

Design Development for Interactive Learning Media of Gorontalo Traditional Children's Games

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ABSTRACT

Gorontalo has approximately 21 types of traditional children's games that are rarely found in today's children's games. As we know, most traditional games usually contain educational values such as ethical, moral, and cultural values of the community. Besides that, the traditional game keeps the body fit and builds teamwork. Nowadays, it is not easy to find references to traditional children's games, especially in the Gorontalo region. Apart from the fact that only a few people, parents, and teachers know about the game, they usually forget it because they have not played it for too long. Even the literature and explanations about the game are not easy for children to understand. This research aims to develop an Interactive Learning Media for Children's Traditional Games precisely in Gorontalo. The method used in this research is qualitative descriptive studies which consist of several stages such as collecting material, analyzing system requirements, designing system flowcharts, Use Case Diagram, and Activity Diagrams. The results of this study are a design of the Gorontalo Traditional Game Interactive Learning Media which will be used as a reference for system development from the initial stage to the application prototype.

Keywords: *Interactive Learning, Learning Media, Traditional Games*

1. INTRODUCTION

Traditional games usually contain educational values closely related to the community's ethical, moral, and cultural values. Traditional games teach attitudes and skills in everyday life such as the value of cooperation, togetherness, discipline, honesty, and deliberation since there are rules that children must follow as players.

It is not easy to find references to traditional children's games nowadays. The information available from books and websites only contains the game's name and a brief description of how to play the game. Therefore, there are only a few people, both parents, and teachers, who are still familiar with the game because they have not played it for too long, and most of the time, there is only a verbal explanation about the game, which is very difficult for children to understand.

According to Gorontalo City Education Office data in 2018, there were 82 Kindergartens with 4,349 students, 107 Elementary Schools (SD) with 1,364 students, 22 Junior High Schools (SMP) with 680 students, and 7 High Schools (SMA) with 307 students [2]. This can be a potential for the implementation of this traditional game. This number is considered very large because the number of schools and students can be used to preserve local culture through traditional children's games.

It is undeniable that the existence of traditional games is increasingly being shifted due to the influence of a modern culture that enters Indonesia. If the function of cultural inheritance is not carried out as quickly as possible, the existence of traditional games will become extinct and the values contained in Gorontalo traditional games as a local culture are no longer passed down from parents to their children.

Based on the problem above, digital media such as multimedia software is needed to introduce the traditional children's games in Gorontalo. The media contains videos about various kinds of traditional children's games. This media can also show how to play traditional games visually and interactively and can be used as school learning materials for Kindergarten (TK) to Senior High School (SLA) children, especially in sports class. It is hoped that the media can introduce and preserve traditional games in the future.

To find out more about the development of research in traditional games and the results obtained in previous studies, the *Engklek* game was used as a reference for the current study [3]. This study used a qualitative approach, while the data collection technique was through observation and interviews with children who were asked to play *Engklek*. The study results indicate that the values contained in the traditional *Engklek* game are: 1) Value as a detection tool to find out children who have problems. 2) Value for good physical development. 3)

Values for good mental health, 4) Values for problem-solving, and 5) Social values.

One of the methods used to introduce the traditional culture of West Java through traditional games has been done by Wiana [4]. This research resulted in an application called '*Galah Asin Game*' introducing the traditional game. Research conducted by [5] shows that traditional games can be used to build an adequate understanding of character and honesty. Furthermore, the results of research on the preservation of traditional games with a focus on the study of local wisdom values conducted by [6] show that the residents of the traditional village of Dukuh still instil the basic concepts of traditional games from generation to generation so that the values of local wisdom include motor, cognitive values, and the moral values can still be preserved.

Algiffari's research resulted in traditional West Java games [7]. This research uses Motion Graphic techniques in designing video documentaries of traditional West Java games. Research conducted by Perwitasari shows that traditional games are very effective in the motor development of preschoolers. The research shows that this game can be used as an alternative to support the improvement of motor skills so that students are more motivated and at the same time introduce local culture through games, specifically in Gorontalo [8]

Research [9] suggests that traditional games can indirectly contribute to children's physical development, such as healthy, fit, challenging, superior, and competitive. Furthermore, the research results [10], [11], suggest that traditional games can develop children's motor skills.

