

# Interactive Multimedia for Introducing Short Surahs from Juz Amma in Preschool Children: A Case Study of Datok Sulaiman Putra Islamic Preschool in Palopo City

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## Abstract

This research aims to implement an interactive multimedia application using Unity software on a desktop platform, specifically designed to introduce short surahs from Juz Amma to students, with a focus on Datok Sulaiman Putra Islamic Preschool in Palopo City. This research is motivated by the need for innovative and engaging methods to enhance the learning experience of preschool students in Islamic education. The research follows the Multimedia Development Life Cycle (MDLC) and incorporates methods such as observation, interviews, and literature studies, including direct observation for data collection. The testing technique employed is Usability Testing, which aims to assess the user-friendliness and ease of use of the multimedia application. The results of this research, from the implemented application, can facilitate the process of introducing short chapters from Juz Amma, making it easier for students to read and understand them in the Qur'an. This research provides benefits in the development of interactive educational tools that can significantly contribute to the learning journey of preschool students in Islamic education.

*Keywords:* Juz Amma, Interactive multimedia, Preschool education, Unity, Usability testing.

Received: 15 February 2023

Revised: 20 April 2023

Accepted: 20 May 2023

## Introduction

The rapid advancement of technology has brought significant changes to various aspects of our lives, including education (Andryanto et al., 2022; Iskandar, 2022). In the field of preschool education, it is crucial to adapt teaching methods to meet the needs and preferences of young learners (Simarmata et al., 2022). Children today are more receptive to interactive and visually appealing materials, making the incorporation of multimedia elements increasingly attractive. In the context of Islamic education, introducing short surahs from Juz Amma to preschool students can be a challenging task (Husin, bin Abdul Aziz, & others, 2022). Traditional methods may not always effectively capture and sustain children's interest in learning the Qur'an. Hence, this study aims to develop an interactive multimedia application using Unity software. The application is specifically designed to introduce short surahs from Juz Amma to students attending Datok Sulaiman Putra Islamic Preschool in Palopo City.

The motivation behind this research is to create a dynamic and immersive learning experience for preschool students, making the process of learning the Qur'an enjoyable and effective. By incorporating multimedia elements such as text, images, graphics, animations, and audio, the application aims to capture children's attention and facilitate their understanding of the short surahs. This interactive approach aligns with children's cognitive development and enhances their engagement with the material (Andryanto et al., 2023).

In addition to the background information, several related studies support this research. (Nurhikmah, Farida, & Ervianti, 2021) conducted a study on the impact of interactive multimedia on learning outcomes in mathematics education. Their research examined the effects of interactive multimedia tools on student engagement, comprehension, and retention of mathematical concepts. (Iskandar, 2022) applied the Multimedia Development Life Cycle (MDLC) in the development of an educational game, investigating how the MDLC framework guided the design, development, and evaluation processes of an interactive game-based learning environment. (Zhang & Zou, 2022) explored the effects of interactive

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multimedia on language learning in the context of second language acquisition, examining how interactive multimedia tools enhanced language proficiency and communication skills. (Qureshi, Khaskheli, Qureshi, Raza, & Yousufi, 2021) implemented interactive multimedia in science education to enhance student learning engagement, focusing on the effectiveness of interactive multimedia tools in promoting active learning, critical thinking, and conceptual understanding.

Building upon the problem background and findings from these related studies, the researchers aim to develop an interactive multimedia application for introducing short surahs from Juz Amma to preschool children. The study will be conducted as a case study at Datok Sulaiman Putra Islamic Preschool in Palopo City, to create a system that is beneficial and effective in enhancing the learning experience of preschool students in the context of Islamic education.

## Method

This research employs the Multimedia Development Life Cycle (MDLC) as the system development method. MDLC offers a systematic approach, ensuring each phase is properly executed for the development of an interactive multimedia application (Andryanto Aman et al., 2023). The advantages of MDLC include its structured process, which facilitates effective analysis, design, development, and testing stages (Butsiarah, Ramadhan, Kamaruddin, & Sahibu, 2022). In the analysis phase, the needs and requirements of the target users are thoroughly understood. The design phase focuses on creating an engaging user interface with interactive multimedia elements. During the development phase, the application is implemented with multimedia content, while the testing phase involves comprehensive evaluations to ensure usability and resolve any technical issues (Fairuzabadi et al., 2023).

