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Research Article

Designing an Innovative Muamalat Educational Game with HTML5 for Fiqh Muamalat Literacy

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Abstract: This study addresses low student motivation in Fiqh Muamalat by developing an innovative HTML5-based educational simulation game. The objective of this study is to design and develop innovative Muamalat educational games using HTML5 based on Problem-Based Learning (PBL) and interactive simulations to improve Islamic financial literacy. By utilizing Scrum and ABCDE methodologies, the research integrates Problem-Based Learning (PBL) to bridge the gap between complex Shariah concepts and digital-native learners. By focusing on Islamic financial literacy, including Akad and Khiyar, this interactive tool empowers educators to overcome digital competency constraints while fostering ethical and moral reflection in contemporary digital transactions.



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1. INTRODUCTION

Low level motivation in fiqh learning among students due to less attractive conventional methods impedes the process of attracting the digital generation's attention. The digital generation is accustomed to visual and interactive content that requires contextual and technology-based tools. However, most teachers have limited digital competence in designing and implementing technology-based Fiqh learning. The constraints of digital competence among teachers limit the integration of media into more effective pedagogical strategies. Therefore, the research on the spiritual aspects of the digital space needs to be expanded, since the digitization of Fiqh is not just a tool to increase interest and motivation, but also as a medium for moral reflection on contemporary issues such as social media

ethics and digital transactions (Fatmawati, 2025). The main challenge of learning *Fiqh* in the era of globalization is also affected by cultural aspects and values because globalization has led to the influence of Western culture in students' lifestyles, including in terms of clothing, behaviour, and thinking (Kurniawan, 2025; Supriatna, 2025).

Recent studies on curriculum development and pedagogical strategies in Arabic language education emphasize the importance of integrating modern teaching methods with digital innovations to improve quality. The advancement includes the use of interactive info graphic modules to facilitate the teaching of Arabic grammar, where Hamid et al. (2024) reported that students exhibited high levels of readiness and behavioural intentions, thus it is increasing their overall understanding and engagement. In line with these findings, Alshehri (2024) who explored the effectiveness of multimedia tools in developing language skills, showed positive acceptance despite challenges in terms of technical reliability. The learning innovations can support the implementation of problem-based learning (PBL) to foster critical thinking and *ijtihad* skills (Abdul Khalil et al. (2024)

The integration of technology in the Islamic training industry has begun to be introduced post-COVID-19. The COVID-19 pandemic and mobility restrictions have had a negative impact on physical Islamic training. Therefore, Islamic training has shifted from physical training to digital training. With the digitalization of training, it can overcome the problem of trainees who find it difficult to remember and recall the information they have learned effectively. The retention rate of trainees in traditional classroom training is only 20% to 50%. However, when trainees are actively involved in a simulated environment, their memory retention increases to 90%. Therefore, the Halal Simulation Halal2U game was created by researchers from Universiti Sains Islam Malaysia. It offers more dynamic and engaging training materials as well as an inclusive and accessible learning environment. The goal is to introduce trainees to the application process in a fun and engaging way. However, despite these advantages, there are obstacles that need to be overcome when trying to use immersive learning and gamification strategies. Initial development costs, technical skill requirements, and resistance to moving away from traditional training techniques are among the factors contributing to barriers. (Masood, A., Anim, NAHM, & Ismail, A. (2024).

Therefore, the teaching of *Fiqh Muamalat* is currently facing a significant gap between traditional pedagogical methods and the needs of the digital generation, resulting in low student motivation levels and information retention rates of only around 20% to 50% compared to 90% achieved through active simulation. This issue is further exacerbated by the constraints of digital competence among educators and the increasing influence of globalization culture, thus demanding the need to create a digital "spiritual space" to address contemporary moral issues such as social media ethics and digital transactions. In this regard, there is an urgent need to develop teaching aids through interactive HTML5-based simulation games to bridge the gap between complex *Fiqh* concepts and the interactive learning styles of modern students. The objective of this study is to design and develop innovative *Muamalat* educational games using HTML5 based on Problem-Based Learning (PBL) and interactive simulations to improve Islamic financial literacy.

