

Development of Android-Based Banten Cultural Introduction Media for Children at the Amanah As-Sodiqiah Rajeg Orphanage

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ABSTRACT

This research started with the demand for innovation in the world of learning, along with the increasingly rapid development of technology that is beneficial to the world of education, one of which is the use of Android-based educational games to introduce Banten culture. This research aims to make it easier for orphanage children to learn about Banten culture in Indonesia. Another reason for the purpose of making this educational game is none other than to get an idea of the differences in the results of foster children's knowledge between educational games and books of knowledge. The software that I use is Construct 2. The research uses data collection methods and a problem approach which includes literature, observation, design and testing and implementation. The result shows that the application has been created has a percentage of 79.42% where this value means that this application is fairly good.

1. Introduction

Indonesia is a country that has a lot of diversity in terms of culture, ethnicity, religion, and beliefs [1]. Cultural diversity in Indonesia is something that cannot be denied, one of which is in the province of Banten. Banten is an area that has cultural potential that is still developing optimally, the diversity of Banten culture reflects the beliefs and culture of the local community which is influenced by elements of Islam, so that the socio-cultural identity of the community is known as a religious Banten community. The uniqueness of Banten culture can be seen from various traditional arts, traditional ceremonies, traditions of belief in religious rituals and other activities [2].

However, at this time children are less interested in understanding and learning about the culture in Indonesia, one of which is Banten culture which is increasingly forgotten because they know more about foreign culture than their own culture [3]. This is because the media for introducing culture is only manual, namely in the form of books containing material. Therefore, an interactive and non-boring, fun and easy-to-understand cultural introduction method is needed.

Identifying the problems that occur at the As-Sodiqiah Orphanage, namely the lack of interest and enthusiasm of foster children in learning about cultural introduction because the media used is only through books. This is considered less interactive because it often makes foster children feel bored and fed up. As well as the lack of innovation in providing interesting

and educational cultural introduction media. The development method used in this study is RAD (Rapid Application Development) [4].

Based on the results of Agustinus Sirumapea's research [5] Regarding the Design of an Adventure Game to Get to Know Temples in Magelang. It can be concluded that with this game, it can provide information to users about the existence of temples in Indonesia.

In addition, the Design and Construction of an Educational Game to Introduce Shadow Puppet Images as a Media for Preserving Traditional Culture was also carried out by Dhimas Dwi Praseno [6]. The results of this study are as a medium for children to get to know more about shadow puppets and so that shadow puppet art can continue to follow developments in the current era.

The RAD (Rapid Application Development) method was also used for the Design of an Android-Based Nusantara Culture Introduction Application conducted by Eko Suharyanto [7]. The results of this study are to make it easier for users, especially children, to remember knowledge about the Indonesian archipelago culture in Indonesia through Android smartphones easily, practically and in an educated manner.

The RAD (Rapid Application Development) method was also used in Agung Dwi Saputro's research [8] on the Design of an Educational Game for Hunting the Bauzi Tribe in Mambarmo Papua. The results of this study are to create educational media in the form

of games to make it easier for people to learn about the Bauzi tribe. .

Haris Febriyanto [9] in the Educational Game for Introduction to West Kalimantan Culture and Tourism Using the Android-Based Finite State Machine Method. The results of this study are to design a game as an introduction media and make it easier for people who want to visit tourist attractions and culture in West Kalimantan.

Therefore, the purpose of this study is to build an android-based introduction media to introduce children to Banten culture so that it is not easily forgotten by introducing characters through the game.

2. Method

2.1 Development Method

The type of research developed by the author is RAD (Rapid Application Development). The purpose of using this method is to provide a system to meet user expectations, but often when developing a system does not involve the users of the system directly, resulting in the system being created not being used by its users or even refusing to use it [10].

2.2 Data Collection Method

To obtain the required data, the author uses a qualitative research method, in qualitative research data analysis must be carried out carefully so that the data that has been obtained can be narrated properly. Qualitative research is carried out with characteristics that describe facts or a real situation [11]. Some data collection techniques include the following:

Interviews: The interview method is carried out to obtain information by asking the resource person [12].

Observation: The observation method is carried out by directly observing the research object, by noting important things related to the research title[13].

Literature Review: The Literature review method is carried out by searching for a source from various ways including through books, journals, and websites which will be the basis for theoretical studies in conducting research [14].