### Analysis

In the analysis phase, the researchers conducted observations, interviews, and literature studies to evaluate the information dissemination practices at Datok Sulaiman Putra Islamic preschools in Palopo City. Based on the findings, the system requirements and design were analyzed and identified as follows. The functional requirements of the system encompass interconnected and mutually supportive key functions, such as providing users with access to application instructions, Juz Amma, and translations of each surah. The non-functional requirements include hardware components like a laptop with 16GB RAM, 500GB HDD, and a mouse, as well as software elements such as the Windows 10 Pro operating system, the C# programming language, Unity for background design and editing, and open-source assets sourced from the internet. This analysis serves as the foundation for the development of an effective and functional interactive multimedia application that caters to information dissemination needs in preschool settings.

### design

In the design stage, researchers used Use Case Diagrams as a representation of the system. Use Case Diagrams provide a visual representation of system functionality and interactions (Hamzah, Mustika, Mustapa, & Rahmah, 2022). One of the advantages of a Use Case Diagram is its ability to display and illustrate aspects of system behavior, including various actors, their goals, and the specific actions they perform within the system. This diagram helps in identifying the functional requirements of the system, defining user interactions, and highlighting the boundaries of the system.

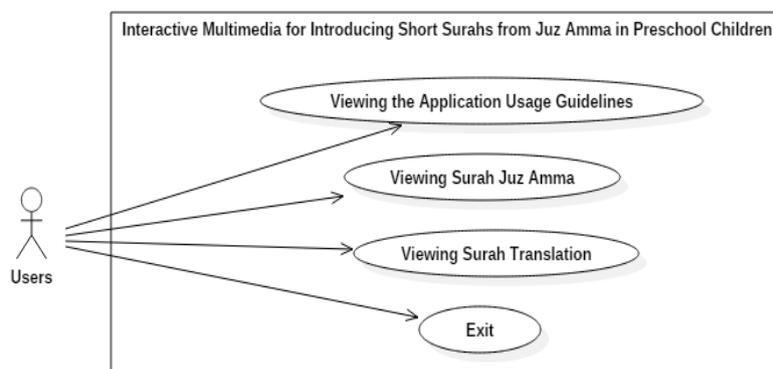


Figure 1. Use Case Diagram.

## Results and Discussion

### Result

The result of this research is the development of an interactive multimedia application using Unity software. The application integrates various multimedia elements, including text, images, graphics, animation, and audio, to create an engaging learning experience for preschoolers. The content of the app focuses on introducing short surahs from Juz Amma in an interactive and child-friendly way. The interactive features of the app encourage active participation and interaction, fostering a deeper understanding and connection with the suras among preschoolers.



Figure 2. Main Menu Page and Instruction Page

Figure 2. Part A The main menu page displays three buttons. the instruction button, the Juz Amma button, and the exit button. Figure 2. Part B The instruction page provides an overview of the functions of the buttons available within the short surahs from the Juz Amma introduction application. It includes a home button to navigate back to the main menu page and an exit button to close the application. Additionally, the page features interactive animations to enhance user engagement and make the application more visually appealing.

