	JTKSI (Jurnal Teknologi Komputer dan Sistem Informasi)
	JTKSI, Volume 7, Nomor 2, Mei 2024 E ISSN: 2620-3030; P ISSN: 2620-3022, pp.87-93 Accredited SINTA Nomor 72/E/KPT/2024 https://jurnal.ftikomibn.ac.id/index.php/jtksi/index
	Received: 24 Maret 2024 Revised: 4 April 2024; Accepted: 8 April 2024

Designing game applications or educative games to recite Al Qur'an based on interactive multimedia At the TPQ (Al Qur'an Learning Center) of Darussalam

Sri Ipnuwati¹, Khabibur Rohman², Sri Surya Mandala³

^{1,2}Study Program in Information Systems, FTIKOM, Institut Bakti Nusantara, Lampung

³Study Program in Retail Management, Institut Teknologi dan Bisnis Trenggalek, Jawa Timur

^{1,2}Wisma Rini Street, No.09 Pringsewu, Lampung, Indonesia

³Soekarno-Hatta Street, Kelutan, Trenggalek, East Java, Indonesia

E-Mail: nengachie@gmail.com¹, k141ne71@gmail.com², srisuryamandala@itbtrenggalek.ac.id³

Abstract

With technological developments, learning in schools or lectures can implement computer-based learning systems. With the presence of technology, the teaching process using educational game applications for reciting the Qur'an can be an alternative learning method when students feel bored or tired during learning. Reciting the Qur'an, which refers to the activity of reading the Qur'an, is a skill that every Muslim should have and that needs to be taught to children from an early age, starting before they enter school. This is an important part of forming their character. However, at an early age, children still tend to prefer playing, and limited methods of teaching the Koran may not be interesting enough for them. Therefore, an interactive learning method is needed using audio-visual aids, such as educational games. This approach not only makes learning more interesting but also more interactive. This application can increase children's understanding and knowledge about the Islamic religion, especially in terms of reciting the Qur'an. By applying the concept of learning while playing, children become more comfortable, interested, and happy in understanding and practicing the teachings of the Islamic religion.

Keywords: educational games to learn the Qur'an; Asmaul Husna; Hijaiyah letters; game

I. INTRODUCTION

The development of increasingly advanced and sophisticated times, especially in the field of information technology, makes human work easier and also seems inseparable by distance, space, and time. One of them is the development of mobile information that we see today, which is growing rapidly. And the level of activity of each person is getting higher, so mobile usage is also getting higher too.

Jakarta, iNews.id, The Indonesian Internet Service Provider Association noted that one form of entertainment that many people chose during the COVID-19 pandemic was playing online games, at 16.5 percent [3]. Playing games is one of the easiest entertainment options to reach during a pandemic like now. As a result,

the number of gamers has increased drastically in various countries. Mobile games experienced the biggest increase this year, with revenue of US\$ 77.2 billion, or growing by 13.3% of the year. Meanwhile, console game developers recorded that revenue during 2020 was US\$ 45.2 billion, or 6.8% of the year. On the other hand, PC games generated US\$33.9 billion this year [4]. This phenomenon is influenced by work from home (WFH) and study at home policies, which have led to increased use and downloads of online game applications, with a predicted increase of 21.6 percent in 2025. In the long term, online game addiction can also result in mental disorders of executive functions required for planning. It is feared that this will become a serious national problem, which has the potential

to affect the quality of Indonesia's human resources in the future. Of course, online games are not an ordinary thing in this era of accelerated information. Online games are not just a problem for parents or teachers, nor are they just a problem for young people. Online games have penetrated various levels of society [5].

Previous research shows that every child learns differently, and that applies to adults. By introducing play-based learning, we can maximize academic standards by having more than one way to teach the same concept. Students completing kindergarten are encouraged to continue developing their understanding of independence, building social skills, social-emotional development, motor function, and more [6]. In achieving indicators of developmental aspects, one of the efforts to develop early childhood can be done through play. Playing is a child's main activity every day. This is because the real world of children is the world of play. Playing is an activity that someone does to get pleasure, without considering the end result [7].

