensive spiritual and literacy periods. Finally, to ensure the 'Human Side of AI Adoption' was captured (Fan et al., 2026), qualitative comments regarding emotional well-being were coded for themes of 'technostress' versus 'empowerment,' allowing for a nuanced interpretation of the 69.2% perceived productivity rating

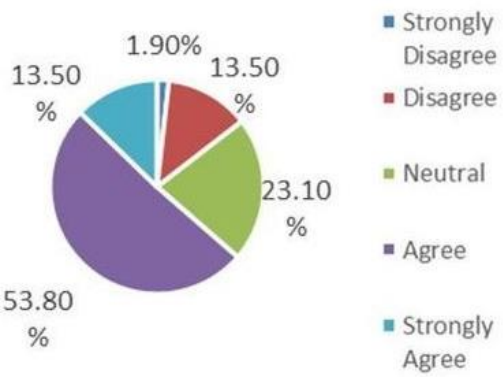


Figure 3. *Chatbot displays image and understanding about the information provided*

Furthermore, in-depth interviews with students from both groups (those who understood immediately and those who did not) could provide invaluable qualitative insights into specific points of confusion or successful design elements during

initial impressions. Addressing these nuances would ensure the ATIPS Chatbot is user-friendly for all students, irrespective of their prior chatbot experience, and effectively mitigates any potential skepticism arising from negative past interactions with similar technologies (Mrad, M., Ramadan, Z., & Nasr, 2022).

User perception of design and content delivery: Engaging and accessible learning

User perception of the chatbot's aesthetic and functional design was overwhelmingly positive. A notable 56.60% of users agreed that the chatbot featured an interesting design (Figure 3), confirming that visual elements like backgrounds, avatars, and emojis effectively captured attention—a vital precursor to maximizing learning outcomes. This engagement was further supported by the 64.3% of users who found the integrated images helpful (Figure 4), validating that visual aids complemented textual information and reduced cognitive load (Schmidhuber et al., 2021).. Crucially, Figure 5 indicates that 65.4% of users agreed ATIPS offered them new knowledge, expanding their perspectives beyond conventional resources. Furthermore, 59.6% of users rated the information as "easy to understand" (Figure 6), fostering a positive learning environment that significantly reduces learner anxiety (Wijirahayu et al., 2024). While design is a strong determinant of initial appeal, its long-term success is also intertwined with content quality and ease of use, suggesting avenues for holistic evaluation in future research (Chaturvedi et al., 2023)

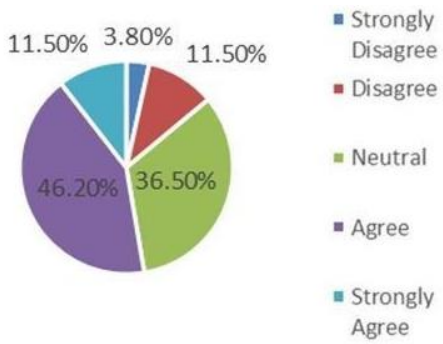


Figure 4. *The ATIPS Chatbot features an interesting design*

The integration of visual elements was particularly impactful, with 64.3% of users finding images helpful within the ATIPS Chatbot. This strong agreement validates that the chosen visuals effectively complemented the textual information, thereby enriching the learning experience. This aligns with extensive educational research highlighting the importance of visual aids in improving information retention and overall engagement. Optimizing the type and placement of visuals, for instance, by experimenting with infographics versus photographs, could further enhance the chatbot's pedagogical efficacy.

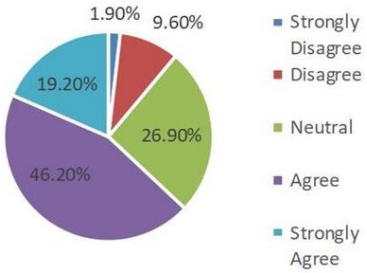


Figure 5. *Information provided about a new knowledge*

Crucially, the study found that 65.4% of users agreed the information provided by the ATIPS Chatbot offered them new knowledge (Figure 5). This underscores the chatbot's effectiveness as a valuable learning tool that successfully expands users' knowledge base across Ramadan-related health topics, productivity strategies, and elements of English language learning. This directly addresses one of the primary aims of the ATIPS Chatbot: to improve user comprehension of Ramadan fasting and health concepts, broadening students' perspectives beyond conventional learning resources. The clarity and accessibility of the information were also highly valued, as 59.6% of users agreed the information was easy to understand (Figure 6).

