



Discovering Plantae Kingdom: An Interactive Android Learning Experience with Smart Apps Creator

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ABSTRACT

The learning process today requires us to use various kinds of learning media to mediate various kinds of student learning styles, one of which is in terms of attracting students' interest in learning and improving learning outcomes. The purpose of this study is to see the advantages of SAC, especially the suitability of SAC to be used as a tool in the development of interactive multimedia learning, this research design will discuss the design of SAC for certain subject matter. In the development of this learning media using R&D research methods that have been modified according to the needs of media development. The results of this study concluded that from the aspect of the appearance of the learning media it was very interesting, the aspect of the content of the material was very feasible and the aspect of usefulness was very useful. The results of student assessment based on the display aspect get a percentage score of 91,43 % or very interesting, student assessment based on the content aspect gets a percentage score of 82,86 % or very worth it, while the usability aspect gets a percentage score of 85.71% or very useful.

Keywords: *Android, Smart Apps Creator and learning media.*

1. INTRODUCTION

Learning is a daily activity that cannot be separated from life. For the sake of a goal, learning also involves individuals, either fictional or psychological. In this technological era, the learning process is required to be efficient and students are able to obtain media information quickly, to improve learning in education which must start from improving the quality of education. Android is a media or device that runs on the operating system on every device [1]. Students use a lot of the Android operating system in each of their devices, so it's easier to apply Android-based applications to students. The word media comes from the Latin which means 'middle', 'mediator' or 'opener'. Gerlach and Ely [2] outline media as people, modules, or incidents which can support students in increasing knowledge, skills, or attitudes.

Surjono [3] states that interactive learning multimedia is a learning program in which there is text, images, graphics, sound, video, animation, simulation in a

structured and synergistic manner using the support of a set of computers or the like where users can actively use it in order to meet specific learning goals. This interactive learning can also help and motivate students during the learning process [3].

Multimedia makes it easier for us to control systematically during the learning process [4]. Learning media are auxiliary tools in the form of objects or not and can be used as a liaison between teachers and students in understanding a material so that it is more efficient and maximal. In the world of education, especially during this technological era, this is included in one of the most important means of achieving effectiveness in a teaching and learning process in schools [5].

Smart Apps Creator is a software in the form of an application that is used in making Android and iOS-based mobile applications without the need to write programs or coding and can produce exe and HTML5 formats. This software can be used in making learning

multimedia mobile applications, games, etc [6]. The reason researchers use this application is that apart from being easy to use for making learning media, there are also animations and back sounds so that it is easy to fill in content. The use of technology during online learning are two things that are inseparable during the Covid-19 pandemic. The application that will be made can be used using a smartphone, laptop or desktop PC.

The initial studies that have been carried out, there are several problems that are often experienced by students. These problems include, students tend not to have more interest in lessons if they are not integrated with existing technology, during online learning, not a few students complain about limited quotas and difficulty signaling in accessing the material provided and not all students can afford to buy physical books. As a result, access to teaching materials and their interest in a lesson decreases and will affect student learning outcomes.

Therefore, in solving existing problems, a study will be carried out "development of Android-based interactive learning multimedia using SAC" with the intention of making it easier for students to access teaching materials without being constrained by quotas or signals.

2. METHOD

2.1 Research Methods

The method used in this study is the R&D method. This method is a research method that is used in loading a product and conducting trials to what extent the success of a product is made [7] This method is suitable for product development research that already has innovations, in this case renewal, and for making tested new products. Research and development methods have a goal to develop products, tools and models [8].

2.2 Research Procedure

The research and development stages carried out according to Borg and Gall [9] include 10 steps, namely: (1) Potential & problems, (2) Collecting data, (3) Designing products, (4) Performing design validation, (5) Design improvement, (6) Product exhibition, (7) Product revision, (8) Test usage, (9) Product improvement and final steps (10) Mass assembly. But in this study, modifications were made according to the needs of the research being carried out, so that the research and development carried out was adapted to the ten stages of research and development from Borg and Gall.

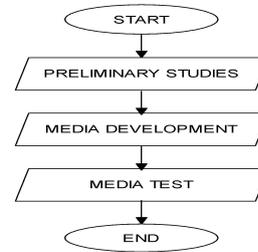


Figure 1. Research Procedure.

In general, three stages were taken which were developed by Sukmadinata [10], namely:

1. Preliminary Study
 In the initial steps of this preliminary study, several steps were carried out, firstly, a literature study and the preparation of the first product or media concept.
2. Media Development
 After the first stage is completed, the next activity is the second stage, testing the development of educational products (interactive learning media). At this stage there are two stages carried out, namely conducting limited testing and the next one is conducting more straightforward testing.
3. Media Test.
 Media test is the last stage of several steps that have been done before. At this stage, a test of the capabilities of the product that has been produced is carried out. As well as socialization of the results of the products developed.

Data collection techniques in this study used observation and questionnaire techniques. Observations were made to determine the material needs to be made of learning media. The questionnaire was used at the time of evaluation to assess in terms of media appearance, media content and usability aspects whose testing involved several users.