From research conducted by M. C. Pareswara and T. Lestari, it can be concluded that technological developments can make it easier for humans to access various kinds of information and entertainment. One form of entertainment that is popular among elementary school children is playing online games. However, with online games, this has many negative influences on users [8]. Based on the research results, it can be concluded that the educational game method is effective in improving mathematics learning outcomes in class II of SD Negeri Demakijo 1, Gamping Sleman, in the 2016–2017 academic year. This is indicated by an increase in the average post-test score for the experimental group learning using educational game methods of 7.26 compared to the average post-test score for the control group of 6.51[9].

In the TPQ Darussalam environment, there are many children who actively play games, in quite significant numbers. However, it should be noted that most of the games they played were not related to religious education. Considering this great interest, TPQ took the initiative to develop a Qur'an recitation game application. This step was taken as an effort to integrate religious learning with activities that children like. With this Qur'an recitation game application, it is hoped that children can learn

religion in a more interactive and fun way. Apart from that, this application is also a creative solution for utilizing technology to support religious education amidst the challenges of an ever-evolving era. Thus, TPQ Darussalam strives to present learning methods that suit children's interests and needs while still paying attention to religious values that are important in developing their character [10]. From the background explanation above, the problem formulation that researchers get is: how to design a game application or educational game for reciting the Qur'an based on interactive multimedia at TPQ Darussalam. Based on the problem formulation above, the aim of conducting research is to design game applications or educational games with a focus on reciting the Qur'an, which can help increase the effectiveness of learning at TPQ Darussalam. This can include improving students' understanding, memory, and motivation.

II. RESEARCH METHODS

2.1. Theoretical Framework

A. Designing

Design is the process of creating or developing a new system that is implemented to overcome pre-existing problems. The system design stage can be described as the step after analysis in the system development cycle, which involves defining functional requirements, preparing to design a system implementation, and describing how a system will be formed. It covers aspects of visualization, planning, and sketching constraints, including the configuration of the software and hardware components that make up a system [15].

B. Game Application

A game is an activity that involves a group of people applying a number of rules that create a competitive situation. In the game, participants choose strategies with the aim of maximizing personal wins or minimizing opponents' wins. These activities are structured or semi-structured and include interesting and enjoyable elements, generally for entertainment purposes. Games are divided into three main types: role-play games (RPG), real-time strategy (RTS), and first-person shooters (FPS). Apart from that, games can be divided into various genres that have special characteristics, such as adventure, action racing, arcade, logic, board games, simulation, and education [12].

C. Multimedia

Multimedia is a combination of video, audio, graphics, and text in a multi-level, computer-based production that can be experienced interactively. The basic concepts of multimedia include:

1. Movie

A movie is an animation made in Flash. In making an animation, someone will arrange the storyline, which can be called a movie clip, by making several objects and stringing them into an animation.

2. Object

Before creating an animation, usually an object will be created first, and then its movements will be arranged.

3. Texts

The basis of word processing and multimedia-based information is text. Text itself is data in the form of characters, which are usually used in the delivery of information.

4. Voice

The physical phenomenon produced by a vibration is sound. Usually, to clarify information, voice is used. Voice can also clarify the characteristics of an image, such as music or sound effects.

D. Interactive Multimedia

Unity between various media in the form of text, images, graphics, voice, video, animation, interaction, and others is the meaning of multimedia, which itself is packaged into digital or computerized files that are usually used to convey messages to other people or the public, while two-way communication or more of a communication component is usually called interactive. There are several methods that are usually used in presenting multimedia:

1. Paper-based, for example: magazines, books, and brochures.
2. Light-based, for example: slide shows, transparency.
3. Voice-based or audio-based, for example: CD players, tape recorders, and radios.
4. Moving-image-based, for example: television and film.
5. Digitally-based, for example: a computer.