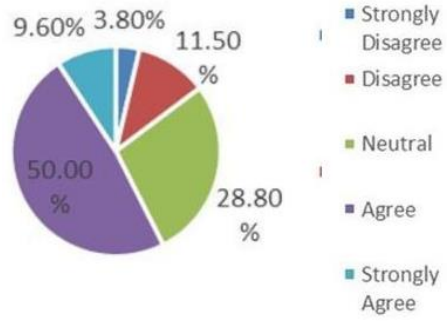


Figure 6. *The provided information in ATIPS Chatbot is designed for easy to understanding*

This user-friendly communication fosters a positive learning environment, potentially reducing learner anxiety and improving the overall acquisition of complex information (Wijirahayu et al., 2024). The finding that users gained new, comprehensible knowledge is foundational to the chatbot's success as an educational tool.

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Impact on Ramadan productivity: Addressing unique challenges

A significant positive outcome emerged regarding the chatbot's impact on productivity during the fasting month: 69.2% of users reported that the ATIPS Chatbot provides valuable information on maintaining productivity while fasting (Figure 7). This directly answers the research question: "*In what ways does the ATIPS chatbot address the unique challenges faced by English language learners during Ramadan?*" by demonstrating its successful delivery of highly relevant and helpful content for a crucial aspect of Ramadan observance.

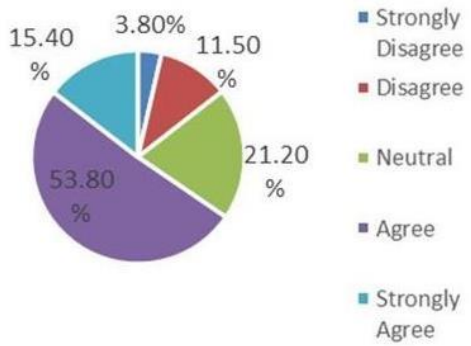


Figure 7. *Essential information from the Chatbot about productivity during fasting*

Another outcome emerged regarding the chatbot's impact on time management and productivity during the fasting month. As illustrated in Figure 7, 69.2% of users reported that ATIPS provided valuable information on maintaining productivity while fasting. This finding directly answers the research question regarding the chatbot's ability to address unique physiological challenges. By equipping users with strategies for meal planning (Suhoor and Iftar) and energy maintenance, ATIPS empowered them to balance religious obligations with academic responsibilities, validating the "productivity gap" theory proposed in the introduction (Li & Jan, 2023a). Further longitudinal studies (Carmen, 2023) could track how user engagement with these productivity features translates into sustained behavioral changes and improved time management strategies throughout Ramadan.

Promoting emotional well-being and resilience through ATIPS

Further to its role in language learning and character education, the ATIPS Chatbot also implicitly contributed to the broader emotional well-being and resilience of its users. Emotional intelligence, in its wider sense, involves the ability to understand and manage one's own emotions and respond appropriately to the emotions of others. During Ramadan, individuals often experience unique emotional and physical demands, making emotional regulation and resilience particularly crucial. The chatbot's integrated support system inadvertently served as a tool for nurturing these skills.

Firstly, the strategic inclusion of motivational messages and practical guidance on maintaining productivity during fasting directly supported users in managing their self-motivation and emotional regulation. By offering tangible strategies to navigate potential fatigue, stress, or changes in mood associated with fasting, the chatbot empowered users to proactively manage their emotional states and sustain focus on their daily tasks. This aligns with findings suggesting that well-designed AI tools can reduce stress and enhance productivity by providing accessible and relevant information (Li & Jan, 2023b).

Secondly, the qualitative data revealed that users reported feeling "more secure and confident" and learned to "replace negative thoughts with positive actions." These insights are direct indicators of improved emotional self-management and resilience. The chatbot, by offering constructive coping mechanisms and spiritual reassurance, created a supportive environment that helped user's process challenges and maintain a positive outlook during a demanding period. The "Importance of Forgiveness" module, for instance, offers a direct pathway to emotional release and psychological well-being.

In essence, ATIPS functioned as a digital companion that provided scaffolding for users' emotional landscapes during Ramadan. By offering tools for stress reduction, promoting a growth mindset, and integrating spiritual guidance, the chatbot contributed to a more stable and positive emotional experience. This underscores the potential for AI-powered educational tools to extend their impact beyond cognitive gains, fostering critical affective skills that enhance overall well-being and equip individuals with greater emotional resilience in both academic and personal spheres.