2. LITERATURE REVIEW

Problem Based Learning (PBL) has gained significant recognition in Malaysia for innovative teaching and learning methods. The success of PBL model implementation focuses on three critical components, which includes the format and design of the problems (Wee, Kek and Sim, 2001; Hung, 2006), the role of the tutors (Wee, Kek and Sim, 2001; Wee, 2004), and the assessment strategies (Gijbels *et al.*, 2005).

On the other hand, in the e-Learning system, students are required to have their own initiative in choosing their time and taking responsibility for learning. The e-learning learning atmosphere will

force students to be more active in their learning (Asep, 2005). Vaughan Waller (2001) defines e-learning as an effective learning process by combining digital delivery materials. William (2003) defines e-learning as the use of the web and its technology for learning. Web-Based Learning (Online Learning) is provided via the internet and teaching materials can be uploaded to web pages or interactive internet-based program. Teaching materials are stored on a server computer and can be accessed using a web browser or FTP (File Transport Protocol) file transfer application. The technology and devices required are web programming, hardware servers, and software tools. Web-based learning depends greatly on the strategy, planning and teaching methods that will be applied (Simamora, 2002). This system requires a Subject Matter Expert (SME), which is a field expert, an Instructional Designer whose role is to design learning materials to be more interactive, easier, and more interesting to learn. Finally, the Graphic Designer (GD), is responsible for transforming text materials into graphic forms with images, colors, and layouts that are appropriate, effective, and interesting to learn. Meanwhile, the Learning Management System (LMS) is a system on a website that regulates interactions between students, trainees, and teaching staff and trainees. (Rini, I. (2009). An example of an LMS design can be seen in the diagram below:

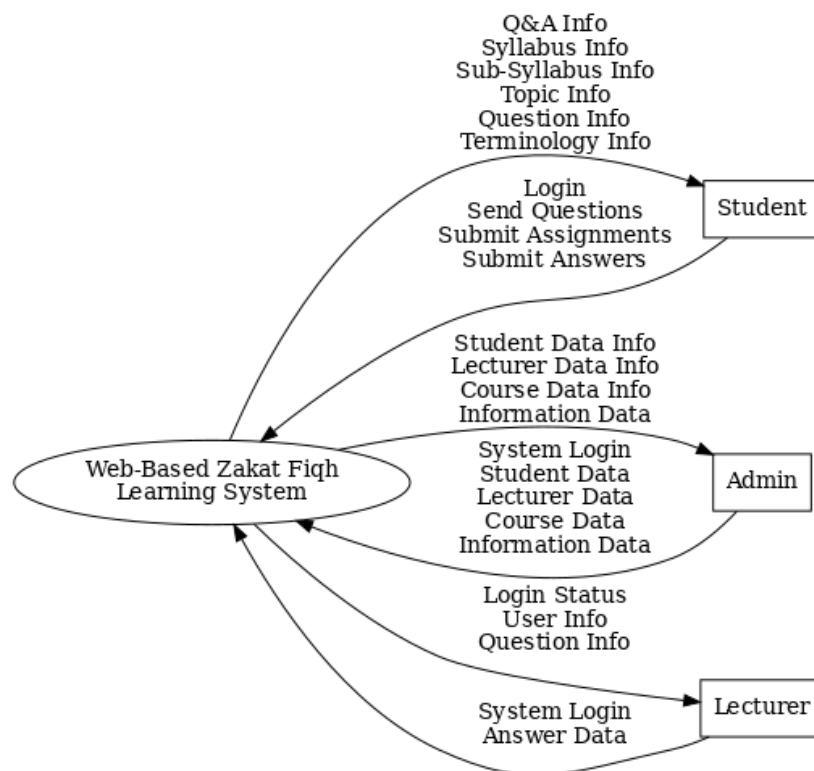


Figure 1. LMS design

The architecture of this system is modelled based on information flow through an input-process-output (IPO) structure involving three main stakeholders. In the input phase, administrators are responsible for managing user data and lecture information, while lecturers are responsible for providing teaching materials, assignments, and providing feedback and assessment results to students. Subsequently, students contribute to the input through downloading materials, submitting assignment answers, and online interactions. All of these inputs are then processed through system functions that include managing activity models, learning materials, academic assessments, and e-learning user databases to produce a comprehensive instructional management system. (Rini, I. (2009).

The use of interactive games using media technology in learning and teaching the subject of Fiqh in boarding schools. Boarding schools are still minimal. An innovative approach that can

overcome this problem is gamification, which is the integration of game elements into the learning process. Gamification has been proven to increase student engagement and motivation in various educational contexts. In Islamic education, this approach is not just a technological innovation but can also be used to foster faith, morals, knowledge, action, and the spirit of leadership (*qiyadah*). The findings of Khairunnisa, SM, & Rozi, MAF (2025) show that gamification applications can increase student attendance in class. However, the main challenge in implementing it is the readiness of teachers. This includes a lack of digital skills to design and operate gamification-based learning media. Some also feel that game-based methods are too simple and have the potential to reduce the seriousness of learning Fiqh, which is rich in scientific and spiritual values. Therefore, digital literacy training and the development of gamification-based learning media for teachers are very necessary. Also, strengthening infrastructure such as stable internet access and the need to create a culture of digital literacy to ensure that gamification innovations are accepted without conflicting with traditional values. Khairunnisa, SM, & Rozi, MAF (2025)

According to Anggraini, D. (2025), students will more easily remember and apply the values taught in their lives by using a mobile application equipped with gamification elements. Out of 30 students, 18 students (60%) admitted that they were more comfortable following the learning when there were game elements such as challenges and rewards. The results of the students' reflections showed that they found it easier to understand the *Fiqh* and *Akhlak* learning materials after using the gamification-based mobile application.

In fact, according to (Othman, MS, Setambah, MAB, Shuib, TR, Abd Rahim, MM, & Shafeei, K. (2022), gamification is the latest popular approach that uses the application of human-computer interaction (HCI) experiences, psychology and digital game development to stimulate human involvement and motivation. However, his study of Fardhu Ain class teachers regarding gamification showed that cognitive awareness recorded a moderate mean. Therefore, it is necessary for teachers to understand the elements that can raise self-esteem to be practiced and highlighted. When cognitive awareness is at a moderate level, the elements of self-control and learning motivation will also be in a moderate mean. Therefore, teachers must improve their knowledge, especially in developing clear self-esteem and being able to deal with any problems that exist.

The study by Yanti, RW, Said, SM, Adivar, A., & Guntur, B. (2024) which developed the development of an interactive learning game, designed for web and Android platforms using HTML5 and Android Studio. During the analysis phase, the needs analysis was carried out along with the selection of learning materials. The design process involved the creation of UI/UX Design Sketches, developing storyboards, selecting learning media components. In the implementation phase, the product was tested on a small group of respondents to collect user feedback. Finally, the evaluation phase was conducted in a formative and summative manner. The product development was found to be very effective in improving data literacy and Islamic financial literacy. The product received very favorable evaluations from media, material and language experts, highlighting its strengths in visual design, content quality and readability. The evaluation emphasized the ability of edugames to provide an engaging and educational learning experience, thus successfully increasing student participation, understanding and engagement. This underscored its suitability as a practical and impactful learning medium adapted to the needs of modern education. Although areas such as interactivity and curriculum alignment require further improvement, the overall results confirm the significant potential of edugames as innovative tools to improve educational outcomes. Therefore, choosing to use HTML5 is very suitable in the development of muamalat games because it is easier to design and easy to customize, and the cost is low.

