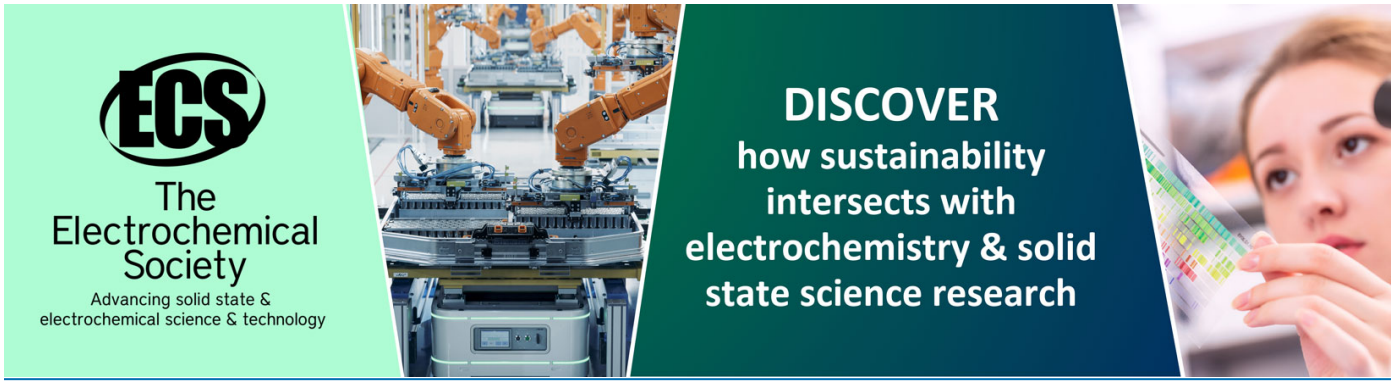
Evaluation of educational media of private body parts for down syndrome children



Evaluation of educational media of private body parts for down syndrome children

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Abstract. Educational media of private body parts for Down syndrome children is an educational media in the form of audio-video animation containing information about private body parts. This application developed as part of the supportive learning for Down syndrome children who have entered puberty so that they can avoid sexual abuse. An evaluation is carried out to determine whether the educational media created are according to the needs. The evaluation process is done by interviewing the respondent after conducting a trial on the educational media. The selected respondents were teachers, parents and students. Testing is held at SLB Tk. National Bagian C Malang. The interview questions based on several criteria for assessing multimedia applications, including 1) Ease of use of navigation, 2) Cognition content, 3) Presentation of information, 4) Media integration, 5) Artistic and aesthetics, 6) Learning function. The results of evaluations show that the educational media developed have met the criteria of multimedia assessment. Application of private body parts can provide understanding to Down syndrome children about personal body changes and social contact.

1. Introduction

Educational media for private body parts for Down syndrome children is learning that contains private body parts and the changes that occur when entering puberty. The content created in learning media is in the form of animation and audio. This learning media is intended for children with down syndrome so that they can understand about private body parts and how to protect them in their social environment.

Children with Down syndrome have a level of intelligence below average and have barriers to adjusting to their surroundings. They have a learning delay, have a short memory span, and are less able to think abstractly and complexly [1]. What distinguishes down syndrome children from normal children is in terms of speed, strength, and coordination. Children with Down syndrome tend to be slow to learn new things. They do not understand the changes and development of their physical and biological body parts [2]. This condition can cause problems in the social environment.

Educational Media of Private Body Parts for Down syndrome children developed to support children with mild down syndrome enter puberty, i.e. the early 12-15 years of age, 15-18 years of mid-adolescence, and 18-21 years of late teenage years [3].

2. Literature review

The existence of cases and the urgency of the importance of sexual education for children, has prompted much research on learning about sexual education for children with various methods, problems and different age ranges.

The first study is about the development of media for sex education based on android by presenting it in the form of pictures. The material in the educational media is about sex organs, abuse, educational tips, the origin of the baby, which is focusing on kindergarten children [4]. The second study is about educational media in the form of animation about sex education for kindergarten children [5]. The third study is an understanding of the concept of private body parts in prepubertal autistic children using magnetic board media at SLB Citra Mulia Mandiri Yogyakarta [6]. The fourth study is an educational media in the form of animated videos about the importance of covering private body parts, how to dress, and social boundaries with other people. This media is used by the children with special needs in grade V SLB Kemala Bhayangkari, Tanah Datar Regency [2]. In the current study, the object of the study were children with mild Down syndrome. Then the content created regarding the information on private body parts at puberty is in the form of animation, audio dan video.