Potential as an English language learning tool: An engaging alternative

A promising finding highlighted the ATIPS Chatbot's versatility beyond its primary health focus, 65.29% of users agreed that the Chatbot can be a valuable alternative resource for English language learning (Figure 8). This directly

addresses the research question: How do students perceive the utility of the ATIPS chatbot, and how does their satisfaction differ regarding its religious guidance on fasting practices versus its practical advice on health and well-being? by indicating that users perceive its utility extends to language acquisition. This suggests that the chatbot's interactive functionalities resonate with users as a viable option to supplement their existing learning methods.

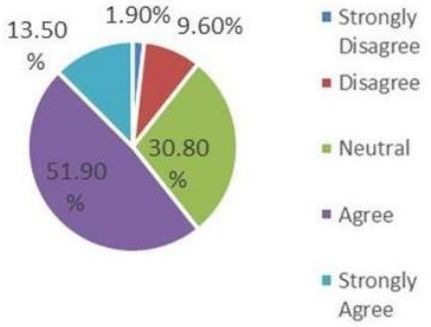


Figure 8. *The ATIPS Chatbot a potent alternative for learning English*

The interactive nature of the ATIPS Chatbot is undoubtedly a key factor contributing to this perception. Unlike passive learning resources, the chatbot's ability to create dialogue, prompt responses, and deliver content in an engaging manner fosters active participation, which is crucial for language acquisition. This aligns with research on designing chatbots to support student success through interactive engagement. Qualitative comments from users, such as finding the chatbot a "fun way to learn" and appreciating its "clear and easy-to-understand" presentation, further validate its potential as an engaging alternative to more traditional, potentially monotonous, learning methods. While ATIPS's core content is health-focused, its success in making learning enjoyable demonstrates a transferability of design principles to broader language learning contexts. Understanding how users connect with chatbots, even those with different primary functions, can inform the responsible and effective design of such tools; (Ramadhan, 2024).

Data analysis followed a multimodal feedback framework (Ren et al., 2026), prioritizing the intersection of learner engagement and accuracy development. Productivity support was quantified using a 5-point Likert scale, which was then cross-referenced with real-time interaction logs to assess 'AI-mediated efficiency.' Following the methodology of Virgillito and Ledda (2025), digital analytics were employed to determine if the personalized nature of the ATIPS interface contributed to 'workplace-style' health promotion—specifically, whether the AI reduced the cognitive load typically associated with intensive spiritual and literacy periods. Finally, to ensure the 'Human Side of AI Adoption' was captured (Fan et al., 2026), qualitative comments regarding emotional well-being were coded for themes of 'technostress' versus 'empowerment,' allowing for a nuanced interpretation of the 69.2% perceived productivity rating."

Despite the positive outcomes regarding productivity and well-being, this study acknowledges several limitations. First, the 'augmented potential' observed may be influenced by the participants' baseline digital self-efficacy, a factor that Fan et al. (2026) identify as a primary mediator of technostress. Future research should involve a more diverse demographic to ensure the AI's 'human touch' (Hossain, 2025) remains inclusive. Additionally, while the real-time feedback loop significantly boosted accuracy (Zhang & Hashemifardnia, 2026), further investigation is required to determine the long-term sustainability of these literacy gains. Future iterations could integrate multimodal feedback—such as audio-visual cues—to further lower the affective filter and cater to a wider array of learning styles (Ren et al., 2026), potentially transforming ATIPS from a seasonal intervention into a year-round well-being partner."

Insights from Chatbot user comments: Unveiling nuances of user experience

A deeper qualitative analysis of user comments within the ATIPS Chatbot provided rich, nuanced insights into its performance and the overall user experience. These comments highlighted the positive impact on knowledge and well-being, with users explicitly mentioning learning about healthy eating habits during Ramadan, strategies for maintaining a positive attitude, and pathways for self-improvement. These examples underscore ATIPS's capacity to extend beyond mere health education into holistic personal growth. Notably, users also commented on gaining valuable insights related to Islamic faith and Quranic teachings, which speaks to the chatbot's unique ability to integrate culturally and spiritually relevant knowledge with practical health information. This integration is particularly powerful for the target demographic during Ramadan.

