Al-Muhajirin International Conference

LINTAS-QS: Integrating Qur'anic and Sirah Literacy through Project-Based Learning and Role-Playing with Augmented Reality

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Abstract
Qur'anic and sīrah literacy play an essential role in shaping students' understanding of Islam and nurturing their character. However, challenges remain in Islamic education, particularly in fostering deep engagement and meaningful comprehension of Islamic values. This study explores the integration of Augmented Reality (AR) into a Project-Based Learning framework combined with Role-Playing Discussions to enhance Qur'anic and sīrah literacy, while cultivating students' Islamic character. Using a qualitative analysis method and a design thinking approach—empathize, define, ideate, and prototype—this research presents an innovative educational model. Data were gathered through literature studies and analyzed by categorization and interpretation. The findings show that AR significantly enhances students' engagement and comprehension of Islamic teachings and values such as honesty, responsibility, and empathy. The interactive nature of AR, especially when coupled with role-playing and project-based tasks, creates an immersive learning environment that bridges traditional teachings with modern educational practices. This study offers a pioneering approach in Islamic education by merging technology with active learning strategies to foster moral development and critical thinking.

Keywords: augmented reality; Islamic education; project-based learning; Qur'anic literacy; role-playing

Introduction

Qur'anic and sīrah literacy play a pivotal role in shaping students' understanding of Islam and in cultivating their moral character. Both components are instrumental in nurturing a strong Muslim identity and equipping students with the necessary knowledge to live in accordance with Islamic teachings. Character and morality are deeply interconnected; a virtuous character encourages moral behavior, whereas a poor

character may lead to ethical violations and reprehensible conduct. Contemporary realities highlight a moral decline among students, as evidenced by a recent viral incident in which three students assaulted a teacher in class while other students watched passively (Suzatri, 2025).

With the rapid advancement of society, Islamic education is increasingly challenged to foster deeper student engagement and comprehension of Islamic values. One of the primary challenges is the lack of innovation in instructional methods, which often results in student boredom, low motivation, and difficulty in relating Islamic teachings to daily life. This underscores the urgent need for innovative and engaging learning strategies. In response, technology can serve as a medium to enhance the quality and appeal of learning environments.

Augmented Reality (AR) has emerged as a promising solution, particularly for fostering student character development in classroom settings. This approach is further supported by the theoretical foundations of Project-Based Learning (PBL), which emphasizes learning through authentic projects, and Role-Playing, which facilitates the internalization of values through interactive simulations. AR can serve as a bridge to create more meaningful and engaging learning environments. Nevertheless, the central challenge lies in how to effectively integrate AR with PBL and Role-Playing Discussions to maximize its impact on character education. This study seeks to address this challenge by designing and evaluating an innovative learning solution that combines AR, PBL, and Role-Playing to enhance students' understanding of moral and ethical values.

Given the alarming moral decline among students, this study aims to contribute significantly to the development of integrative pedagogical methods in Islamic education by combining Qur'anic and sīrah literacy through PBL and Role-Playing Discussions supported by AR technology. The research addresses the limitations of conventional teaching methods, which often fail to deliver comprehensive understanding or promote student engagement, particularly in relation to Islamic behavior and character development across cognitive, affective, and psychomotor domains. Current approaches tend to rely on one-way communication and underutilize interactive or technologically enriched strategies that could provide deeper learning experiences.

A review of existing studies indicates that the application of AR in Islamic education—especially in the context of Qur'anic and sīrah learning—remains relatively limited and primarily focuses on cognitive aspects via textual tools such as educational flashcards (Masrizal, 2023; Rizal et al., 2024). These tools often neglect experiential dimensions and the potential of role-playing techniques. By employing AR-based PBL and Role-Playing, this study seeks to optimize content visualization, allowing students to engage with learning materials in a more dynamic and immersive way. Therefore, LINTAS-QS introduces a more interactive approach that aims to deepen students' comprehension, foster active participation, and develop critical thinking skills within a technology-enhanced religious learning framework.