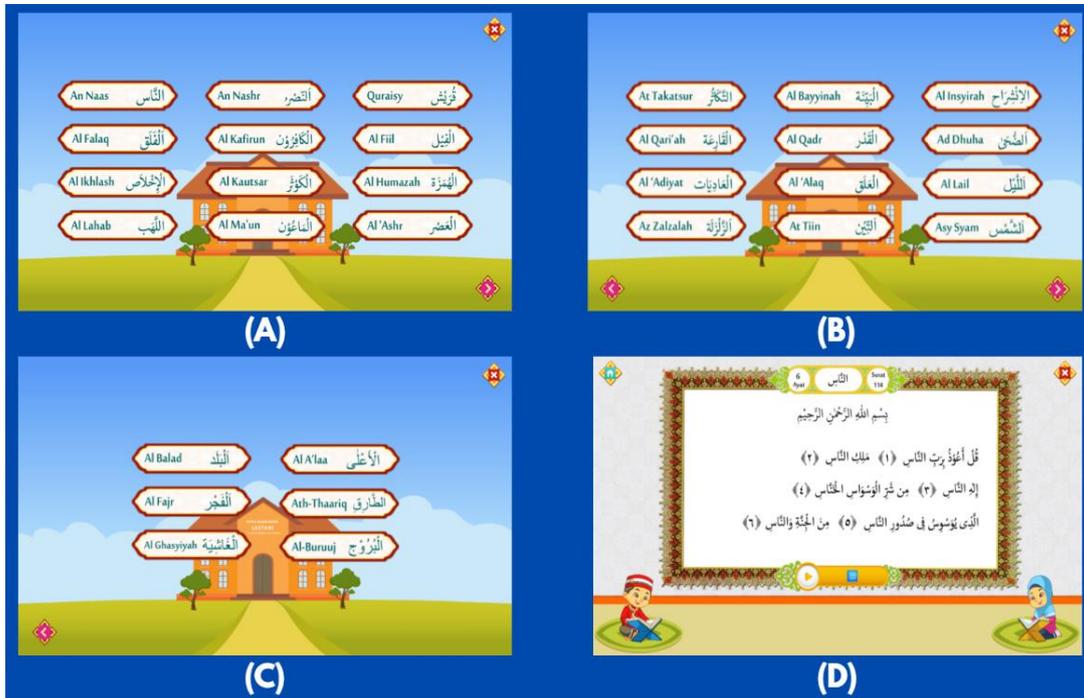


Figure 3. Juz Amma page

Figure 3, consisting of Parts A, B, C, and D, showcases various menu pages of the Juz Amma application. Part A displays the first page of the Juz Amma menu, featuring buttons for the short surahs from An-Naas to Al-Hamazzah, along with navigation options. Part B represents the first page of the Juz Amma menu as well but with buttons for the surahs from At-Takaathur to Asy-Syams, along with navigation and return options. Part C presents the third page of the Juz Amma menu, displaying buttons for the surahs from Al-Balad to Al-Buruuj, and includes a return option. Finally, Part D showcases the Surah An-Nass menu page, offering a “Play” button for the recitation of the surah and a “Translation” button for displaying its translation. These menu pages enhance the user experience and provide easy access to the selected surahs and their related functionalities.



Figure 4. Surah Translation Page Display

Figure 4. Part A The An-Nass Surah translation page is a menu page that displays the content of the An-Nass Surah button selected by the user. It features a play button to listen to the recitation of the Juz Amma surah and a translation button to display the translation within the application. Figure 4. Part B The Al-Kautsar Surah translation page is the content of the Al-Kautsar Surah button selected by the user. After selecting the translation button, the translation of the chosen verse will be displayed. The page includes a play button to initiate the audio playback of the surah, a translation button to show the translation and verse of the surah, a button on the right side of the translation to continue the recitation of the surah, and a back button on the left side of the translation to return to the previous surah. Figure 4. Part C This page displays the Indonesian text of the Al-Qadar Surah along with its translation. Figure 4. Part D This page displays the Indonesian text of the Al-Alaq Surah, specifically verses 1-9, along with its translation.

### Unit Testing

Unit testing aims to ensure the functionality, reliability, and correctness of each component or unit in an interactive multimedia application. It allows developers to identify and address problems or bugs at an early stage of development, ensuring the overall quality of the application. Unit testing facilitates easier maintenance and updates in the future, as

any changes can be validated against existing tests to ensure that modifications do not introduce new problems (Mustika, Taliang, Amiruddin, & others, 2022). The following unit tests were performed:

Table 1. Unit testing.

Test Case	Description	Actual Result	Pass/Fail
Play Button Functionality Test	Verify if clicking the play button on the surah introduction pages initiates the audio playback of the respective surah.	Audio playback starts for the selected surah.	Pass
Translation Button	Validate if clicking the translation button on the surah introduction pages displays the translation of the selected surah.	Translation of the surah is displayed on the screen.	Pass
Navigation Buttons	Check if the navigation buttons (home button and back button) function correctly.	Clicking the home button redirects to the main menu.	Pass
		Clicking the back button returns to the previous surah page.	Pass
Audio Playback	Ensure that the audio recitations play without interruptions or distortions.	Audio playback is clear and without any issues.	Pass

Table 1 outlines the various test cases conducted to validate the functionality of the interactive multimedia application. Each test case focuses on a specific aspect, such as the play button, translation button, navigation button, and audio playback. The expected results for each test case are provided, along with the actual results obtained during testing. The table also indicates whether each test case passed or failed, ensuring that the app works as intended, providing clear audio playback, accurate translation, and proper navigation.