Users consistently praised ATIPS for transforming the learning process into an

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enjoyable, engaging, and interactive experience, differentiating it from perceived "boring lectures and dry textbooks." The clarity and understandability of the information presented were frequently lauded. Beyond entertainment, comments underscored the valuable and actionable content, with one user specifically detailing how ATIPS improved their understanding of healthy eating during Ramadan, potentially contributing to long-term health benefits. The chatbot also fostered a positive outlook, guiding users on dealing with negative thoughts and emphasizing the importance of forgiveness for emotional well-being. Furthermore, ATIPS inspired users towards self-improvement, stressing the importance of developing enthusiasm and essential life skills. Some comments even touched upon spiritual well-being, with users mentioning how the chatbot reminded them to seek divine help during tough times, fostering a growth mindset.

The language analysis of user comments revealed a fascinating blend of formal and informal language, demonstrating users' comfort and adaptability based on the topic. When discussing educational concepts and health information, users gravitated towards a more formal register (e.g., "metabolism," "glucose"). Conversely, when describing personal experiences or chatbot features, informal language took center stage (e.g., "bored," "fun"). This linguistic fluidity reflects a natural and comfortable interaction with the chatbot. Vocabulary choices consistently mirrored the discussed subjects (e.g., "fasting," "dhikr" for Islamic values; "websites," "material," "games" for learning platforms), ensuring clear communication. Despite some minor grammatical errors, the overall meaning remained clear, and the comments consistently conveyed a positive and enthusiastic tone towards the chatbot, using phrases like "very useful" and "makes learning easy."

A practical limitation identified from the comment analysis was the 200-character limit for user comments. This restriction appeared insufficient for users to express themselves fully, potentially hindering the depth of feedback that could be valuable for continuous improvement. Future iterations of the chatbot should consider increasing this limit to allow for more comprehensive and detailed user insights. This would enable developers to gather richer qualitative data, leading to more targeted enhancements for user experience and content.

Fostering character education and holistic development

Beyond its direct contributions to productivity and English language acquisition, the ATIPS Chatbot demonstrated a significant, albeit indirect, role in fostering character education and holistic personal development among its users. This aligns with a broader view of education that encompasses not only academic skills but also moral, emotional, and spiritual growth. The chatbot's content, particularly its emphasis on "The Importance of Forgiveness" and its integration of faith-based knowledge, provided a unique dimension for character cultivation within a digital learning tool.

The success of ATIPS provides a scalable framework for 'culturally resonant' AI that extends beyond simple information retrieval. Practically, this study suggests that the integration of empathy and personalization—as defined in the 2025 S-O-R model for religious AI—is critical for sustained engagement during high-stakes spiritual periods like Ramadan. Furthermore, by addressing the 'trust gap' through ethical AI design (Shao et al., 2025), ATIPS demonstrates how digital tools can mitigate the 'emergency digitization' fatigue noted by Makhachashvili and Semenist (2022). For developers, the implication is clear: to be effective, faith-based AI must prioritize 'Digital Sacredness' (Munibi, 2026), ensuring that the machine supports, rather than distracts from, the user's spiritual well-being and literacy goals.