Questionnaire: The Questionnaire method is carried out by giving a set of written questions or statements to respondents to be answered [15].

2.3 Analysis and Design Methods

In designing this learning media, the method used is the RAD (Rapid Application Development) development method [16]. This development methodology consists of several stages, namely:

Literature study: This research begins with a literature study, namely the collection of data that is directly related to the problems discussed so that it can help solve problems in the Banten cultural introduction media.

Introduction Media Design: At this stage, the design of the system to be built is carried out, such as prototype design, flowchart design, and educational game application interface design such as main menu design, menu, and explanation of Banten culture.

Making Educational Game Applications: The stage of collecting materials that are in accordance with the needs being worked on. These materials include photos, animations, videos, audio, and others that can be obtained for free or by ordering from other parties according to the design.

Application Trial and Evaluation: At this stage, the system that has been designed is then developed using Construct 2.

Preparation of Final Reports and Conclusions: At this stage, a report is prepared on the entire contents of the research and its analysis into a final assignment writing format accompanied by a final conclusion.

2.4 Research Object

The author conducted research at the As-sodiqiyah Orphanage located at Kp. Gandaria Kobet RT 005/ RW 008, Sukatani Village, Rajeg District, Tangerang Regency, Banten.

The cultural introduction learning method used at the As-S Orphanage is still manual, namely by using books containing materials as a medium for introduction and learning.

2.5 Analysis of the Current Learning System

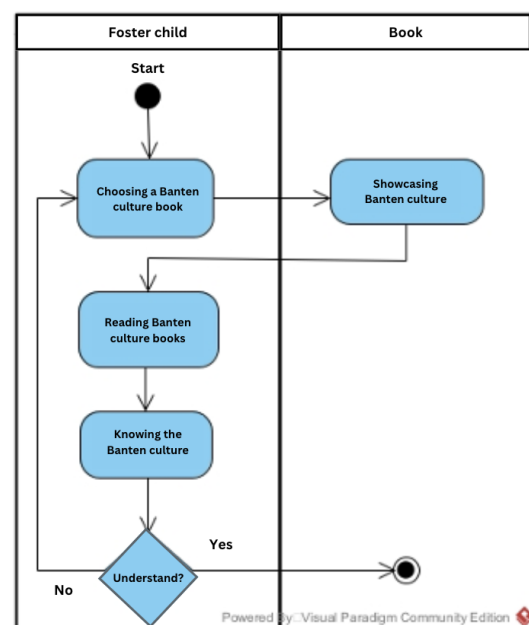


Figure 2. Activity diagram of the system currently running

2.6 Problems faced

The problems identified by the author in this study stem from how and what the implementation of this

application itself is like. So there are several problems faced, including:

1. Getting to know Banten culture through books is considered ineffective, because foster children can only read.
2. Banten culture presented through books is usually too long. This makes foster children feel bored.
3. Some Banten culture books on the internet have an unattractive appearance.

2.7 Problem Solving

Based on this, the author tries to provide alternatives to the problems faced, namely:

1. Designing a game with a short but clear flow of getting to know Banten culture so that the process of introducing Banten culture to foster children is more effective.
2. Providing education about getting to know Banten culture among children.
3. Adding new experiences in the process of introducing Banten culture where foster children have never tried it before.

2.8 User Requirement (Elicitation)

Final Draft Elicitation [17] is the final form of the elicitation stages that can be used as a reference and basis for development. Based on Elicitation Stage III, a final draft of requirements is produced which is expected to make it easier for the author to create the system.

Table 1. Final Elicitation

<i>Functional</i>	
<i>Needs Analysis</i>	
<i>No</i>	<i>Information</i>
1.	Displaying Main Menu
2.	Displaying the Instructions Menu
3.	Displaying Profile Menu
4.	Displaying the Material Menu
5.	Showing Quiz
6.	Showing Games
7.	Showing Scoreboard
<i>Non Functional</i>	
<i>I Want The System To Be Able</i>	
1.	Runs on Android Smartphone
2.	Played easily by Foster Children
3.	Attractive appearance