3. METHODOLOGY

This study is developed using methodologies such as Scrum or the ABCDE process. ABCDE is a framework similar to Scrum, which is currently the most widely adopted software development methodology. In Scrum, development occurs in routines where each iteration produces functional code. The primary benefits of using Scrum include the use of user stories, an iterative-incremental approach, defined key roles, and essential ceremonies such as Sprint Planning, Daily Scrum, Sprint Review, and Sprint Retrospective. (Marchesi, L., Marchesi, M., & Tonelli, R. (2020). This HTML code has been generated using claude.ai and the source code can be found on gitlab <https://gitlab.com/azizursyuhada/muamalat> or https://gitlab.com/azizursyuhada/muamalat/-/blob/main/index.html?ref_type=heads . The final result of this game has been placed on a free server on the website <https://syariah.w3spaces.com/> then click continue.

The proposed development process, aligned with the ABCDE phases, is detailed as follows:

- 1.) System Goals: This phase involves clearly formulating the objectives of the game. The primary objective is to ensure that students are able to explain the legal terms of *Akad* (contract) related to Sale-Beli (trade). Additionally, students should be able to apply the concepts of *Akad* and *Khiyar* (option to withdraw) by successfully completing five trade transactions and achieving a passing score within the game.
- 2.) Identify Actors: This step focuses on identifying the users and external entities that will interact with the game. While the game logic is powered by JavaScript—which controls decision-making and operational calculations—the human actors involved include the User (Student), the Ustaz (Teacher/Facilitator), and the Merchant (Merchant).
- 3.) User Stories : Requirements are expressed as user stories to guide development through the user experience flow. The syllabus for this game is based on the subtopic "Terms of Islamic Jurisprudence Relating to Sale," specifically covering Sections 101 – 166. The reference text for these laws is sourced from the Majallah al-Ahkam al-Adliyyah, which can be accessed via https://www.iium.edu.my/deed/lawbase/al_majalle/al_majalle01.html.

4. FINDINGS

The findings report is divided into interface features, game storytelling and how to win this game.

4.1 Game Interface Features

The game interface is designed with a three-panel layout to help students track their progress and understand the mechanics of Islamic trade transactions.

4.1.1 Player Status Panel (Player Status)

Located on the left, this panel serves as the player's dashboard, displaying real-time data related to their progress and "halal" economy standing:

- Dinar: Tracks the player's current currency, essential for completing the five required trade transactions.
- Knowledge Fiqh : A knowledge meter that likely increases as the player interacts with characters like Ustaz Ali to learn about *Akad* and *Khiyar* .

- Reputation : Measures the player's standing, which may be affected by the validity and ethics of their transactions.
- Transaction : A counter that tracks the number of completed sales, helping the player meet the goal of finishing 5 valid transactions.

4.1.2 Control & Navigation Panel

Located at the bottom left, this panel provides the User Interface (UI) instructions to ensure a smooth user experience (UX):

- Movement: Informs the player that they can navigate the world using either the Arrow keys or WASD .
- Interaction: Specifically identifies the Spacebar as the key to interact with actors like the Merchant or Ustaz.
- Dialogue Management: Uses the ESC key to close dialogue boxes, allowing for an efficient flow during learning sessions.

4.1.3 Main Mission Panel (Mission Main)

Located on the right, this panel functions as the core task tracker to guide the student through the Majallah al- Ahkam syllabus:

- Progressive Tasks: Lists sequential goals, such as finding Ustaz Ali at the Mosque to learn the basics of Muamalat .
- Applied Learning: Tracks the application of theory, such as performing the first transaction at the market and learning the concepts of *Khiyar* (option) and Majlis (session).
- Completion Indicator: Uses checkmarks to show which learning objectives have been met, ensuring the student stays focused on the goal of 5 valid transactions. The diagram can be seen below :