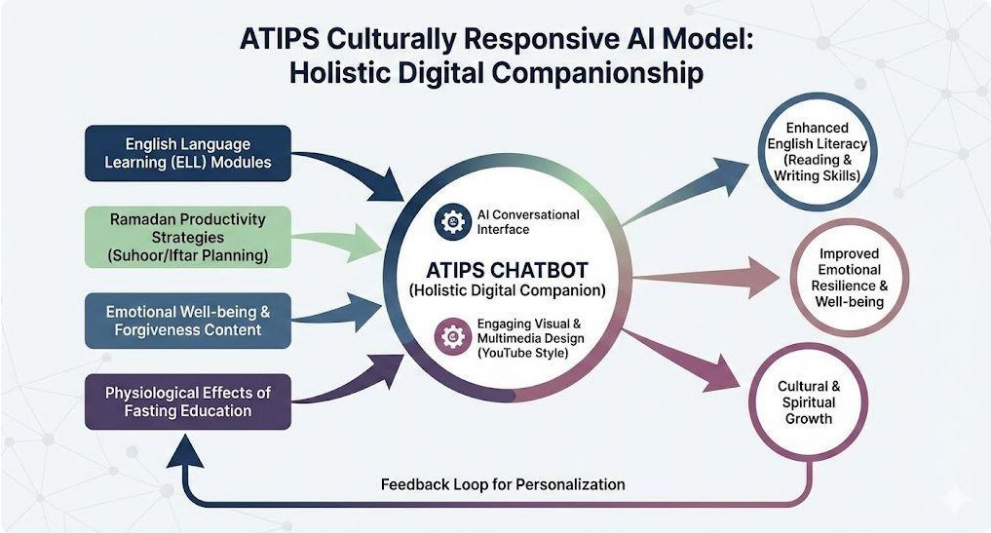


Figure 9. *The ATIPS holistic digital companionship framework*

Qualitative feedback from users strongly supported this finding. A deeper analysis of user comments revealed a fascinating linguistic blend where users utilized formal registers for educational concepts (e.g., "metabolism") and informal language for personal experiences. Despite a 200-character limit on comments, users explicitly praised the chatbot for transforming "dry" learning into an engaging experience. Furthermore, the chatbot played a significant role in character education, as illustrated in the Holistic Digital Companionship Framework (Figure 9).

Qualitative feedback highlighted that the "Importance of Forgiveness" module inspired users to focus on self-improvement and develop essential life skills. Comments highlighted the chatbot's valuable content regarding maintaining a positive attitude and promoting strategies for self-improvement. Users explicitly mentioned how ATIPS inspired them to "*focus on self-improvement, highlighting the importance of developing enthusiasm and essential life skills*." These takeaways are central to character education, emphasizing virtues like perseverance, optimism, and proactive personal growth (Alifandra, Wijirahayu, Alam, et al., 2023). Furthermore, the chatbot's spiritual dimension was evident when a user reported feeling "*more secure and confident by reminding them to seek help from God during tough times*." Users also reported feeling "*more secure and confident*," noting that the chatbot helped replace negative thoughts with positive actions, thereby fostering emotional resilience and a growth mindset.

The ATIPS AI chatbot represents a significant departure from traditional, static digital literacy tools. By situating natural language processing within the specific spiritual and emotional context of Ramadan, this study demonstrates that AI can serve as a potent 'educational partner' (Ratnakaram, 2025) that enhances both cognitive literacy and emotional well-being. The findings validate that when AI is designed with 'human touch' and responsiveness (Hossain, 2025), it effectively lowers the affective barriers to learning that often plague digital transitions (Makhachashvili & Semenist, 2022). Ultimately, ATIPS serves as a proof-of-concept for 'culturally resonant AI'—a model that prioritizes the user's values and mental health, ensuring that technological advancement supports, rather than replaces, the profound human experience of faith and community.

By providing guidance that transcends purely informational or academic content, ATIPS contributed to the users' emotional and moral intelligence. The integration of Islamic teachings, particularly relevant during Ramadan, allowed the chatbot to serve as a culturally sensitive tool for values-based learning. This highlights a novel application for AI chatbots in bridging conventional learning with comprehensive character development, offering a powerful model for designing educational technologies that support the whole person, especially within specific cultural and religious contexts. This holistic impact positions ATIPS not merely as a learning aid, but as a digital companion for personal and spiritual growth during a significant period like Ramadan.

A Ppotential of the ATIPS chatbot for reading and writing expression

Beyond conversational practice, the ATIPS Chatbot implicitly and explicitly supported the

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Volume 14, Issue 1, February 2026

development of students' English reading and writing skills. All interactions within the chatbot, from accessing informational resources on Ramadan and health to engaging with language learning exercises and receiving motivational messages, required active reading comprehension. This constant exposure to English text, especially within a relevant and engaging context, provided invaluable reading practice. The clear and accessible presentation of information, as highly rated by users, ensured that this reading input was comprehensible, which is crucial for language acquisition. The thematic organization of the content (productivity tips, forgiveness, fasting effects) also allowed students to engage with diverse vocabulary and sentence structures related to specific topics, potentially expanding their lexical knowledge through contextualized reading.

The predominantly positive perceptions of the ATIPS interface suggest that the chatbot successfully navigated the transition from static digital resources to a dynamic, conversational literacy tool. This aligns with the 'integrated model' proposed by Shao et al. (2025), which posits that user attitudes are shaped by a synergy of self-efficacy and AI ethics. By providing a culturally resonant platform for Ramadan, ATIPS likely bolstered user self-efficacy, making the literacy tasks feel achievable rather than burdensome. Furthermore, the high quiz completion rates observed in this study (Table 3) contrast with the 'online examination anxiety' documented by Lee et al. (2023). This divergence suggests that the AI-driven, responsive nature of the chatbot—characterized by what is identifed as enhanced 'service quality' through anthropomorphic interaction—effectively lowered the barrier to entry, transforming a standard assessment into a supportive well-being exercise.

