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DESIGNING GAME APPLICATIONS OR EDUCATIVE TEACHING GAMES BASED ON INTERACTIVE MULTIMEDIA

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Abstract

With the birth of technological developments, learning in schools or lectures inevitably applies computer-based learning systems, the presence of teaching process technology with the application of educational games for reciting the Koran can be an alternative learning when students are bored or feel tired during learning. Reciting the Koran refers to the activity of reading the Koran, which is a skill that every Muslim should have and needs to be instilled in 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 audiovisual 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 Koran. 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.

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INTRODUCTION

The times are increasingly advanced and sophisticated, especially in the field of information technology or other technologies [1]. This makes human work easier, besides making it seem like humans are not separated by distance, space, and time[2]. One of them is the development of mobile information that we see currently growing rapidly and rapidly, and the level of activity of each person is getting higher so that mobile usage is getting higher too[3].

The Indonesian Internet Service Providers Association (APJII) noted that one form of entertainment that many people chose during the Covid-19 pandemic was playing online games at 16.5 percent[4]. Playing games is one of the easiest entertainment options to reach during a pandemic like now[5]. As a result, the number of gamers has increased drastically in various countries[6]. Mobile games experienced the biggest increase this year with revenue of US$ 77.2 billion or grew by 13.3% year on year[7]. Meanwhile, console game developers recorded revenue during 2020 of US$ 45.2 billion or grew 6.8% year on year[8]. On the other hand, PC games generated US$ 33.9 billion this year. This phenomenon is influenced by the work from home (WFH) and study at home policies, which have caused a surge in the 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. 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

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future[9]. Of course online games are not an ordinary thing in this era of accelerated information[10]. 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 [11].

Past 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 [12]. In achieving indicators of developmental aspects, one of the efforts to develop early childhood can be done through play[13]. 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 [14].

From research conducted by M. C. Paremeswara 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 means of entertainment that is popular among elementary school-age children is online games. However, the existence of this online game has many negative influences on its users [15]. Based on the research results, it can be concluded that the Educational Game method is effective on 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 post-test mean score of the experimental group by learning using educational game methods of 7.26 compared to the control group's post-test mean score of 6.51 [16].

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 Koran recitation game application. This step was taken as an effort to integrate religious learning with activities that children like. With this Koran recitation game application, it is hoped that children can learn religion in a more interactive and fun way[17]. 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.

Application Game

A game is an activity that involves a group of people or groups 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, namely Role Play Game (RPG), Real Time Strategy (RTS), and First Person Shooter (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 [18].

Multimedia

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

1. Movies
   Movie is an animation created in flash. In making an animation, someone will organize the storyline or what could be called a movie clip, that is, create several objects and assemble them into an animation.

2. Object
   Before making an animation, you usually create an object first, then arrange the movements.
3. Text
   The basis of multimedia-based word and information processing is text. Text itself is data in the form of characters, usually text is used to convey information.
4. Sound
   The physical phenomenon resulting from a vibration is sound. Usually sound is used to make information clearer. Sound can also further clarify the characteristics of an image, such as music or sound effects.

Multimedia Interactive

The combination of various media in the form of text, images, graphics, sound, video, animation, interaction, and others is the definition of multimedia, where multimedia itself is packaged into digital or computerized files which are usually used to convey messages to other people or the public. Meanwhile, two-way communication or more from one communication component is usually called interactive.

There are several methods that are usually used to present multimedia, namely as follows:

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

The benefits of interactive multimedia, especially in the field of education or learning, are as follows:

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 carried out anywhere and at any time, besides that, students' learning attitudes can be improved.

Interactive Media in Learning

Interactive multimedia is multimedia that is equipped with a controller that can be operated by the user so that they can choose what they want for the next process. Examples of this multimedia are interactive learning, game applications, and so on.

Educational Games

Educational games or educational games are games that are used in the learning process and this game contains educational elements or educational values[19]. According to Andang Ismail in his book Education Games, educational games are an activity that is fun and is an educational method or tool that is educational in natu.

TPQ Darussalam

As mandated by National Education and Education Law Number 20 of 2003, which states that Religious Education can be carried out through formal, non-formal, and informal channels. The 1945 Constitution concerning the State and all Indonesian People must participate in making the life of the nation and State intelligent, so we from the Al-Qur'an Education Park (TPQ) Darussalam Gunung Kancil, Pajaresuk Village, Pringsewu District, Pringsewu Regency, want to participate take a role in educating people's lives through non-formal educational institutions in the form of TPA/TPQ and considering the influence of the current 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 in preparing and equipping children with Islamic religious material, with the hope that the existence of

TPQ Darussalam can produce a young generation who is intelligent, has character, is devoted to Allah SWT and has good morals. Among the objectives of establishing the Al-Qur'an Education Park (TPQ) Darussalam are:

1. Improve the ability to read, write and understand the Koran;
2. Improving the ability to read the Al-Qur'an, phasing with correct tajwid;
3. Make male/female students moral in the Qur'an by memorizing the Qur'an;
4. Fostering male/female students to love the Al-Qur'an and make it a special reading in daily life;
5. Developing the abilities of male students/female students in playing and playing musical instruments with religious nuances (Hadroh);
6. Understand the basics of religion by learning the procedures for: Purifying yourself, good and correct ways of worshiping .

METHOD

Method of collecting data

The researchers collected data as follows:

A. Observation

By using one method, namely the observation method, in completing this research, the meaning of the observations carried out by researchers[20]. Here is to conduct studies on websites that can provide additional information regarding making educational games or games for reciting the Koran and guidance or directions for making the program. 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[21].