The existence of togetherness in socializing, respecting others, and learning to be democratic can help sharpen brain memory. Children can also develop their memory and cognitive abilities [12]. Thus, research conducted by [13] shows that traditional games can hone children's ability to socialize with others and teach togetherness.

2. METHOD

The research procedure begins with the design of interactive learning media for children's traditional games in Gorontalo.

2.1. Material Collection

At this stage, the material was collected through interviews, observation, and document analysis from related research on traditional children's games in Gorontalo. Interviews were conducted with the community or parents who had previously played games. Observations were also made by looking at the phenomena and reality among children who rarely played this traditional game. From previous research, journal

articles discuss traditional games both in the Gorontalo area and outside Gorontalo.

2.2. System Requirements Analysis

This stage begins with a preliminary study and data collection of Gorontalo children's traditional games. Furthermore, the system requirements analysis is carried out according to user needs. This analytical data were obtained from several sources such as interviews, observations, and document analysis. As a result, a new system design will be made using tools in the form of context diagrams in describing the scope of a new system [14].

2.3. System Flowchart Design

This stage describes the flow from one scene to another or explains each step of making media logically.

2.4. Use case diagram design

This stage helps build the software system by building a pictorial representation. These diagrams can aid conceptual modeling and make it simpler and easier to understand the system.

2.5. Activity Diagram Design

This stage describes the system workflow model after the system, and user interaction modeling is made. Making this activity diagram represents the steps or flow control in the system.

2.6. System Storyboard Design

This stage describes each scene by listing multimedia objects and links to other scenes.

3. RESULT AND DISCUSSION

3.1. Material Collection

From the results of interviews and previous research searches, it was found that there were 21 types of traditional children's games in Gorontalo that children had never played in Gorontalo. The games are *Coklak*, *Kelar Hadang*, *Lompat Tali*, *Tawan*, *Tenggedi*, *Tengge-Tengge*, *Curpal*, etc.

Other data collected are supporting images that function as animated objects in learning media, such as the State University of Gorontalo logo, background images of traditional games, animations for each children's traditional games. In addition, audio data is needed as background music for each type of learning media and videos as complementary materials for learning Gorontalo children's traditional games.

3.2. System Requirements Analysis

In analyzing system requirements, it is necessary to make business process modeling that will be proposed. The business process can be modeled using a context diagram, as shown in Figure 1.

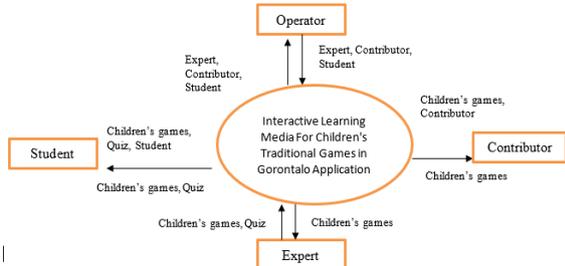


Figure 1. Context Diagram of Traditional Children's Game System

Based on the picture above, the functional requirements of the system can be analyzed as follows:

- Operators may approve contributor registration. Operators can add experts' data in the field of traditional children's games in Gorontalo.
- Students can choose what types of games they want to learn and choose quizzes as feedback on their knowledge about the types of traditional children's games.
- The Contributors can register and log in to add data for children's traditional games. The data can be in videos or explanations about the types of traditional games for Gorontalo children. The children's game data cannot be published without The Expert's approval.
- Experts can add children's game data such as children's game videos, descriptions of children's games that contain how to play, tools, and materials that must be prepared to play the game. In addition, the expert can make a quiz that will be used as an assessment and evaluation tool for students. Experts can also approve the data submitted by contributors.

3.3. System Flowchart Design

The flowchart design for this children's traditional game learning media is as shown in Figure 2.

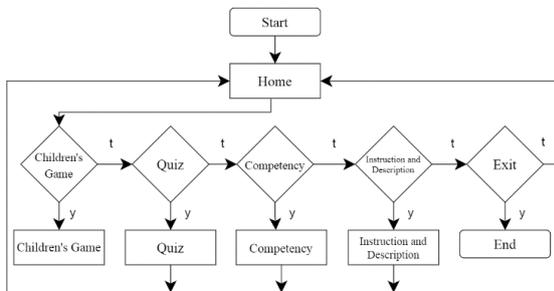


Figure 2. Flowchart Design of Children's Traditional Game System

Figure 2 illustrates the flowchart design or workflow of a traditional children's game system. The system's workflow starts from the home page and several menu options such as children's games, quizzes, competencies, instructions, and descriptions. The user can choose one of the available menus. If there is no other choice, the system is finished (end).

