

# THE DEVELOPMENT OF ANDROID-BASED “HIRUTER” INTERACTIVE MULTIMEDIA IN INDONESIAN LESSONS IN CLASS II SD

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## ABSTRACT

The development of interactive multimedia “Hiruter” for second grade students of SD Negeri Aroepala Makassar is motivated by several problems such as most students do not understand well the contents of the material related to living in harmony which is characterized by several student behaviors. This research is a research assisted development (R&D) by adapting the development model from Alessi and Trolip which has several stages, namely the planning stage, the design stage, and the development stage. The instrument in this study used a questionnaire aimed at media experts and material experts to assess the validity of the product, and was addressed to students and teachers to assess the feasibility of the product. Based on the results of the feasibility test in terms of the material expert’s assessment, it is “very valid”, and the media expert’s assessment is “very valid”. Likewise with product testing conducted by respondents, namely class II guardians and class II students who obtained results in the “very feasible” category. Based on the results obtained after validating and testing the product by students, it was found that the product was feasible to use.

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## 1. INTRODUCTION

In simple terms, education can be understood as an effort to help the souls of students, both physically and mentally, from their natural nature towards a human and better civilization. Education is a continuous and never-ending process, so that it is able to produce sustainable quality, which is aimed at the realization of the future human figure, and is rooted in the nation’s cultural values and Pancasila.

Improving the quality of human resources has been emphasized in the national education goals. This is in accordance with what is stated in the Law of the Republic of Indonesia No. 20 of 2003 article 1 paragraph 1 concerning the National Education System which states that education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, control self, personality, intelligence, noble character, and skills needed by himself, society, nation and state.

Currently, humans have been in an era of globalization that is so rapidly developing that it has affected many aspects including information and communication technology (ICT). According to Kartikasari (2018), “Currently ICT has created an easy door for the world to enter a new era that is faster than before”. The devel-

opment of Information and Communication Technology (ICT) has also encouraged efforts to use technology results in learning to increase learning motivation. According to Huda (2020), with the development of the use of ICT, there are five shifts in the learning process, namely: (1) from training to appearance, (2) from the classroom to anywhere and anytime, (3) from paper to “online” or channel, (4) physical facility to network facility, (5) from cycle time to real time.

Communication as a means of education is also carried out using communication media such as telephone, internet, computer, e-mail, and so on (Rosenberg & Foshay, 2002). Malasari & Arif Rahman Hakim (2017), stated that these developments had a major impact on education in Indonesia, especially in facing the era of globalization which is full of challenges as it is today. Not only that, education is a very important aspect to be optimally implemented. This is because only education is expected to be able to form independent, skilled, creative, innovative, and adaptive human resources. Not only skilled and innovative, education is also expected to shape the character of students. As for the character formation of Indonesian language learning, it can play an important role.

The role of language, especially learning Indonesian for elementary school age children (SD) is very important, especially in terms of speaking both oral and written, so that it can help children to form their character. According to Pranowo (2009), “speaking well, correctly and politely can become a habit that can shape a person’s personality for the better”. The importance of language in shaping and developing character is also revealed in the 2013 Curriculum. In the 2013 Curriculum, it is stated that Indonesian language subjects have a central role in the intellectual, social, and emotional development of students and is a supporter of success in learning all fields of study, so that learning Indonesian It is expected to help students get to know themselves, their culture and the culture of others.

Through learning Indonesian, teachers are required to integrate meaningful life values in helping students to grow and develop as a whole and to become creative and wise citizens in life together. One of them is the values of living in harmony. Knowledge about living in harmony is important to understand so that students can implement it in everyday life both in the home, school and community environment in order to create a comfortable, peaceful, mutual love and respect life.

Based on the results of interviews with the second-grade homeroom teacher of Aroepalla State Elementary School Makassar, most of the students did not understand well the material of living in harmony. It is characterized by some student behavior. First, when the teacher explained the material on the theme of living in harmony, the students gave a poor response to the ongoing learning. Second, there are some students who often fight in class. Third, there are also some students who like to be alone and are reluctant to socialize because they are afraid of ridicule from their friends. Finally, the high attitude of individualism of each student. Not only that, the second-grade homeroom teacher also added that during the learning process, he had difficulty attracting students’ attention because he only relied on the existing theme books. According to him, the limitations of this supporting media resulted in the student’s learning process being less than optimal. However, this condition should be used by teachers to be more creative in terms of the learning process, especially the use of learning media.

Learning media that can help students learn, one of which is by using technology that is currently growing, namely smartphones. The use of smartphones has become widespread in both developed and developing countries. Quoted from data released by Indonesia, Baik.id said that in 2018 it was shown that 66.3% of Indonesians had a smartphone. Smartphone users based on elementary education in Indonesia in 2017 were 40.87% who owned a smartphone. However, along with technological advances and the number of smartphone users in Indonesia, it is inversely proportional to the use of smartphones that have not been optimal, especially in the world of education. This is in line with the opinion of the Head of SD Negeri Aroepalla Makassar who stated that among students themselves smartphones have been widely used but mostly only used for playing games and social media.