B. Literature review

In compiling this research, the researcher also used the library study method, by studying several reference books that can support and be continuous or related to this educational game or game for reciting the Koran, which is none other than to help the researcher in compiling and presenting the information that will be displayed[22].

System Development Methods

The research method used in this design is the flowchart method [23]. 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 for org chart design need to be communicated[24], namely:

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 [25].

RESULTS AND DISCUSSION

To make modeling a process easier, researchers here use UML (Unified Modeling Language) modeling. UML itself is a language for visualization, specification, construction and documentation. UML defines graphic diagrams, when creating a model, namely use case diagrams, sequence diagrams, class diagrams, and activity diagrams.

A. Application Design

In this Koran educational game application, there is a design like the following image.

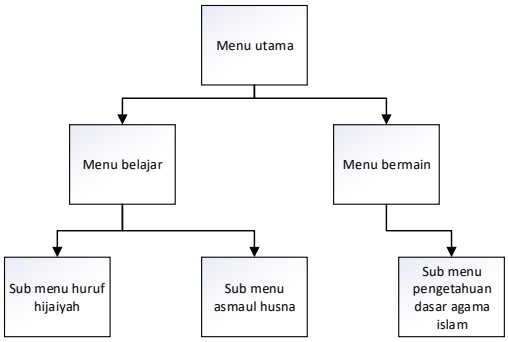

Figure 2. Application Design Section

a) Flowchart

In designing the application, use flowcharts in each menu and sub-menu. The steps are as follows:

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

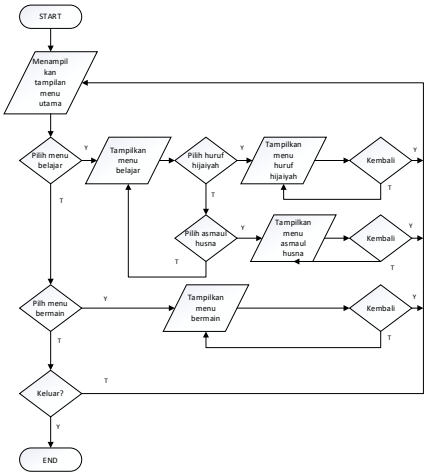

Figure 3. Main menu flowchart

2) Hijaiyah Letter Menu Flowchart

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

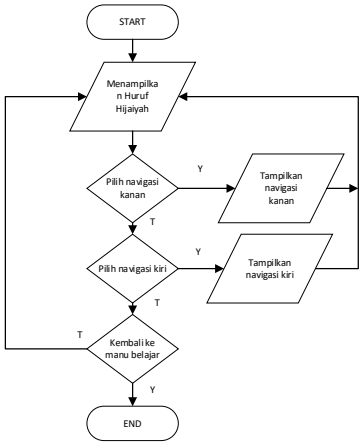

Figure 4. Flowchart of hijaiyah letters

3) Asmaul Husna Menu Flowchart

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

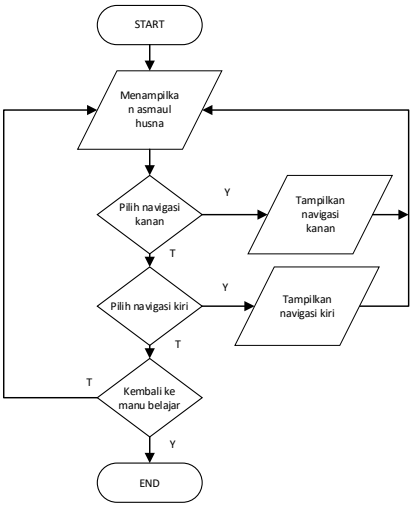

Figure 5. Asmaul Husna flowchart

4) Play Menu Flowchart

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

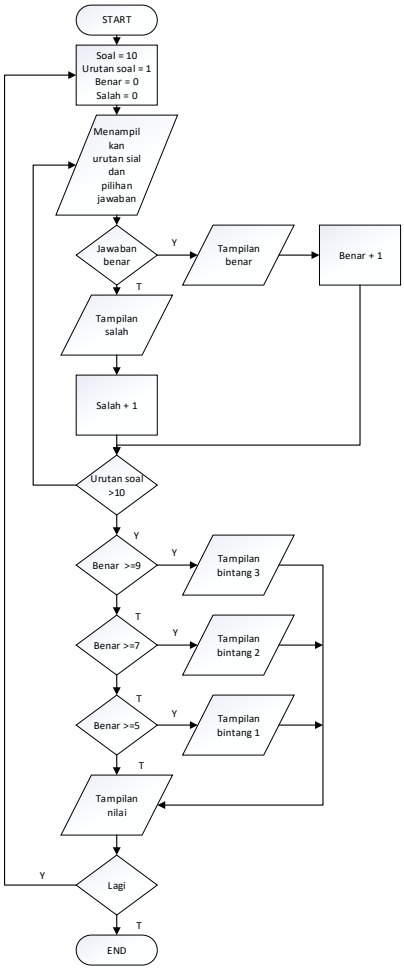

Figure 6. Play menu flowchart

CONCLUSION

Several conclusions can be drawn from the explanation above, namely: 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 or santri in studying and seeking knowledge, besides that it can It is also 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' or 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, it can provide understanding that previously did not know about Islam, especially regarding the Asmaul Husna and Hijaiyah letters, hopefully by using this application you can understand, understand, and can teach it to everyone.

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