3.4. Use Case & Activity Diagram Design

In Figure 3, there are four actors: operators, experts, contributors, and students. Operators can only add expert data. Contributors register first before they can add children's game data. The children's game data entered by the contributors cannot be displayed directly because they must be verified by the expert first. After being verified, the children's game data will be approved by the expert, which then the children's game data can be seen by students in the system.

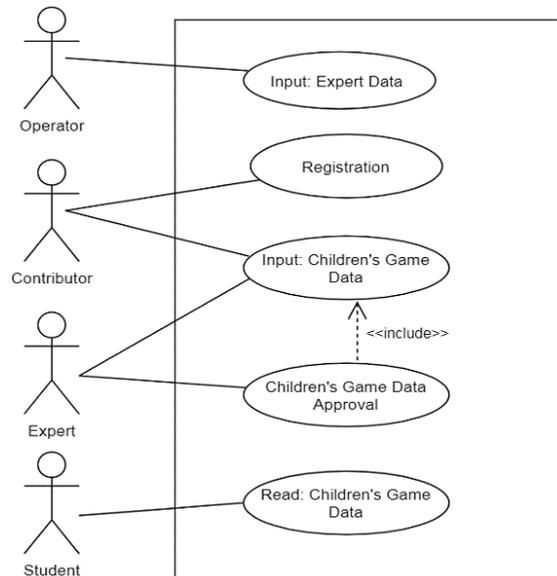


Figure 3. Use Case Diagram of Children's Traditional Game System

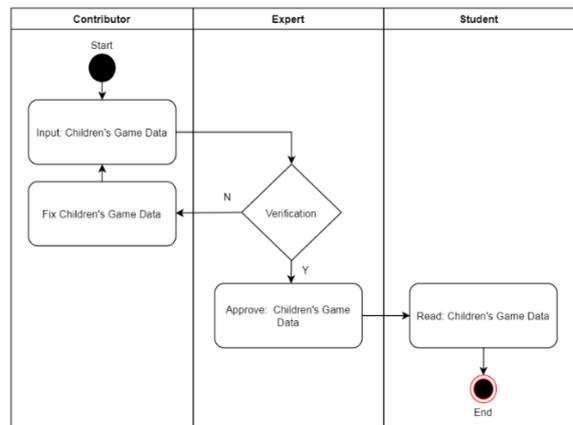


Figure 4. Activity Diagram of The Children's Game Data Approval

The design of the Activity diagram for the process of approving children's game data can be explained in table 1.

Table 1. Activity Diagram

| Actor | Use case | Implementations |
|-------------|--|---|
| Operator | Add User Expert | Operators add expert users so they can submit and approve children's game data |
| Contributor | Add children's game data | Contributors submit data on children's traditional games which will be verified by experts. |
| Expert | Add children's traditional game data and quiz data | The expert adds children's traditional game data to the system |
| | Approve | The expert verifies the children's traditional game data submitted by the contributor then approves it to be stored in the system |
| Student | View children's traditional game data | Students view and read the data about children's traditional games on the system. |

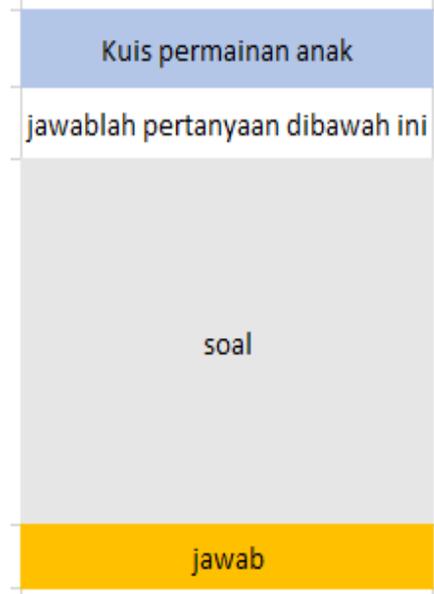
3.5. Storyboard System Design

The storyboard design in the Traditional Children's Game System is shown in Figure 5.



Figure 5. Main Page of Traditional Children's Game System

The storyboard design in Figure 5 shows several menu options that users can choose from in utilizing this learning media. The menus are children's game menus, quizzes, competencies, instructions, and descriptions.