As for the benefits of interactive multimedia, especially in the field of education or learning:

1. The learning process will be more interesting.
2. Learning is more interactive.
3. The amount of teaching time can be reduced.
4. The quality of learning can be improved, and the learning process can be done anywhere and anytime. In addition to that, the students' learning attitude will be improved.

E. Interactive Multimedia in Learning

Interactive multimedia is multimedia that is equipped with a controller that can be operated by the users so that the users can choose what they want for the next process, for example: interactive learning, game applications, and so on.

F. Educational Games

Educational games are games that are used in the learning process. This game contains educational elements or values. According to Andang Ismail in his book "*Education Games*," educational games are fun activities and are educational methods or tools that are educational in nature.

G. TPQ Darussalam

The National Education System Law, Number 20 of 2003, states that religious education can be carried out through formal, non-formal, and informal methods. The 1945 Constitution concerns the state, and all Indonesians must participate in making the lives of the nation and the state intelligent.

We from the TPQ (Al-Qur'an Learning Center) of Darussalam, Gunung Kancil Pringsewu, want to play a role in making people's lives smarter through non-formal educational institutions in the form of TPQ. Considering the influence of the era of globalization, the children of this nation's next generation have begun to be drawn into promiscuity due to a lack of religious education. TPQ Darussalam aims to help the state and society by preparing and equipping children with Islamic religious material, with the hope that the existence of TPQ Darussalam can produce a young generation that is intelligent, has character, is devoted to Allah SWT, and has good morals. The aims of establishing the TPQ (Al-Qur'an Learning Center) in Darussalam are:

- a) Improve the ability to read, write, and understand the Qur'an.

- b) Improve the ability to be fluent in correct recitation.
- c) Make male or female students have the morals of the Qur'an by memorizing the Qur'an.
- d) Foster male or female students to love the Qur'an and make it a special reading in everyday life.
- e) Develop the ability of male or female students to enjoy and play musical instruments with religious nuances (*Hadroh*).
- f) Understand the basics of religion by learning how to purify yourself as well as good and correct ways to worship [10].

2.2. Research Flow Framework

A framework is a diagram that outlines the logical flow of application research. Figure 1 shows the application framework [16].

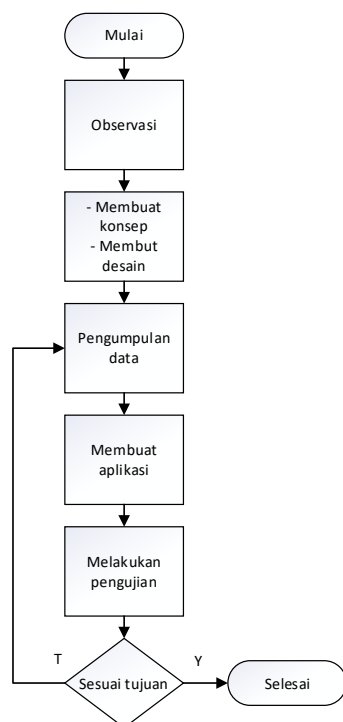


Figure 1. Application thinking framework

III. RESEARCH METHODS

3.1. Method of Collecting Data

The researchers collected data:

a. Observation

The observations made by researchers here are conducted on websites that can provide additional information regarding creating educational games or games for reciting the

Qur'an and guidance or directions for creating programs. On the other hand, researchers also studied several websites that discuss presenting information about a program design that is useful for creating, displaying, and publishing in everyday life.

b. Literature Review

In compiling this research, the researchers also used the library study method by studying several reference books that can support and be continuous or related to educational games or Qur'an reading games to help the researchers in compiling and presenting the information that will be displayed.

3.2. System Development Method

The research method used in this design uses the flowchart method [17]. A flowchart can be interpreted as a series of problem-solving steps presented in the form of certain symbols. This flow diagram aims to illustrate the flow logic in a program. The use of flowcharts is not only as a communication tool but also as a guide. Before its components can be better understood, the rules of organizational chart design need to be communicated.