The use of Android-based learning media is one of the applications of learning styles in the 21st century. The use of this kind of learning multimedia is useful in helping to improve the academic quality of students in the form of students’ learning motivation and learning outcomes in the cognitive realm. The implementation of learning using smartphones is able to have a positive impact on the cognitive, affective, metacognitive to socio-cultural dimensions.

One of the android-based learning multimedia is an application called “Life in Harmony and Order (HIRUTER)” which will be developed by the author. Research will focus on developing applications that are easy to use by students by implementing interactive multimedia. With the development of Android-based

learning media in class II SD Negeri Aroepala Makassar, it will provide a different learning experience with the visual display and animation used. Therefore, students are expected to be able to understand the material easily. This application was developed with an offline version that is not connected to the server or can stand alone (stand-alone). Because to make it easier for students to access it, that is only with one install. By utilizing several tools in the developed application, it is hoped that it can increase student learning activities and motivation.

## 2. RESEARCH METHOD

This research uses the type of research and development or often known as Research and Development (R&D). Research and Development (R&D) is a research method used to produce certain products and test the effectiveness of these products. The research model taken is the Alessi & Trollip model (Alessi & Trollip, 2001). The place of research that will be carried out by researchers is at SD Negeri Aroepala Makassar. Precisely on Aroepala Street, Gunung Sari Village, Rappocini District, Makassar City, South Sulawesi. This development research uses the Alessi & Trollip model which is a modified model designed by Stephen M. Alessi and Stanley R. Trollip. The stages of this development research can be described as follows.

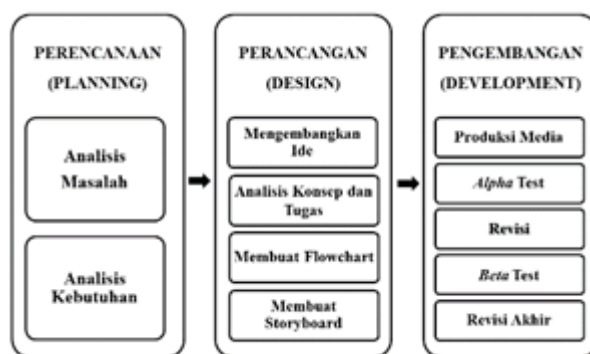


Figure 1. Research Desain

The research used is R&D research which is in the early stages or reaction so that no sampling is carried out, but the research subject is used. The research subject is based on the observed class. The research subjects are students of class II A and B. This research procedure will be adapted to the development model taken. The development model used in developing interactive learning multimedia is the Alessi & Trollip development model covering the planning, design, and development stages. Tests in this study were used to assess the feasibility of the product consisting of Alpha Testing and Beta Testing (Alessi & Trollip, 2001). The data collection technique used in this research and development consists of three, namely observation, questionnaires or questionnaires and documentation.

The instrument used in this study was a questionnaire using a Likert scale and also contained a column of criticism and suggestions given to students, teachers and validation experts (media experts and material experts). This research instrument is to identify the validity and feasibility of Hiruter media to be developed. The instrument used to obtain data on the validity of the media is using a material assessment questionnaire by a material expert and a media assessment questionnaire by a media expert. The list of questions given to the evaluators during alpha & Beta testing can be compiled according to the needs and quality criteria that have been discussed in the theoretical study section. From the study of the quality criteria for interactive learning multimedia (MPI) as well as the principles of multimedia learning, a grid of instruments was then compiled to be developed into questions.

After the data is obtained, the next step is to analyze the data. The data to be obtained in this study are qualitative data and quantitative data. Qualitative data in the form of validation sheets from experts, students and teachers containing responses, suggestions and input. While quantitative data is obtained by analyzing and processing data descriptively into interval data using a Likert scale, as follows:

Table 1. Likert Scale Statement Format

Scale	Qualification
5	Very Good/Strongly Agree/Very Interesting
4	Good/Agree/Interesting
3	Doubtful
2	Not Good/ Disagree/Not Interesting
1	Very Bad/Strongly Disagree/Very Unattractive

At the analysis stage, the data to be analyzed is Hiruter media validity data from material experts and media experts. Hiruter media feasibility data from student responses, and teacher responses. For the calculation of the entire questionnaire, the questionnaire sheets are first checked one by one, then each option is examined and added up to find the percentage and then categorized according to its level, using the following formula.