3. Research methodology

In this study, several steps are summarised in the research methodology. The steps based on the method used in this research are literature study, data collection, requirement analysis, software development using the MDLC method (Multimedia Development Life Cycle), testing and drawing conclusions (Figure 1).

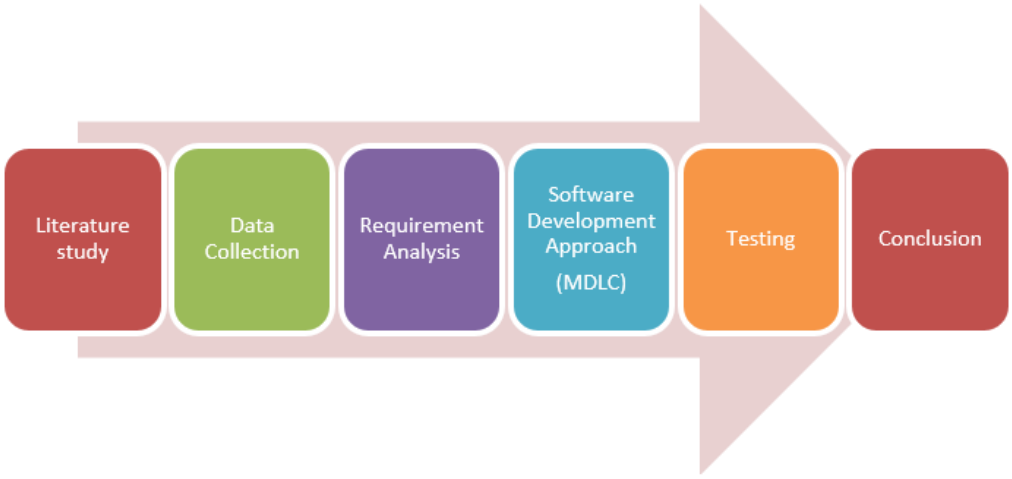

Figure 1. Research methodology.

3.1. Literature study

The literature study was carried out by searching for publications on google scholar. The search is done by entering several keywords that are relevant to the topic. From the search for literature studies that have conducted, publications that discuss sexual education and private body parts are obtained. However, there are not many publications that discuss sexual education and private body parts for children with Down syndrome.

3.2. Data collection

Data were collected by interview and observation methods. The interview method was conducted with teachers, parents and psychologists. Furthermore, the observation method also carried out in order to determine the conditions of learning carried out in SLB.

3.3. MDLC (Multimedia Development Life Cycle)

This study uses the MDLC (Multimedia Development Life Cycle) as a software development approach. In the MDLC method, there are several stages in software development, including concept, design, material collecting, assembly, testing (Figure 2).

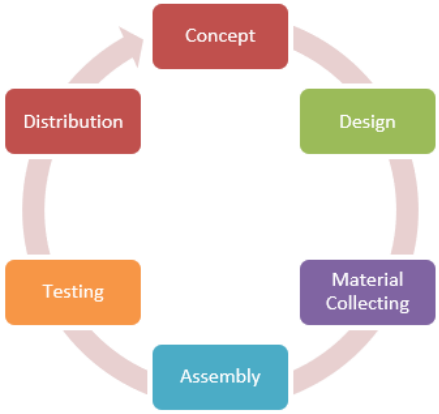

Figure 2. Multimedia development life cycle.

3.3.1. Concept. This educational media was developed for children with mild Down syndrome. The purpose of developing this educational media is to facilitate the learning process regarding private body parts (puberty). These media are used for Down syndrome children aged 12-21 years old, i.e. at the junior and senior high school levels.