3. Result and Discussion

In this study, a product will be created in the form of an introduction media using Construct 2 for an

android-based introduction to Banten culture for children at the Amanah As-sodiqiah orphanage that can be used as an introduction media. Because the introduction system is still conventional, and the lack of understanding of the foster children in introducing culture. For that, an innovation or new way is needed to increase children's enthusiasm in learning cultural introduction. Therefore, the author created an android-based introduction media with the concept of "Learning While Playing" which is made with a combination of elements of cultural introduction. This introduction media is equipped with interactive buttons so that the foster children themselves can interact with what is presented in this multimedia. The material in this learning media is presented attractively because it is equipped with animation, narration and background music that can entertain users. This introduction system will greatly assist caregivers and foster children in learning activities in the orphanage environment and is expected to be accepted by the foster children at the Amanah As-sodiqiah orphanage. The main purpose of creating this introduction media is to facilitate knowledge of Banten culture so that it is fun and not boring among foster children. B. System Design Diagram

The design in a system is done to facilitate the flow of data in the program. So that it makes it easier for someone to create a system so that the system can be easily understood [18]. At this research stage, the author uses an activity diagram as a Unified Modeling Language (UML) design consisting of Use Case Diagrams, Activity Diagrams and Sequence Diagrams in the running system. The following is a diagram illustration of the system design:

3.1 Use Case Diagram

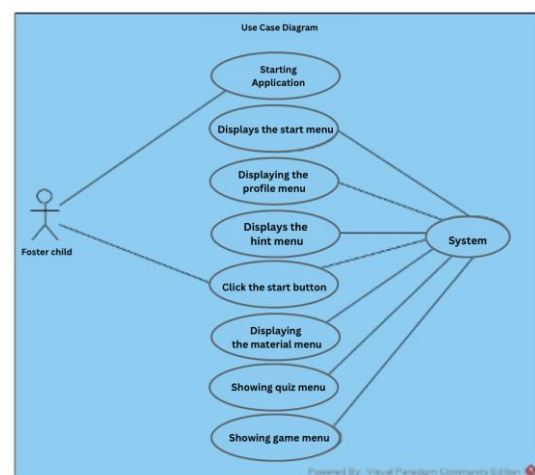


Figure 3. Proposed Use Case Diagram

In Figure 3. There is 1 actor in the application to be created, namely Player, the task of a player is to run a system in the introduction media.

3.2 Activity Diagram

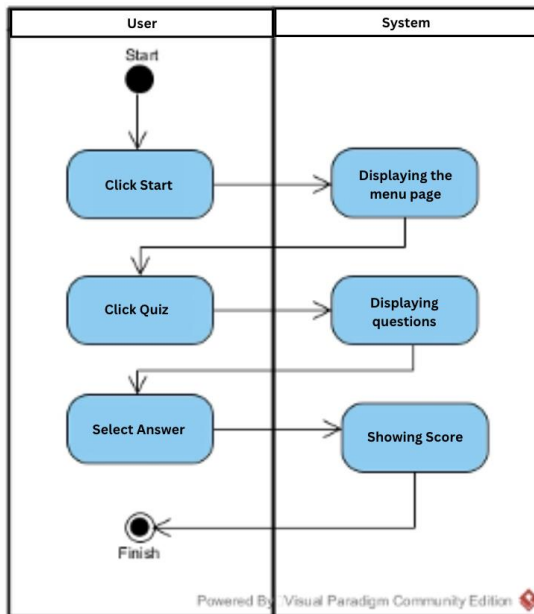


Figure 4. Activity Diagram

Activity Diagram is a design of the flow of activities or work flow in a system that will be run[19].

In Figure 4. Activity Diagram is the Quiz Menu Selection Activity Diagram where the player opens the introduction media menu page before entering the introduction media area and starting the introduction media application.

3.3 Sequence Diagram

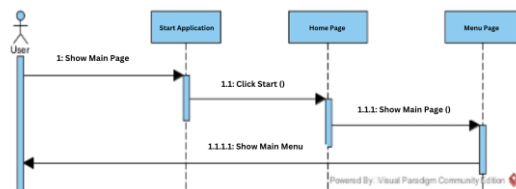


Figure 5. Sequence Diagram

In Figure 5. Sequence Diagram, the user opens the child introduction media and is directed to the main page first. On the main page there is a start menu. The user clicks the start menu and is directed to the Menu page which contains the Material menu, Quiz Menu, and Game Menu.