Methods

This study employed a qualitative analysis method using a design thinking approach. The data were collected through literature review, serving as both the foundation and the theoretical framework to guide the development of innovative

educational solutions. A range of relevant scholarly sources was utilized to strengthen the understanding of the identified problems and proposed interventions. The data collected were then analyzed through a process of categorization and interpretation, allowing for systematic analysis and the derivation of valid and relevant conclusions. The design thinking approach—widely used in various industries to promote innovation and process improvement—was adapted here as a problem-solving framework within the educational context (Indrianto et al., 2024).

In educational settings, design thinking generally comprises stages such as problem identification, solution development, and iterative testing to enhance effectiveness. The process begins with the **empathize** stage, which involves gathering qualitative insights through literature analysis aimed at identifying and understanding the core issues. The subsequent **define** stage highlights the growing decline in students' moral values and character, underscoring the need for effective teaching strategies—especially in Islamic education contexts—to improve students' *adab* and ethical behavior through Qur'anic and *sīrah* instruction.

During the **ideate** phase, alternative solutions were explored, ultimately leading to the proposed integration of Qur'anic and *sīrah* literacy with Project-Based Learning (PBL) and Role-Playing, supported by Augmented Reality (AR). This integrative approach aims to provide students with an immersive and interactive learning experience. The final **prototype** stage involves developing and testing a limited-scale instructional model to evaluate its effectiveness. This phase is intended to assess the integration of Qur'anic and *sīrah* literacy with PBL and Role-Playing using AR, allowing for feedback collection and refinement of the proposed solution.

Discussion and Analysis
The Effectiveness of Augmented Reality (AR) in Islamic Education
Augmented Reality (AR) is an increasingly advancing technology with significant potential to enhance the effectiveness of learning, including in Islamic education. It creates more interactive learning experiences by integrating real-world elements with digital information accessible via devices such as smartphones, tablets, or AR headsets. In the context of Islamic education, AR facilitates students' understanding of Qur'anic and *sīrah* literacy in ways that are engaging, interactive, and applicable to real life (Safira et al., 2022; Rinaldi et al., 2024).

A critical aspect of Islamic education is the effective internalization of moral and character values. With the rapid development of technology, conventional methods that rely solely on text and lectures are often unappealing to students, resulting in boredom and lack of motivation. AR offers an innovative solution by delivering visual and interactive learning experiences that improve comprehension and student engagement. A study by Sigit Purnama et al. (2021) demonstrated that the implementation of AR in Islamic religious education significantly improved students' understanding compared to traditional teaching methods.

In Qur'anic exegesis (*tafsīr*) learning, AR can provide deeper and more meaningful experiences. For instance, AR allows students to access interactive *tafsīr*, where Qur'anic verses are presented alongside translations, scholarly interpretations, and visual illustrations that depict the meanings of the verses. This helps students grasp historical contexts and the deeper meanings of the texts. Yusuf (2024) found that the

use of AR in *tafsīr* studies increased students' participation and motivation in understanding Qur'anic content.

Similarly, in the study of the Prophet's biography (*sīrah*), AR helps students visualize the life journey of Prophet Muhammad in a more tangible way. The technology enables interactive simulations of significant historical events, such as the *hijrah* to Medina, the Battle of Badr, or the Conquest of Mecca (*Fatḥ Makkah*). As a result, students are not only reading historical narratives but also virtually experiencing these events, which strengthens memory retention and deepens understanding of Islamic history (Masrizal, 2023; Rizal et al., 2024).

Beyond comprehension, the implementation of AR has also shown a positive impact on students' interest in learning. A survey conducted by Tamama Hafizah et al. (2024) among Islamic education teachers revealed that approximately 75% believed AR increases student engagement. This aligns with findings from broader educational technology research suggesting AR improves student motivation and focus (Radu, 2014).

Despite its benefits, the application of AR in Islamic education faces certain challenges. However, AR can be even more impactful when combined with Project-Based Learning (PBL) and Role-Playing Discussions. PBL engages students in real-world projects that connect Islamic concepts with everyday life. For example, students can create multimedia AR projects that visually and interactively explain Islamic teachings (Saadiyah & Anjarwati, 2022). Meanwhile, Role-Playing Discussions allow students to embody roles in Islamic ethical scenarios, such as simulating *shūrā* (consultative decision-making) or moral dilemmas in daily life (Ferianti, 2024; Mungawanah & Magalhaes, 2024).