## Discussion

The interactive multimedia application for introducing short surahs from Juz Amma on the desktop platform is specifically designed for Datok Sulaiman Putra Islamic Preschool in Palopo City. This application aims to facilitate the teaching and learning process between teachers and students, providing an easier way for teachers to deliver lessons without the need for traditional whiteboard writing. The main menu of the application consists of three buttons: the instruction button, the Juz Amma button, and the exit button.

The instruction button provides information about the functions of the buttons within the application. The exit button allows users to exit the application, while the home button redirects users to the main menu. The play button enables users to listen to the recitation of the short surahs from Juz Amma, while the pause button stops the audio playback. Additionally, the translation button allows users to view the translation of the verses in the short surahs.

This interactive multimedia application offers a user-friendly and engaging learning experience, fostering a closer connection between teachers and students (A Aman & Mustika, 2019; Kasmi et al., 2022). It provides a convenient and interactive way to introduce and learn the short surahs from Juz Amma, enhancing the teaching and learning process in Islamic education at the preschool level.

As for related research, several studies have explored the use of interactive multimedia in various educational contexts. (Nurhikmah et al., 2021) examined the impact of interactive multimedia on learning outcomes in mathematics education. (Iskandar, 2022) applied the Multimedia Development Life Cycle (MDLC) in developing an educational game, while (Zhang & Zou, 2022) examined the effects of interactive multimedia on language learning in the context of second language acquisition. (Qureshi et al., 2021) applied interactive multimedia in science education to increase students' learning engagement. The study highlighted the effectiveness of interactive multimedia in improving student engagement, comprehension, and retention in various subjects. The findings from this study support the rationale behind applying interactive multimedia to introduce short chapters from Juz Amma in preschool settings, as it can provide an engaging and effective learning experience for young students.

In terms of user interface design, the application focuses on usability to ensure that users do not encounter difficulties while using the application. The addition of animations in the interface aims to enhance user engagement and prevent user fatigue. This interactive multimedia application for introducing short surahs from Juz Amma on the desktop platform offers several advantages. Firstly, it facilitates the teaching and learning process for teachers, reducing the

reliance on manual teaching methods that are still prevalent in the current era. Additionally, the application presents the content of the short surahs more accurately, accompanied by visually appealing interfaces, animations, text, and audio elements.

## Conclusions and Suggestions

### Conclusions

In conclusion, the implementation of an interactive multimedia application to introduce short surahs from Juz Amma to preschool children, specifically designed for Datok Sulaiman Putra Islamic Kindergarten in Palopo City, offers significant benefits in the field of Islamic education. The app provides an innovative and engaging approach to enhance the learning experience of preschool students, making the process of learning the Qur'an more enjoyable and effective. By incorporating multimedia elements and interactive features, the application captures the attention of young learners and facilitates their comprehension and retention of short surahs. The application's user-friendly and visually appealing interface further enhances the overall learning experience.

### Suggestions

Based on the findings of this study, the following are suggested:

1. It is recommended to conduct further research and development to improve the features and functions of interactive multimedia applications. This could include adding more interactive elements, incorporating gamification elements, and expanding the content to include additional surahs or topics in Islamic education.
2. As technology and user needs evolve, it is imperative to update and maintain the app regularly. This includes addressing bugs or technical issues, ensuring compatibility with new devices and operating systems, and continuously improving the user interface and overall user experience.

**Acknowledgments:** The completion of this research was made possible with the support and cooperation of various institutions. We would like to express our deepest gratitude to Datok Sulaiman Putra Islamic Preschool in Palopo City, Universitas Cokroaminoto Palopo, and Universitas Teknologi Akba Makassar for their valuable assistance throughout the research process.

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