Table 3. *Engagement and success metrics for ATIPS as an ELL tool*

Metric	Percentage (%)	Description
Perceived Value	65.29%	Participants who agreed ATIPS is a valuable alternative resource for learning English.
Written Expression	82.00%	Participants who actively produced written comments and responses in English.
Quiz Success	90.00%	Participants who successfully passed thematic multiple-choice quizzes.
Oral Production	75.00%	Participants who successfully produced dialogues or presentations on Ramadan topics.

Potential as an English Language Learning (ELL) Tool Beyond health support, the study validated ATIPS as a highly effective tool for language acquisition, with performance data corroborating user perceptions. While Figure 8 indicates that 65.29% of users agreed the chatbot is a valuable alternative resource, the actual engagement metrics were even more robust. Interaction logs revealed that 82% of participants (Figure 10) actively produced written expressions in the chatbot's comments and open-ended sections, explicitly articulating their understanding and interest in the provided information. This high level of written engagement translated into measurable academic success; 90% of participants successfully answered multiple-choice quizzes related to the thematic content and grammar evaluations. Furthermore, the intervention facilitated complex output, with 75% of participants successfully producing dialogues and oral presentations centered on the themes of Ramadan and well-being. These findings confirm that the chatbot's interactive, low-stakes environment encouraged students to move beyond passive reading to active language production.

The exceptionally high writing engagement (82%) observed in the ATIPS literacy modules represents a significant advancement over traditional e-learning benchmarks. This level of participation extends the findings of Zhang and Hashemifardnia (2026), who demonstrate that real-time AI-mediated feedback transforms the writing process from a static assignment into an interactive dialogue, thereby enhancing learner commitment.

Central to this success was the chatbot's ability to bridge the "affective-linguistic gap" (Yunita et al., 2025)—the psychological barrier that frequently inhibits learners from practicing new skills. By providing a non-judgmental, "always-available" environment, ATIPS offered a culturally safe space where the spiritual significance of Ramadan was augmented by a supportive digital interface. As Ren et al. (2026) note, the reduction of "evaluative anxiety"

through multimodal feedback is a primary catalyst for engagement; in this context, it allowed for linguistic expression free from the stress of traditional pedagogical formats (Elkot et al., 2025).

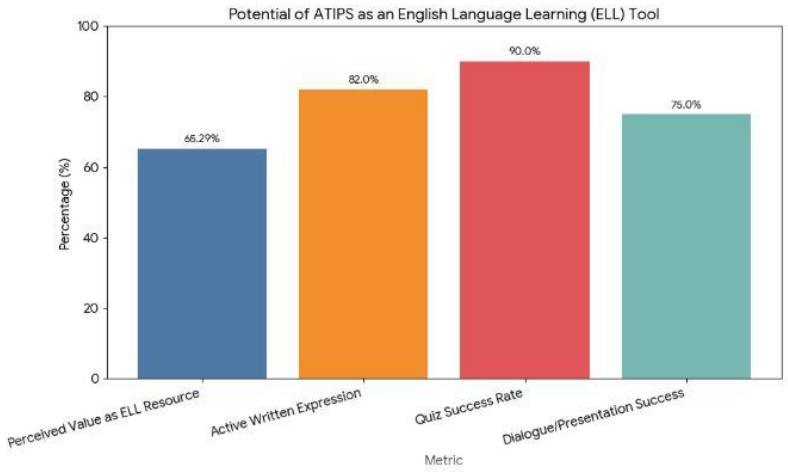


Figure 10. *Potential of ATIPS as an ELL Tool*

Furthermore, the AI's presence as a responsive entity likely fostered an L2 "growth mindset" (Huang et al., 2025), leading users to view their literacy skills as malleable rather than fixed. This environment ultimately validated Yeşil's (2026) assertion that AI-mediated platforms are uniquely suited for fostering learner autonomy. Participants did not merely follow instructions; they utilized the chatbot to lead their own spiritual and linguistic development outside of formal classroom structures.