1. Flowcharts are arranged in top orientation from top to bottom and from left to right.
2. Each activity or process in the organization diagram must be expressed clearly and without ambiguity.
3. Each flowchart starts from a beginning or initial state and ends with one or more terminal, final, or outcome states.
4. Use the Page State connector and the similarly labeled Page Out connector to indicate that the connection between the algorithms was lost, for example, due to a page move or change.

It is important to use standard symbols so that the flowchart can simply, clearly, and unambiguously depict the steps or solution to the problem. This aims to ensure that the flowchart can be easily understood by the parties involved [18].

IV. DISCUSSION

To make modeling a process easier, researchers use UML (Unified Modelling Language). UML itself is a language for visualization, specification, construction, and documentation. UML defines graphic diagrams

when creating a model; use case diagrams, sequence diagrams, class diagrams, and activity diagrams.

A. Application Design

In this Qur'an educational game application, there is a design like the following image:

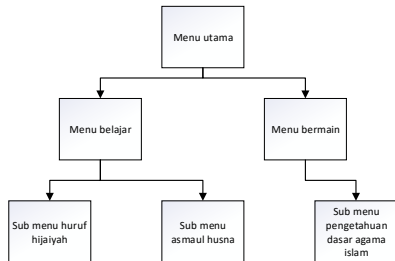


Figure 2. Application Design Section

B. Application Flowchart

Application design uses flowcharts in each menu and submenu.

The steps are as follows:

- 1) The main menu flowchart is shown in the following image.

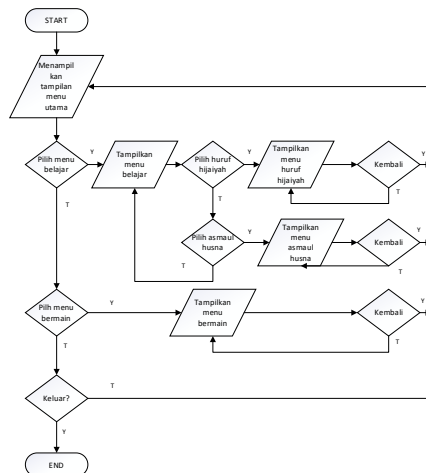


Figure 3. Main menu flowchart

- 2) Flowchart of Menu Hijaiyah Letters

In this flowchart, students will be introduced to the 28 hijaiyah letters. Apart from being introduced to Latin, this learning will be accompanied by sound effects from reading it. The hijaiyah letter flowchart is shown in the following image.

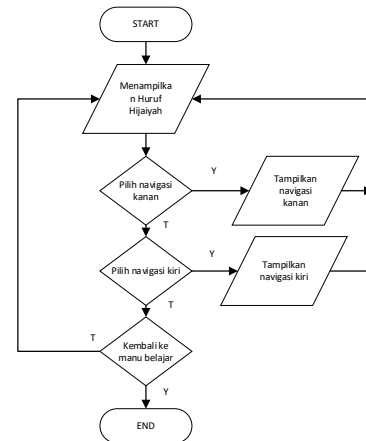


Figure 4. Flowchart of hijaiyah letters

- 3) Flowchart of Menu Asmaul Husna

In this flowchart, students will be introduced to the 99 good names of Allah. Apart from being introduced to Latin, this learning will be accompanied by meaning and sound effects in the reading. The Asmaul Husna flowchart is shown in the following image.