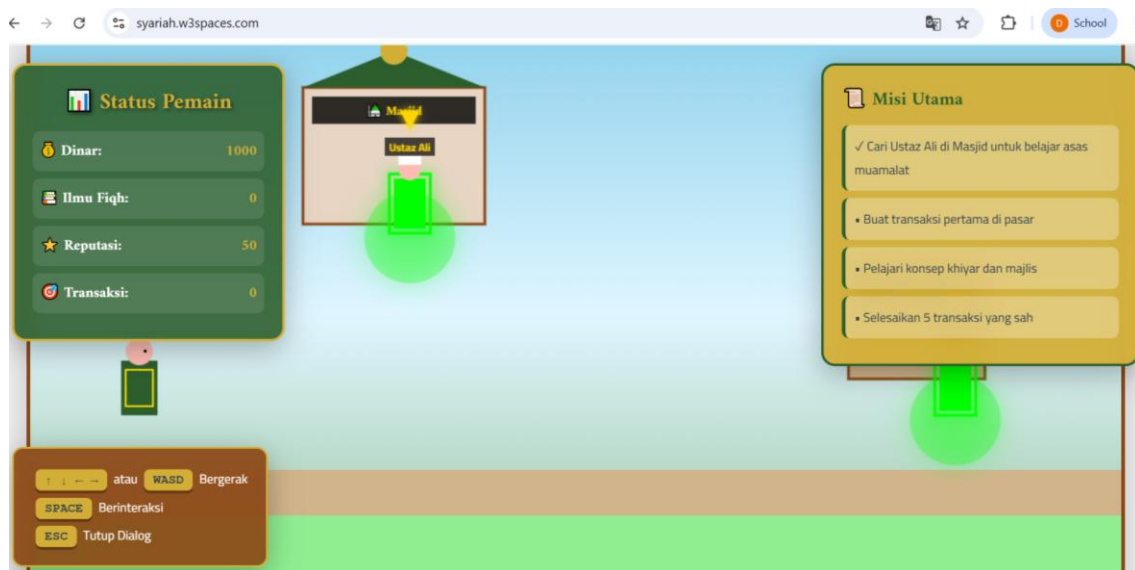


Figure 2. main mission panel

4.2. *Game Storyboard*

The game aims to improve students' understanding of Islamic Muamalat through experiential learning. The main mission begins when players are asked to find Ustaz Ali in the mosque to learn about Akad and the concept of Khiyar. By applying learning with interactive dialogue, players are able to understand what is akad and what is khiyar. Students are then asked to act out the akad in the market. Where players must ensure their transactions comply with Sharia requirements. Successful completion of this task contributes to the player's transaction count and adjusts their Dinar balance, thus reinforcing the link between ethical compliance and economic outcomes.

To complete the main mission requires players to complete five valid transactions, serving as a cumulative assessment of their learning. This task assesses the student's ability to consistently apply Muamalat principles across a range of transactions while maintaining Sharia compliance. Transactions that violate Islamic principles are either rejected or negatively affect the player's reputation, thus reinforcing ethical accountability. Successful completion of this mission signifies mastery of basic Muamalat concepts and results in an increase in the overall reputation and progression of the game. Overall, the game integrates Islamic muamalat jurisprudence education with interactive gameplay to promote a more interactive understanding of Muamalat.

4.3 *How to win this game*

The player status system functions as a structured mechanism to measure learning progression and determine success within the game. Key status indicators include Dinar, Ilmu Fiqh, reputation, and the number of completed transactions, each representing distinct dimensions of cognitive, behavioral, and ethical development. Dinar reflects the player's economic performance and decision-making efficiency, while Ilmu Fiqh represents the acquisition and application of Islamic legal knowledge related to Muamalat. Reputation serves as an ethical indicator, capturing the player's consistency in adhering to Shariah principles during transactions. The transaction count, on the other hand, provides a quantitative measure of experiential engagement and practical competence. Winning the game is not determined solely by financial accumulation but by a balanced achievement across all status indicators. To successfully complete the game, players must demonstrate sufficient Fiqh knowledge by engaging with learning stations and applying correct legal principles, maintain a positive reputation through Shariah-compliant transactions, and complete the required number of valid transactions as specified in the main missions. Although dinar accumulation supports progression, unethical or invalid transactions may reduce reputation or invalidate progress, thereby preventing premature success based purely on economic gain. This design ensures that learning outcomes prioritize ethical compliance and knowledge mastery over profit maximization.