Table 2. Product Qualification Rating Scale

No.	Value Scale	Validation/Feasibility Level	Validation/Feasibility Level
1	81% –100%		Very Valid/Very Eligible
2	61% –80%		Valid/Eligible
3	41% –60%		Sufficiently Valid/Sufficiently Decent
4	21% –40%		Invalid/Not Eligible
5	0% –20%		Very Invalid/Very Inappropriate

### 3. RESULT AND DISCUSSION

The research activity with the title "Development of Android-Based "HIRUTER" Interactive Multimedia in Indonesian Language Subjects in Class II SD Negeri Aroepala Makassar" was carried out in April 2022 with 46 students as research subjects, namely class II A and B students. Types of research carried out is development research using the Alessi & Trollip model with planning, design and development stages.

The product developed is an Android-based interactive multimedia learning on Indonesian subjects that focuses on the material of living in harmony and togetherness. The purpose of this study was to develop a product and determine the validity of the media expert team and the material expert team and the feasibility obtained from the responses of teachers and students. The product in question is an Android-based interactive multimedia. The research method used in this research is research and development (R&D) by adapting the development model from Alessi and Trolip which has several stages, namely the planning stage, the design stage, and the development stage. Where at the planning stage is done by analyzing problems and analyzing needs.

The second stage is the design stage which includes a description of the initial program, making flowcharts and making storyboards. The third stage is the media development stage. This stage is a combination of the previous stages, namely, the planning and design stages. After the product is finished, then an assessment is carried out. The feasibility of interactive learning media products can be known after an assessment is carried out. To assess the feasibility of the product, feasibility validation is carried out by material experts and media experts. Experts provide advice on products developed if they are still not feasible. For product testing, product testing was carried out on class II students of SD Negeri Aroepala Makassar. In this trial, an instrument was used using an assessment score on a scale of 1-5 for material experts, media experts, teachers and students as respondents.

The assessment carried out by media experts includes an assessment of the aspects of display, navigation, audio and writing aspects. From the results of the assessment, revisions were made according to suggestions. The results of the media expert's assessment obtained a percentage of 95% with very valid criteria. The assessment carried out by material experts included an assessment of the content aspect and the display aspect whether it was in accordance with the material being taught or not. From the results of the assessment obtained a percentage of 94% with very valid criteria. Furthermore, the product which was declared valid/feasible was then tested on the respondents, namely students and teachers, then beta testing was carried out by the respondents, namely homeroom teachers and second grade students of SD Negeri Aroepala Makassar. The results obtained for student assessments are 90.4% and are included in the very feasible criteria and the results obtained for teacher assessments are 98% and are included in the very feasible criteria.

The result of this multimedia development is in the form of an android application with .apk format that can be installed on student or teacher mobile phones which can also be run offline (without using a net-

work). Not only that, the use of android-based learning media provides opportunities for students to study independently at school and at home without being limited by space and time.

Trials related to the use of interactive multimedia "HIRUTER" on students received many positive responses. Not only the enthusiasm of students in using the application, students also wrote various comments on the assessment questionnaire sheets which were distributed one by one. The students also said that with this interactive multimedia, the learning process became more exciting and fun. They also mastered the material provided which was seen from the activeness of the students in answering questions during the learning process. The teachers also said that this interactive multimedia has many positive impacts, such as students who were previously not enthusiastic when learning to be more active and enthusiastic, the learning process becomes more effective and efficient and does not require a long or long-winded and can introduce students to technological advances.

#### 4. CONCLUSION

Android-based interactive multimedia in Indonesian language subjects in class II SD Negeri Aroepala Makassar was created as a tool that can help students learn about living together in harmony and togetherness independently. Students can control the course of the program themselves using their smartphones, as well as an attractive display that can arouse students' interest in learning so that the learning process becomes more enjoyable. Based on the results of research and development that has been carried out by researchers, the following conclusions are obtained.

1. This study uses research and development (R&D) by adapting the development model of Alessi and Trollip, namely planning, design and development. This development process is carried out in 3 stages. The first stage, planning which includes problem analysis and needs analysis. The second stage is the design stage which includes a description of the initial program, making flowcharts and storyboards. Then the third stage is the media development stage which includes material collection, graphic creation, audio and video creation, product creation, alpha testing, initial product revision, beta testing and final product revision. This product development was carried out with the help of Microsoft Power Point software, iSpring Suite 10, Website 2 APK BuilderPro, Canva and VoiceFX. The result of this multimedia development is an android application with \*.apk format, which can be installed on students' cellphones and can be run offline (without using a network).
2. Feasibility of hi-inter interactive learning multimedia products based on the assessment of media experts is very feasible with a value of 95% and the feasibility of the product is assessed from the material / content aspect based on the assessment of material experts is very feasible with a value of 94%, while the feasibility of multimedia products reviewed by the user's response, which is 90.4% with very appropriate criteria for the results of the assessment of grade II students at SD Negeri Aroepala Makassar and 98% with very appropriate criteria for the results of the assessment of teachers/guardians for grade II SD Negeri Aroepala Makassar. Based on all the results from the experts and respondents, it is concluded that this interactive multimedia router is included in the "Very Valid" criteria and is considered very feasible to use.

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