2.3. Data Analysis Techniques

In this study, quantitative data comes from media or instruments in the form of user rating sheets. The several stages of data analysis were made, namely: (1) tabulating data; (2) calculating the average score of the data and ; (3) convert the data obtained from the average score.

Table 1. Convert Score to Category [12].

Intervals	Category
$X \geq (x + 1.S Bx)$	Highly Feasible

$(x + 1.S Bx) > X \geq x$	Feasible
$x > X \geq (x - 1.S Bx)$	Not Feasible
$X < (x - 1.S Bx)$	Highly Inappropriate

3. RESULTS AND DISCUSSION

3.1 Results

Based on the stages of research, there are several stages of research conducted by researchers including:

1. Preliminary Study Stage

Android-based learning media has advantages in the form of an attractive design appearance, especially in terms of images, colors, writing and animation. This media is practically used, understood and easily understood by students. Smart apps creator is an application that is very easy to use even for laypeople regarding technology, because it doesn't require a complicated programming language. Android-based learning media has advantages in the form of an attractive interface, both in terms of images, colors, writing and animation [11-15]. This media is also easy to operate, understand and easily understood by students. Smart Apps Creator is a very user-friendly application, easy to use and does not require complicated programming languages.

2. Media Development Stage

Media development at this stage produces an initial product in the form of a prototype or designs a product that is adapted to the analysis that has been carried out, here the researcher collects assets by downloading the smart apps creator version 3.0.0 and starts making storyboards.



Figure 2. Storyboards.

3. Media Test Stage

At this stage, the process of developing the design of the learning media framework and instruments made in the previous stage was carried out. On products made in the previous stage. The product made in this research is in the form of biology learning media in the form of an Android-based interactive learning media which contains material on the topic of viruses in biology subjects. The following is the display of the learning media created:

- Display loading page (loading page)

This Start Page display appears when you open the application for the first time

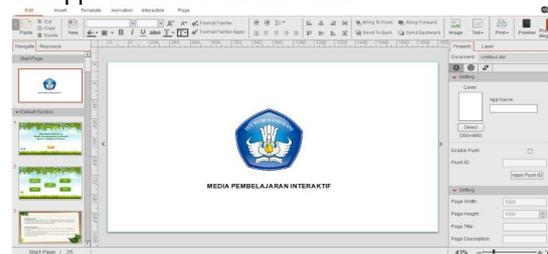


Figure 3. Loading Page.

- Start View

In the main view there is the title of the learning media and the button to enter to continue in the next section.



Figure 4. Start Menu Display.

- Main Menu Display
this view there is a Main Menu provided



Figure 5. Main Menu Display.

- Display of Learning Objectives
In this view explains the learning objectives

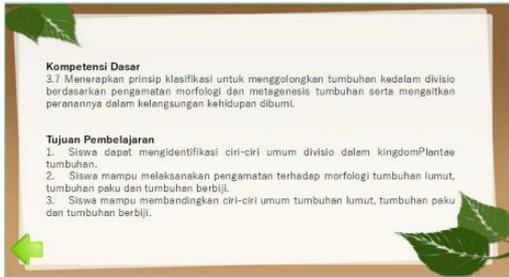


Figure 6. Learning Objectives.

3.2 Discussions

Student assessment responses as users (users) to this interactive learning media are derived from trial data conducted limited testing of 35 students. Questionnaire student assessment of learning media development product trials based on several aspects such as media appearance, material content and usefulness.

- a. Display of Learning Media
After doing the analysis, the following is the result of the assessment of interactive learning media which was tested on 35 students based on the perspective of media display.

Table 2. Student Assessment on Learning Media Display Perspective.

Category	Number of Respondents	Percentage
Very Interesting	32	91.43 %
Interesting	3	8.57 %
Quite Interesting	0	0 %
Less Attractive	0	0 %
Total	35	100 %

- b. Material Content Aspects
After doing the analysis, the following is the result of the assessment of interactive learning media that was tested on 35 students based on the perspective of the content of the material.

Table 3. Student Assessment Results on Material Content Perspective.

Category	Number of Respondents	Percentage
Very Worth it	29	82.86 %
Worthy	6	17.14 %
Decent Enough	0	0 %
Less Eligible	0	0 %
Total	35	100 %

- c. Benefits Aspect
After doing the analysis, the following is the result of the assessment of interactive learning media which was tested on 35 students based on the perspective of expediency.

Table 4. Results of Student Assessment on the Perspective of Usefulness.

Category	Number of Respondents	Percentage
Very Helpful	30	85.71 %
Beneficial	5	14.29 %
Helpful Enough	0 %	0 %
Less Helpful	0 %	0 %
Total	35	100 %

4. CONCLUSION

The process of developing interactive multimedia based on Android using SAC produces a product in the form of Android-based learning media which contains

the main competencies of Biology subjects, practice questions using the weights of questions that are in accordance with the material embedded in the media, objects used are in the form of text, images, animations that are support the presentation of the material. The use of color, an attractive appearance and audio. The results of student assessment based on the display aspect get a percentage score of 91.43% or very interesting, student assessment based on the content aspect gets a percentage score of 82.86% or very worth it, while the usability aspect gets a percentage score of 85.71% or very helpful.

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