3.3.2. Design. Design flowchart in this research can be seen in Figure 3.

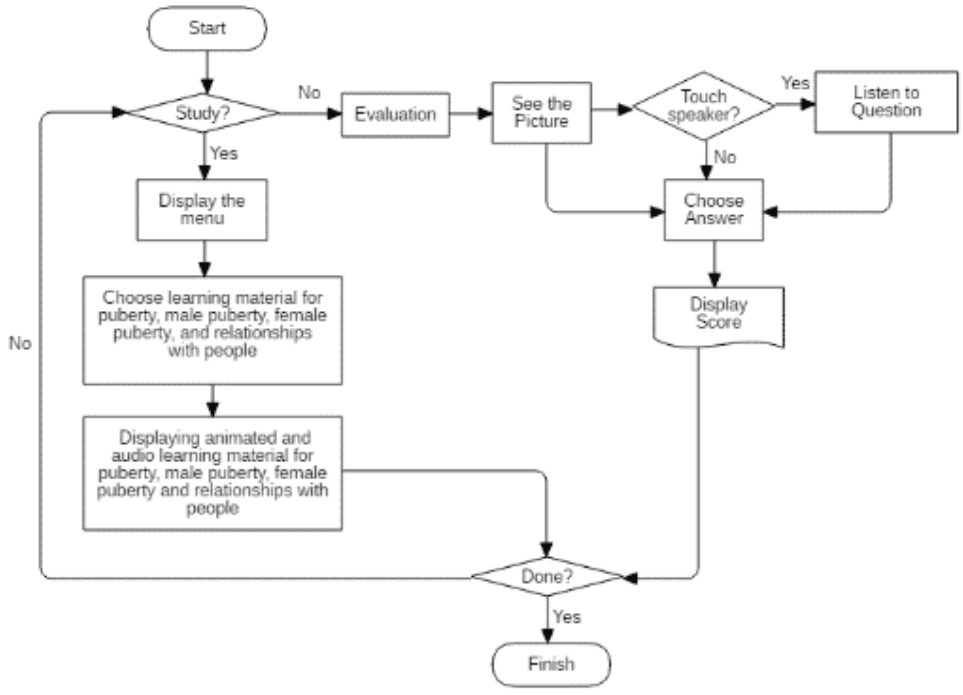

Figure 3. Flowchart.

3.3.3. Material collecting. The next stage after the design is the process of collecting materials used in application development. The material includes material obtained from interviews with psychologists, teachers, textbooks and literature studies. The assets that will be used in the learning media include character assets, background assets, and asset buttons. Then the audio files are used for background music and dubbing.

3.3.4. Assembly. The creation of all objects is based on a flowchart and begins with the creation of 3D objects using a blender application for character creation. The character can be seen in Figure 4.

Figure 4. Character.

Making design assets *User Interface* assisted using Adobe Photoshop CS 6. The process of making educational media uses Unity in 2D and uses the C # programming language (Figure 5).

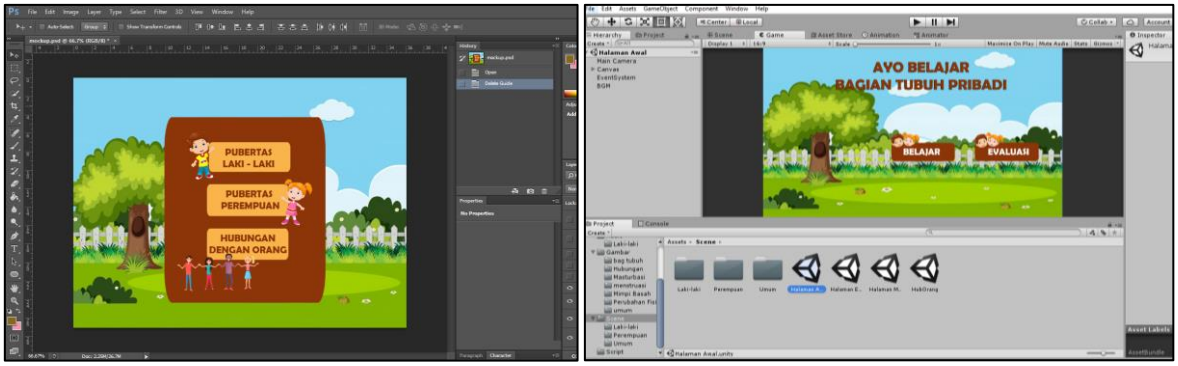

Figure 5. Creating a user interface.

3.3.5. Testing. Testing and evaluation of educational media of private body parts for children with Down syndrome are carried out using alpha and beta testing. Alpha testing is done using the BlackBox testing method. This method is done by running the application. Then see whether all the functions of the features running well. Beta testing is carried out by involving end-users of children with Down syndrome. At the time of testing, interviews were also conducted following question points related to acceptance, satisfaction and the achievement of the goals of making the educational media.

3.3.6. Distribution. At the distribution stage, the application will be stored on storage media that can be accessed by end-users. This stage also includes an evaluation process for the product so that it can be developed better. The evaluation obtained can be included in the concept and design stages in further development.

4. Results and discussion

Following are the results of learning media that have stored in form.exe.