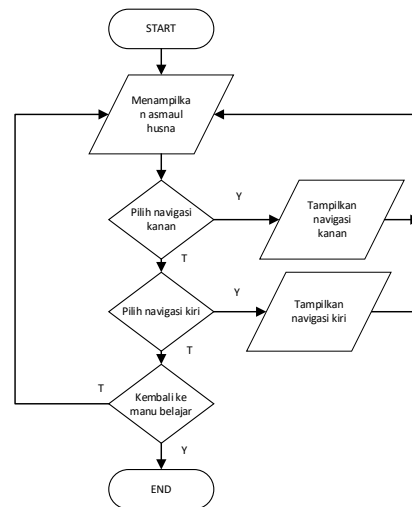


Figure 5. Flowchart of Asmaul Husna

- 4) Flowchart of Play Menu

This game allows users to hone their knowledge about the basic knowledge of the Islamic religion. The play menu flowchart is as follows:

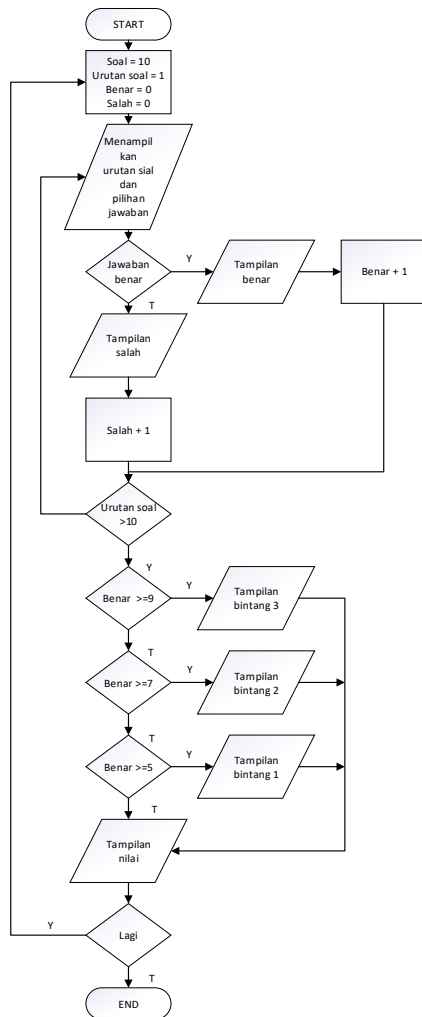


Figure 6. Flowchart of Play Menu

V. CONCLUSION

Several conclusions can be drawn from the explanation above: The teaching and learning process in schools, TPQ, or others can use a game application or educational game and can be a reference for students in learning and seeking knowledge. Apart from that, this can also be used as a medium that applies the method of learning while playing and certainly does not have to be done using books. This game application or educational game can be used as a support for students' learning so that they are more interested in learning actively, and it is also easier to understand the knowledge or learning they are studying. After seeing the presentation mentioned above, the following suggestions can be given: It is hoped that this application can really provide benefits for everyone and can provide understanding that previously did not exist about Islam, especially regarding the Asmaul Husna and Hijaiyah letters. Hopefully, by using this application, you can understand it and teach it to everyone.