The success of AR implementation in Islamic education is also highly dependent on technological infrastructure. The recent development of 5G networks has significantly enhanced internet speed, reduced latency, and improved connectivity. Alhujaili et al. (2024) emphasized that 5G technology can enhance AR capabilities by delivering smoother and more responsive learning experiences. With stable network support, AR applications can offer real-time access to interactive content without technical disruptions.

To ensure optimal implementation, several factors must be considered. First, curriculum development must systematically integrate AR into Islamic studies while ensuring alignment with Islamic values and avoiding its misuse as mere entertainment (Fahreza et al., 2024). Second, educators must receive targeted training to apply AR effectively. Without adequate training, the use of AR may fall short of its potential and even hinder learning outcomes (Sagnak & Baran, 2020).

Integration of Augmented Reality (AR), Role Playing, and Project-Based Learning (PBL)

The integration of Augmented Reality (AR), Role Playing, and Project-Based Learning (PBL) in Qur'anic and *sīrah* literacy education introduces a new dimension to Islamic learning. AR enables interactive visualization of Qur'anic verses and historical Islamic events, creating an immersive learning experience. For instance, students can witness a digital reconstruction of the Battle of Badr or explore the 3D structure of the Prophet's Mosque in Medina. Role Playing supports the internalization of Islamic values through realistic scenario simulations, such as practicing proper etiquette when speaking to a teacher based on *Surah al-Ḥujurāt* [49]: 1–3 (Sultan & Zumerasakabaidillah, 2022). This combination enhances not only cognitive understanding but also promotes social skills, creativity, and critical thinking (Mungawanah & Magalhaes, 2024; Saadiyah & Anjarwati, 2022).

Implementing AR, Role Playing, and PBL in junior high school settings must consider adolescents' psychological development, as they begin to think abstractly and seek identity. AR can help visualize complex Islamic concepts, such as the ethics of listening to religious instruction from *Surah al-A ʿrāf* [7]: 204, by simulating how the Prophet's Companions attentively received his teachings. Role Playing assists students in navigating moral dilemmas, such as responding to diverse jurisprudential opinions or peer pressure regarding Islamic conduct. Meanwhile, PBL focuses on relevant social issues, such as creating social media videos on honesty in education based on *Surah al-Baqarah* [2], promoting the integration of Islamic principles into everyday student life (Afifah et al., 2025).

Character development, particularly in showing respect toward teachers, is a key focus of this integration. AR can be utilized to visualize exemplary student–teacher interactions from Islamic history, such as a simulation of ʿAbdullāh ibn ʿAbbās learning directly from the Prophet. This helps students experience reverence and humility within a learning context. Role Playing provides opportunities to practice respectful communication, such as how to request permission to speak, express differing opinions politely, or ask for clarification without offending the teacher. PBL can reinforce these values by assigning projects like creating short videos that illustrate the implementation of *Surah Luqmān* [31]: 12–19 in modern teacher–student relationships, inspired by the example of ʿAlī ibn Abī Ṭālib's respect toward the Prophet (Sultan & Zumerasakabaidillah, 2022; Fahreza et al., 2024).

One of the main challenges in implementing this integration is maintaining a balance between technology use and face-to-face social interaction. Although AR provides engaging visualization, preserving collaborative interaction is crucial. For instance, after studying a story of patience through AR, students may perform a Role-Playing activity to practice those values. Ethical guidelines are also necessary to ensure Islamic norms are upheld in digital environments, such as maintaining online etiquette and respecting others' privacy. PBL projects must also incorporate Islamic ethical considerations, especially when creating digital content (Fahreza et al., 2024).

To evaluate the effectiveness of AR, Role Playing, and PBL integration in Qur'anic and *sīrah* literacy, accessible assessment tools are required. Portfolio-based assessment is one effective method, allowing students to collect evidence of learning across AR interactions, Role-Playing sessions, and PBL work. For example, students may include screenshots of AR engagement, video recordings of their Role-Playing activities, and

documentation of their PBL projects. Teachers may use rubrics that assess conceptual understanding, creativity, collaboration skills, and the application of Islamic values (Reynders et al., 2020; Akbar et al., 2024).