By integrating these status indicators into the winning conditions, the game emphasizes holistic learning aligned with Islamic educational objectives. Success is achieved when players consistently apply Muamalat principles, demonstrate informed decision-making, and maintain ethical conduct throughout the gameplay. Consequently, the status system operates not only as a scoring mechanism but also as a formative assessment framework that reinforces the core values of Islamic commercial jurisprudence. The diagram can be seen as below:

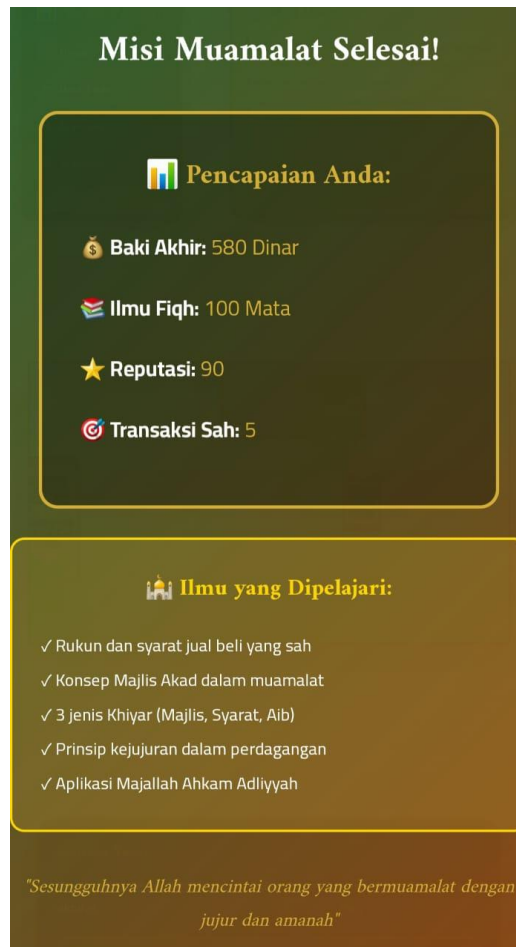


Figure 3. end of the game

5. DISCUSSION

The integration of technology in *Fiqh* learning can be realized through various strategies to digitize the teaching and learning process. The use of Learning Management Systems (LMS) such as Moodle or Google Classroom allows teachers to systematically organize fiqh materials, provide discussion forums for contemporary Islamic law, and conduct online assessments (Khairunnisa, SM, & Rozi, MAF, 2025).

However, the use of HTML5 can be used in the development of LMS portals to save costs. In fact, the use of HTML5 for AR development can be done as in the study of Trelease, RB, & Nieder, GL (2013) who found the latest process for transforming available clinical imaging data and 3D image arrays into reusable learning objects organized in the latest standard format for web-based multimedia data--HTML.

6. CONCLUSION

In conclusion, the integration of technology through the use of Learning Management Systems (LMS) and HTML5 applications offers an innovative and cost-effective approach to digitizing Fiqh education. The use of platforms such as Moodle and Google Classroom not only enables systematic delivery of syllabus, but also opens up spaces for interactive discussions on contemporary Islamic legal issues. By leveraging the flexibility of HTML5, educators are able to develop portals rich in multimedia elements and technologies such as Augmented Reality (AR), which has proven effective in converting complex data into reusable 3D learning objects. This combination of strategies directly empowers the

teaching and learning process, making it more dynamic, accessible, and in line with the demands of education in the digital era.

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