REFERENCES

- [1] H. Haryanto and Bagas Friana, "Aplikasi Permainan Edukatif Mengaji Berbasis Multimedia Interaktif Haryanto," *J. Tek. Inform. Unis*, vol. 6, no. 1, pp. 8–16, 2018, [Online]. Available: <http://ejournal.unis.ac.id/index.php/jutis/article/view/36>
- [2] B. D. Prayoga, S. Ipinuwati, and ..., "Aplikasi Penyimpanan Data Barang Pada Toko Irawan Berbasis Android Menggunakan Barcode Scanner," *JMBI (Journal ...)*, vol. 01, no. 01, pp. 19–26, 2023, [Online]. Available: <https://mubtadiinpublishing.org/index.php/JMBI/article/view/25%0Ahttps://mubtadiinpublishing.org/index.php/JMBI/article/download/25/29>
- [3] Dani M Dahwilani, "Survei: 16,5 Persen Masyarakat Habiskan Waktu Main Game Online selama Pandemi Covid-19," *iNews.id*.
- [4] Irna Gayatri, "3 Developer Gam3 Developer Game yang Untung Besar di Tengah Pandemi," Content Writer RRQ .
- [5] Abdullah Fathu Rizki Umar dan Yuninda Tria Ningsih, "Kecanduan Game Online dalam Perspektif Psikologi Sosial," *Kompasiana*.
- [6] S. L. Dewi, "Pengaruh Pembelajaran Berbasis Permainan pada Pendidikan dan Perkembangan Anak Usia Dini," *Aulad J. Early Child.*, vol. 5, no. 2, pp. 313–319, Aug. 2022, doi: 10.31004/aulad.v5i2.346.
- [7] A. H. Wahyu, "Studi literatur: Permainan tradisional sebagai media alternatif stimulasi perkembangan anak usia dini ARTICLE INFO ABSTRACT," *J. Pendidik. Anak*, vol. 11, no. 2, pp. 109–120, 2022.
- [8] M. C. Pareswara and T. Lestari, "Pengaruh Game Online Terhadap Perkembangan Emosi dan Sosial Anak Sekolah Dasar".
- [9] "EFEKTIVITAS METODE PERMAINAN EDUKATIF TERHADAP HASIL BELAJAR MATEMATIKA KELAS II SD NEGERI DEMAKIJO 1 EFFECTIVENESS OF EDUCATIVE GAMES ON MATHEMATICS LEARNING RESULT IN SDDEMAKIJO 1."

- [10] Khabibur Rohman, "Taman Pendidikan Al-Qur'an (TPQ) Darussalam," Mobirise. Accessed: Feb. 16, 2024. [Online]. Available: <https://d54zjyncth.mobirisesite.com/page4.html>
- [11] S. Ipnuwati, "Aplikasi Game Edukasi Pengenalan Huruf Hijaiyah Untuk Anak Usia Dini Berbasis Android," *J. Teknol. dan Inform.*, vol. 1, no. 2, 2022, doi: 10.57084/jeda.v1i2.951.
- [12] Y. Efendi, "Rancangan Aplikasi Game Edukasi Berbasis Mobile Menggunakan App Inventor," *J. Intra Tech*, vol. 2, no. 1, pp. 39–48, 2018, doi: 10.37030/jit.v2i1.24.
- [13] A. N. Aeni, D. Djuanda, M. Maulana, R. Nursaadah, and S. B. P. Sopian, "Pengembangan Aplikasi Games Edukatif Wordwall Sebagai Media Pembelajaran Untuk Memahami Mater Pendidikan Agama Islam Bagi Siswa Sd," *Prim. J. Pendidik. Guru Sekol. Dasar*, vol. 11, no. 6, p. 1835, 2022, doi: 10.33578/jpkip.v11i6.9313.
- [14] F. N. Khasanah, S. Murdowo, T. Informatika, U. Bina, P. Beta, and P. N. Fungsional, "Pengujian Beta Pada Aplikasi Game Edukasi," *Infokam*, vol. 15, no. 2, pp. 83–89, 2019.
- [15] H. Nopriandi, "Perancangan Sistem Informasi Registrasi Mahasiswa," *J. Teknol. Dan Open Source*, vol. 1, no. 1, pp. 73–79, 2018, doi: 10.36378/jtos.v1i1.1.
- [16] "1 2 1,2," vol. 4, no. 3, pp. 298–310, 2021.
- [17] M. F. Asrozy, I. Hartami Santi, and D. Fanny Hebrasianto Permadi, "Pengkombinasian Metode Fifo Dan Metode Fefo Pada Sistem Aplikasi Pengeluaran Stok Barang," *JATI (Jurnal Mhs. Tek. Inform.)*, vol. 6, no. 1, pp. 59–66, 2022, doi: 10.36040/jati.v6i1.4282.
- [18] N. Khesya, "Mengenal Flowchart dan Pseudocode Dalam Algoritma dan Pemrograman," *Preprints*, vol. 1, pp. 1–15, 2021, [Online]. Available: <https://osf.io/dq45ef>