3.4. Storyboard

A storyboard is a sequence of sketch images that illustrate a storyline [20]. A storyboard is created using software or can be made with paper and pencil. It can also be in the form of still images in each segment with frame keys. The following is a storyboard of the proposed system

Table 2. Storyboard

No	Sketch	Information
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1.		The main page will appear when the player starts the application, with the start submenu in the image.
2.		The material menu page contains several materials that will explain Banten culture.
3.		The quiz menu page displays quizzes 1-10 containing quizzes
4.		Game Page Display, the game in this application is a game of arranging letters according to the picture problems listed.
5.		Instruction Page View, this view explains how to use the application, there is a back button to exit the instructions page.
6.		The profile display consists of information.

3.5 Application Design

The final result of this application design is a media learning application for introducing Banten culture which is designed as follows:

a. Menu Page Display



Figure 6. Menu Page Display

Figure 6. Is the menu page that is displayed when the user clicks the start button on the main page. The menu page contains several buttons such as the material button, quiz button, game button and home button.

b. Material Selection Display



Figure 7. Material Selection Display

Figure 7. Is the material selection displayed when the user clicks the material menu on the menu page. The material selection display contains several buttons such as the sub-theme selection buttons 1 to 4 and the home button.

c. Quiz Display



Figure 8. Quiz Display

Figure 8. Quiz Display that is displayed when the user clicks the Quiz menu on the menu page. The quiz questions consist of 10 questions. The buttons used are the buttons when answering the quiz, such as multiple choice questions. quiz and home to return to the menu page.

d. Game Display



Figure 9. Game Display

Figure 9. Is the game display that is displayed when the user clicks on the game menu on the menu page. The game questions consist of 5 questions, the button used is the drag and drop letter button to its place so that it can be arranged into the correct word. The game display will appear successfully when the letters are arranged into words according to the question instructions.

3.6 User Acceptance Test (UAT) Testing Results

The User Acceptance Testing (UAT) method is useful for finding out the response of a respondent or user to the system that has been built, which is by using a questionnaire. The following is the questionnaire data obtained from the foster children of the As-Sodiqiah Orphanage through the User Acceptance Test (UAT) testing stages.

a. Analysis of the first question

From the table above, it can be concluded that the total value of the 10 respondents in the first question is 49. The average value is $49/10 = 4.9$ The percentage value is $4.9/5 \times 100 = 98\%$.

b. Analysis of the second question

In the table above, it can be concluded that the total value of the 10 respondents in the second question is 44. The average value is $44/10 = 4.4$ The percentage value is $4.4/5 \times 100 = 88\%$.

c. Analysis of the third question

In the table above, it can be concluded that the total value of the 10 respondents in the third question is 46. The average value is $46/10 = 4.6$ The percentage value is $4.6/5 \times 100 = 92\%$.

d. Analysis of the fourth question

In the table above, it can be concluded that the total value of the 10 respondents in the fourth question is 48. The average value is $48/10 = 4.8$ The percentage value is $4.8/5 \times 100 = 96\%$.

e. Analysis of the fifth question

In the table above, it can be concluded that the total value of the 10 respondents in the fifth question is 46. The average value is $46/10 = 4.6$. The percentage value is $4.6/5 \times 100 = 92\%$.

f. Analysis of the sixth question

In the table above, it can be concluded that the total value of the 10 respondents in the fifth question is 46. The average value is $46/10 = 4.6$. The percentage value is $4.6/5 \times 100 = 92\%$.

g. Analysis of the seventh question

In the table above, it can be concluded that the total value of the 10 respondents in the sixth question is 50. The average value is $50/10 = 5$. The percentage value is $5/5 \times 100 = 100\%$.

Based on the calculation results above, the application that has been created has a percentage of 79.42% where this value means that this application is fairly good.

4. Conclusion

Based on the results of the study, the following conclusions can be drawn (1) The learning process at the As-sodiqiah Orphanage every day only uses books as media. This makes foster children get bored and tired of learning more quickly; (2) With this educational game, which is based on Android, it is designed to be attractive and easy, so that the orphanage children are more enthusiastic in learning culture and do not get bored easily; (3) With the results of the User Acceptance Test used as a method to obtain conclusions that application users agree between the application that has been created and their needs. The results of the UAT test obtained an average value of 79.42%. (4) The responses given by caregivers and foster children were very good because this introductory media is something new for caregivers and foster child participants at the Amanah As-Sodiqiah Orphanage.

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