(a)



(b)

Figure 6. Traditional Children's Game Video Page and Quiz Page

If you click on the children's game menu, it will display several children's video games choices. Next, a children's game video will appear and its description as shown in Figure 6 (a).

Figure 6 (b) shows the quiz page. This page is a means to train students to understand children's traditional games. On the quiz page, students can answer several

questions as feedback after watching several videos about children's games that have been studied previously.

4. CONCLUSION

Gorontalo children's traditional games are part of local culture and wisdom to be preserved. One way to maintain and preserve it is to make Children's Traditional Game Learning Media in learning videos in software.

This research has created a design for developing children's game learning media which consists of 6 stages. The material collection stage, system requirements analysis, system flowchart design, use case diagram design, activity diagram design, and storyboard design. The result of these stages is a design that can simplify the software development process in making prototypes of children's traditional game learning media applications.

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REFERENCES

- [1] R. W. Badu, "Pengembangan Model Pelatihan Permainan Tradisional Edukatif Berbasis Potensi Lokal Dalam Meningkatkan Pengetahuan Dan Keterampilan Orang Tua Anak Usia Dini," *Jiv*, vol. 6, no. 2, pp. 180–188, 2018.
- [2] Badan Pusat Statistik, *Kota Gorontalo dalam angka 2018*. Gorontalo: BPS Kota Gorontalo, 2018.
- [3] Iswinarti, "Nilai-Nilai Terapiutik Permainan Tradisional Engklek Untuk Anak Usia Sekolah Dasar," 2010.
- [4] R. D. Wiana, I. R. M, and A. Zpalanzani, "Perancangan Game 'Galah Asin' Untuk Memperkenalkan Budaya Tradisional Jawa Barat," *J. Komun. Vis. Multimed.*, vol. 4, no. 2, pp. 73–86, 2012.
- [5] E. Lusiana, "Membangun Pemahaman Karakter Kejujuran Melalui Permainan Tradisional Pada Anak Usia Dini Di Kota Pati," 2012.
- [6] D. Hidayat, "Permainan Tradisional Dan Kearifan Lokal Kampung Dukuh Garut Selatan Jawa Barat," *J. Acad.*, vol. 5, no. 2, pp. 1057–1070, 2013.
- [7] M. Algiffari, "Perancangan Motion Graphic (Bumper In) dan Video Dokumenter Permainan Tradisional Jawa Barat," *J. Sketsa*, vol. 2, no. 1, pp. 49–61, 2015.
- [8] A. Perwitasari, "Pengaruh Permainan Tradisional Engklek terhadap Perkembangan Motorik Kasar Anak Usia 5 sampai 6 tahun di TK Bhineka Karya Tunggul Sari dan TK Islam Bakti VIII Wonorejo," 2016.
- [9] U. Hasanah, "Pengembangan Kemampuan Fisik Motorik melalui Permainan Tradisional. Jurnal Pendidikan Anak," *J. Pendidik. Anak*, vol. 5, no. 1, pp. 717–733, 2016.
- [10] U. K. Andi Akifa Sudirman, Dewi Modjo, Firmawati, "Efektifitas Permainan Tradisional terhadap Perkembangan Motorik Anak Usia Prasekolah," 2018, pp. 215–224.
- [11] H. S. Apriliawati A.T., "Penerapan Permainan Tradisional dalam Pembelajaran Pendidikan Jasmani, Olahraga dan Kesehatan terhadap Kemampuan Motorik Siswa," *J. Pendidik. Olahraga dan Kesehat.*, vol. 4, no. 2, pp. 522–528, 2016.
- [12] L. Prastiwi, "Pengaruh Model Pembelajaran Kooperatif Permainan Tradisional Engklek dan Gobak Sodor terhadap Kemampuan Motorik Kasar Anak TKIT Salsabila 5 Purworejo," Yogyakarta, 2016.
- [13] R. Jamilah, "Permainan Tradisional Engklek dalam Peningkatan Motorik Kasar Anak Usia 5 sampai 6 Tahun di RA Al-Mukhlisin Medan TA.2016/2017," Medan, 2017.
- [14] A. B. Ladjamuddin, *Rekayasa Perangkat Lunak*, II. Yogyakarta: Graha ilmu, 2016.