Teacher professional development is essential to the success of this integration. Teachers must be equipped not only with technical skills in using AR but also with pedagogical strategies for integrating it with Role Playing and PBL. Collaboration between Islamic studies and information technology teachers can produce enriched learning experiences. Mentoring programs among teachers may also be implemented, allowing experienced educators in technology-enhanced learning to guide their peers (Sagnak & Baran, 2020). This capacity-building is expected to support the effective and sustainable implementation of AR-PBL-Role Playing integration.

Parental and community involvement also plays a vital role in ensuring the success of this approach. Parents should be educated on the benefits and challenges of using AR in Islamic education and how they can support their children at home. For instance, parents may be invited to AR demonstrations or brief workshops. PBL projects may also involve local communities, such as creating awareness campaigns on Islamic values via social media or organizing volunteer initiatives based on Qur'anic teachings. Religious scholars and community leaders may be invited to participate in Role-Playing activities or evaluate PBL projects, offering practical insights on Islamic ethics in daily life (Halimah et al., 2024).

Finally, the development of 5G technology presents new opportunities for AR, Role Playing, and PBL integration in Islamic education. With higher bandwidth and network capacity, AR content can become more complex and realistic—for example, 3D simulations of Madinah during the Prophet's time or interactive visualizations of the *waḥy* (revelation) process. Real-time AR elements can enrich Role-Playing, allowing students to interact with virtual companions of the Prophet. In PBL contexts, students may design advanced AR-based projects, such as interactive prayer guides or virtual tours of the Kaʿbah (Alhujaili et al., 2024).

The Effectiveness of Augmented Reality (AR), Role-Playing, and Project-Based Learning (PBL) in Islamic Education

The integration of Augmented Reality (AR), Role-Playing, and Project-Based Learning (PBL) in Islamic education has shown considerable effectiveness in improving students' comprehension, engagement, and retention in Qur'anic and *sīrah* literacy. The success of this approach can be examined through cognitive theory, experiential learning frameworks, and its impact on students' motivation and character development.

From a cognitive perspective, Sweller's (1988) **Cognitive Load Theory** emphasizes that comprehension is shaped by the working memory's capacity to process new information. In Islamic education, traditional methods relying solely on lectures and texts can be cognitively overwhelming and fail to provide students with meaningful experiences. Visual and interactive AR tools reduce cognitive load by presenting content in more engaging formats. As such, students absorb and retain Islamic knowledge more effectively than through conventional instruction.

Kolb's (1984) **Experiential Learning Theory** supports the notion that students learn best when directly involved in the learning process. AR provides immersive experiences that allow students to "experience" Islamic history virtually—for instance,

through 3D simulations of the Battle of Badr or the construction of al-Masjid al-Nabawī. These experiences not only reinforce cognitive understanding but also create emotional resonance, enhancing learner engagement.

Role-Playing and PBL further enhance learning effectiveness. Vygotsky's (1978) **Constructivist Theory** posits that learning occurs more meaningfully when students participate actively in social activities and construct understanding through interaction. In Role-Playing, students internalize Islamic values by simulating real-life moral scenarios. For example, students may practice proper speech etiquette with teachers based on **Surat al-Ḥujurāt [49]:1–3**, which emphasizes humility and respect:

يَا أَيُّهَا الَّذِينَ آمَنُوا لَا تُقَدِّمُوا بَيْنَ يَدَيِ اللَّهِ وَرَسُولِهِ ۖ وَاتَّقُوا اللَّهَ ۚ إِنَّ اللَّهَ سَمِيعٌ عَلِيمٌ

يَا أَيُّهَا الَّذِينَ آمَنُوا لَا تَرْفَعُوا أَصْوَاتَكُمْ فَوْقَ صَوْتِ النَّبِيِّ وَلَا تَجْهَرُوا لَهُ بِالْقَوْلِ كَجَهْرِ بَعْضِكُمْ لِبَعْضٍ أَنْ تَحْبَطَ أَعْمَالُكُمْ وَأَنْتُمْ لَا تَشْعُرُونَ

إِنَّ الَّذِينَ يَغُضُّونَ أَصْوَاتَهُمْ عِنْدَ رَسُولِ اللَّهِ أُولَٰئِكَ الَّذِينَ امْتَحَنَ اللَّهُ قُلُوبَهُمْ لِلتَّقْوَىٰ ۚ لَهُمْ مَغْفِرَةٌ وَأَجْرٌ عَظِيمٌ

"O you who have believed, do not put [yourselves] before Allah and His Messenger but fear Allah. Indeed, Allah is Hearing and Knowing. O you who have believed, do not raise your voices above the voice of the Prophet... Indeed, those who lower their voices in the presence of the Messenger of Allah – they are the ones whose hearts Allah has tested for righteousness." (Qur'an 49:1–3)

Such practices help students apply religious values to everyday interactions, strengthening affective and social dimensions of learning.