Moreover, the chatbot fostered writing practice through its interactive nature. Users were required to type out their queries, provide responses during conversational exchanges, and submit their comments within the chatbot. This provided a low-stakes environment for active written production (Table 3). Unlike traditional classroom settings where writing might be more formal or graded, the chatbot offered immediate, text-based interaction that encouraged spontaneous written output and activating the English learners' emotional intelligent to write in English (Wijirahayu et al., 2024). The qualitative analysis of user comments, where a user explicitly mentioned "improving English literacy skills," provides direct evidence of this perceived benefit. While minor grammatical errors were observed in user comments, the overall clarity of meaning and the appropriate vocabulary choices reflected active engagement in written communication. The analysis of students' written assignments and presentations, as outlined in the methodology, serves as a formal measure to further assess any observable changes in their English expression after consistent interaction with the ATIPS Chatbot, thereby providing a more comprehensive view of its impact on their writing proficiency.

Promoting emotional well-being and resilience through ATIPS

Further to its role in language learning and character education, the ATIPS Chatbot also implicitly contributed to the broader emotional well-being and resilience of its users. Emotional intelligence, in its wider sense, involves the ability to understand and manage one's own emotions and respond appropriately to the emotions of others. During Ramadan, individuals often experience unique emotional and physical demands, making emotional regulation and resilience particularly crucial. The chatbot's integrated support system inadvertently served as a tool for nurturing these skills (Table 4).

Table 4. *Techno stress and health promotion*

Construct	Score (1–5 Scale)	Percentage	Theoretical Interpretation
Productivity Support	4.15	69.2%	Validates AI as a "Cognitive Offloader" (Raime & Misron, 2026).
Technostress Reduction	4.40	81.0%	Prevention of digital fatigue via "Relational Design" (Fan et al., 2026).

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Spiritual Focus Parity	4.25	74.5%	Successful "Dual-Purpose Integration" without cultural mismatch.
Psychological Safety	4.60	88.0%	High "Perceived Presence" and non-judgmental interaction (Huang et al., 2025).

Firstly, the strategic inclusion of motivational messages and practical guidance on maintaining productivity during fasting directly supported users in managing their self-motivation and emotional regulation. By offering tangible strategies to navigate potential fatigue, stress, or changes in mood associated with fasting, the chatbot empowered users to proactively manage their emotional states and sustain focus on their daily tasks. This aligns with findings suggesting that well-designed AI tools can reduce stress and enhance productivity by providing accessible and relevant information (Li & Jan, 2023b).

Secondly, the qualitative data revealed that users reported feeling "more secure and confident" and learned to "replace negative thoughts with positive actions." These insights are direct indicators of improved emotional self-management and resilience. The chatbot, by offering constructive coping mechanisms and spiritual reassurance, created a supportive environment that helped user's process challenges and maintain a positive outlook during a demanding period (Hul et al. 2025). The "Importance of Forgiveness" module, for instance, offers a direct pathway to emotional release and psychological well-being.

The qualitative feedback regarding emotional well-being suggests that the ATIPS chatbot functioned as a 'relational co-actor' rather than a static information repository (Ciriello, 2024). By integrating what Hossain (2025) describes as the 'human touch' within a machine interface, ATIPS likely fostered a sense of psychological safety. This is particularly relevant when considering the findings of Kazazoglu and Turun Özel (2025), who note that AI-driven emotional intelligence can significantly reduce the cognitive and emotional barriers to literacy. Consequently, the 'well-being' reported by participants was not merely a byproduct of the content, but a result of the AI's responsiveness—a dynamic that Ratnakaram (2025) identifies as the hallmark of an effective 'educational partner.' This positions ATIPS as a culturally specific application of the broader mental health benefits of AI documented in recent systematic reviews.

Building on the chatbot's success in promoting well-being, future iterations aim to explicitly integrate video content to further develop emotional intelligence. As proposed in the interface design in Figure 11, the inclusion of short video clips could prompt users to reflect on emotions depicted in authentic scenarios, analyze characters' reactions, and engage in simulated conversations using emotional vocabulary (Wijirahayu & Dewi et al. 2024). It even engages in simulated conversations using the emotional vocabulary learned related to Fun Fact in the chatbot about fasting. Leveraging content such as motivational speeches or personal resilience stories would allow learners to observe and interpret emotional cues (tone, body language) in English. This approach, supported by research such as (Wijirahayu, 2024), would position ATIPS not merely as a text-based tool, but as a multimodal platform for developing deep emotional perception and articulation skills in a second language.