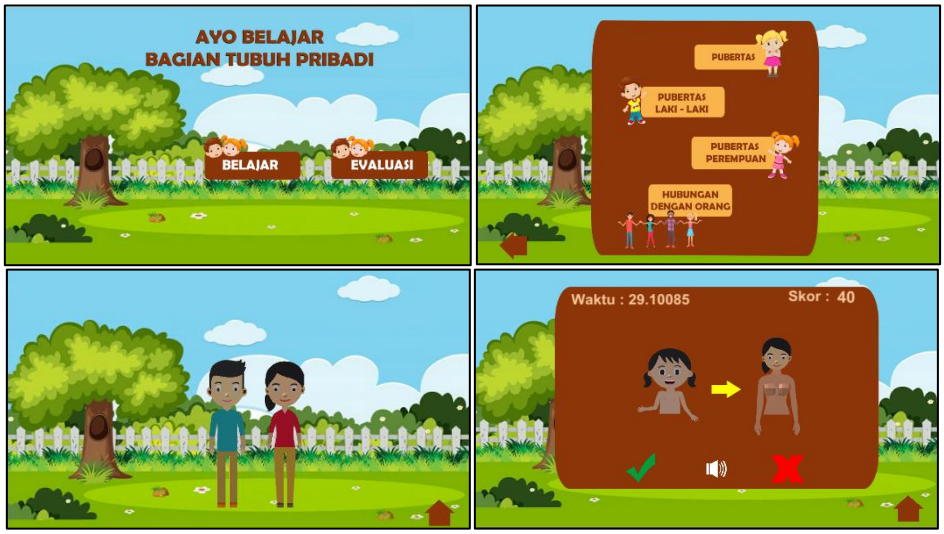

Figure 6. Educational media of private body parts.

Figure 6 Educational Media of Private Body Parts shows some views of the educational media. Figure 6 shows the home page, learning page with male body part content, female body parts and evaluation page.

The educational media that have been developed are then tested to find out whether the educational media made is in accordance with the needs. Testing was carried out by conducting interviews with teachers, parents and students of SLB C Pembina regarding the educational media that had been built. Before using the application, students, parents and teachers are given an explanation and manual book. This is done to make it easier to test the application. As early information, students who will use the application have never used computer-based learning media before.

The questions in the questionnaire are based on several criteria for assessing multimedia applications, including 1) Ease of use of navigation, so that users can learn easily; 2) Content of cognition, showing the content of knowledge in educational media clearly and easily understood; 3) Presentation of information, explaining the information presented in educational media clearly and precisely; 4) Media integration, namely educational games, there are aspects of knowledge and skills that must be learned; 5) Artistic and aesthetic, namely educational media must have an attractive application appearance and high aesthetic value; 6) The learning function is as an educational medium to provide learning and knowledge desired by users [7].

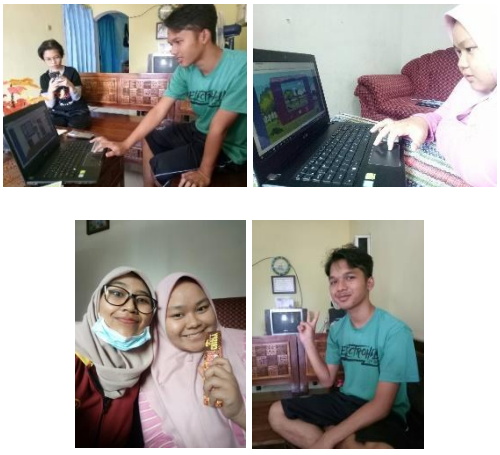

Figure 7. Educational media testing for mild down syndrome children.

After testing and interviews with teachers, parents and students, the results were as expected. Educational media has a good appearance; the user interface is easy to understand, easy to operate, and in accordance with the learning material. Educational media help students understand both content and evaluation. Students can know about wet dreams, the difference between bedwetting and wet dreams. They also understand how to communicate and interact with family, other people or strangers.

However, there are deficiencies in the learning media. (1) Each learning feature requires facilities to be able to stop animation. Because it is needed for parents, the teacher explains each part of the material repeatedly. (2) Some students cannot use or understand Indonesian, so they must be given an explanation using everyday language.

5. Conclusion

Based on the results of analysis, design, implementation and testing; several conclusions can be drawn; (1) Educational media about the private body parts of Down Syndrome children can provide learning about private body parts that make it easier for children with Down syndrome to learn and understand. (2) Based on the usability test through interviews, satisfactory results were obtained. Users respond well to educational media about body parts so that they are easy to understand and use.

Acknowledgements

The authors would like to thank the State Polytechnic of Malang (Polinema), who have supported this research project.

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