PBL complements this by promoting higher-order thinking. A study by Ulil Muwahiddah et al. (2019) revealed that AR-assisted PBL enhanced students' problem-solving skills in mathematics. In Islamic education, similar approaches—like AR-based multimedia projects on Islamic teachings—foster both creativity and deep exploration. Saadiyah and Anjarwati (2022) similarly demonstrated that combining PBL and AR increased students' creativity and engagement.

In terms of motivation, Deci and Ryan's (1985) **Self-Determination Theory** suggests that learners are more motivated when their needs for autonomy, competence, and social relatedness are fulfilled. AR, Role-Playing, and PBL collectively support these needs: AR encourages independent, exploratory learning; Role-Playing fosters meaningful interaction; and PBL allows students to achieve personal and social accomplishments. Tamama Hafizah et al. (2024) found that 75% of Islamic education teachers agree that AR enhances student engagement, reinforcing the motivational impact of this method.

Nonetheless, implementation challenges remain. One major barrier is technological readiness. Davis's (1989) **Technology Acceptance Model** posits that perceived ease of use and usefulness determine the adoption of technology. If teachers and students lack digital literacy or device access, implementation effectiveness may suffer. Hence, professional development for educators is crucial.

Equally important is aligning technology use with Islamic values. AR and PBL should not become purely entertainment-focused. Instead, they must reinforce ethics and character. A curriculum-integrated PBL project on teacher respect—such as a video based on **Surat Luqmān [31]:12–19**—can ensure alignment with Islamic morals.

The growing availability of 5G also supports more complex AR content. Alhujaili et al. (2024) noted that 5G enables stable and real-time AR applications, enhancing the realism of simulations—like 3D renderings of Madinah during the Prophet's era or virtual dialogues with *ṣaḥābah* (Companions of the Prophet).

In sum, the integration of AR, Role-Playing, and PBL in Islamic education is supported by cognitive, experiential, and motivational theories, as well as empirical studies. Despite limitations in infrastructure and training, this method offers a promising pathway toward meaningful, interactive, and values-based Islamic learning in the digital era.

Conclusion

The integration of Augmented Reality (AR), Role-Playing, and Project-Based Learning (PBL) into Islamic education has demonstrated a positive impact on students' comprehension, engagement, and character development in Qur'anic and *sīrah* literacy. From a cognitive perspective, AR helps reduce the burden on working memory by providing a more visual and interactive learning experience. This aligns with **Sweller's (1988) Cognitive Load Theory**, which states that visually presented information is more easily processed and remembered than conventional text-based content.

Additionally, **Kolb's (1984) Experiential Learning Theory** reinforces the value of direct, hands-on experiences in the learning process. AR allows students to virtually experience key moments in Islamic history, while Role-Playing enables them to internalize Islamic values through real-life simulations. In this context, **Vygotsky's (1978) Constructivist Theory** supports the notion that social interaction within Role-Playing contributes to deeper understanding. Meanwhile, PBL fosters the development of critical thinking and problem-solving skills through active exploration and inquiry-based tasks.

From a motivational standpoint, **Self-Determination Theory** proposed by Deci and Ryan (1985) suggests that AR, Role-Playing, and PBL create a learning environment that supports autonomy, competence, and relatedness—factors that enhance intrinsic motivation. Empirical studies have also confirmed that the use of AR in religious education not only enhances students' cognitive understanding but also strengthens their emotional and affective engagement with the material.

In summary, the integration of AR, Role-Playing, and PBL presents a compelling, multidimensional approach for Islamic education, offering both theoretical and practical benefits in enhancing meaningful and value-based learning experiences.

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