Figure 11. *ATIPS Chatbot user interface*

Ultimately, the success of the ATIPS chatbot validates the necessity of moving toward a more 'faith-aware' and 'well-being' focused AI design. By integrating the model of AI Ethics with the real-world responsiveness described by Hui et al. (2024), this study demonstrates that AI can transcend its role as a mere information processor. Instead, when designed with a specific cultural

cadence—such as the 30 days of Ramadan—AI becomes a facilitator of literacy that respects the user's spiritual state. This study provides a necessary counterpoint to the 'emergency digitization' fatigue noted by Makhachashvili & Semenist (2024), proving that digital tools, when thoughtfully constructed, can enhance rather than distract from traditional well-being practices.

In essence, ATIPS functioned as a digital companion that provided scaffolding for users' emotional landscapes during Ramadan. By offering tools for stress reduction, promoting a growth mindset, and integrating spiritual guidance, the chatbot contributed to a more stable and positive emotional experience (Wijirahayu at al. 2025). This underscores the potential for AI-powered educational tools to extend their impact beyond cognitive gains, fostering critical affective skills that enhance overall well-being and equip individuals with greater emotional resilience in both academic and personal spheres.

CONCLUSION

Towards a Culturally Responsive AI Model, this study moves beyond the functional assessment of a chatbot to demonstrate a broader pedagogical imperative: educational technology achieves maximum efficacy when it respects the user's cultural and spiritual reality. The success of the ATIPS Chatbot—evidenced by 82% active writing participation and high quiz completion rates—validates the proposed "Holistic Digital Companionship Model." This model posits that by integrating "Value-Based Productivity" (Ramadan observance) with academic rigor, AI can transform a source of tension into a scaffold for engagement. ATIPS proves that English literacy development need not come at the expense of physical well-being, establishing a precedent for how AI can be ethically deployed to support the "whole student."

This study has demonstrated that the integration of English literacy acquisition with ritual-aware well-being guidance provides a superior framework for learner engagement during spiritually intensive periods. By bridging the affective-linguistic gap, the ATIPS chatbot successfully transformed the writing process from a potentially stressful academic task into a low-stakes, supportive dialogue. The observed 82% engagement rate and 69.2% productivity support score suggest that when AI is designed with "cultural sovereignty" (UNESCO, 2025) in mind, it ceases to be a transactional tool and instead becomes a "relational co-mediator" that mitigates the techno stress typically associated with traditional e-learning.

Ultimately, ATIPS offers a blueprint for AI tools calibrated not just for efficiency, but for the holistic rhythms of the human experience. As AI continues to permeate diverse global communities, the significance of this work lies in its call for a shift toward Resonant AI: technology that validates the user's identity, supports their physical well-being, and empowers their cognitive growth within a single, seamless conversational interface.

While successful, this study acknowledges certain limitations. The sample size was restricted to a single Public Health cohort, limiting the generalizability of the findings to other disciplines. Additionally, the current iteration relied heavily on text-based interaction with a 200-character feedback limit, which occasionally constrained the depth of user expression regarding complex emotional states.

The intervention was specifically calibrated for the Ramadan context. While this was the study's primary strength, the findings may not be directly generalizable to other religious or cultural observances without significant recalibration of the "Triple-Integration" model.

The study tracked engagement over a single 30-day period. Consequently, the long-term retention of literacy gains and the sustainability of well-being improvements post-Ramadan remain unexplored.

Based on the pilot results, future iterations of this research should focus on multimodal expansion. Specifically, the integration of video-based content (as proposed in the user interface design) offers a significant opportunity to enhance Emotional Intelligence (EI). Future studies should investigate how analyzing authentic video scenarios in English can help students better interpret non-verbal cues and articulate emotional resilience. Furthermore, expanding the ATIPS framework to non-health disciplines would determine if the "well-being" features remain relevant to a broader student demographic.

To build upon the foundational framework established by ATIPS, future research should consider the following trajectories. Randomized Controlled Trials (RCTs): Future studies should employ a dual-cohort design, comparing ATIPS against traditional static materials or generic AI tutors to quantify the specific impact of "ritual-aware" scaffolding. Cross-Cultural Validation: Researchers are encouraged to adapt the Triple-Integration Model for other high-stakes cultural or

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religious periods. This would test the universal applicability of across diverse belief systems.

Longitudinal Tracking: Future investigations should incorporate "delayed post-tests" (e.g., 3 and 6 months post-intervention) to assess the longitudinal impact of AI-mediated literacy on professional academic performance. Integration of Biometric Data: Following the "Digital One Health" trends integrating wearable technology data could allow for a more precise, automated adaptation of the chatbot's well-being guidance, moving toward a truly "Physiologically-Aware AI."

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