

Conference Paper

The Development of a Virtual Module Based on the Infographic Dynamics of Art Materials

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Abstract

The COVID-19 pandemic in Indonesia has had a very significant impact on learning activities in schools, including learning at the UM Lab SMP. Teachers who are accustomed to using technology can make their own or take teaching materials from various sources on the internet. There are not many teaching materials that can be found on the internet that discuss specifically about junior high school art material. Teachers still have to reduce text material into easily digestible material for students to learn. This research used Sugiyono's development method which has 10 research steps. The virtual module developed in this study is in the form of an application that can be operated on a smartphone or laptop, and contains junior high school art material in a systematic and attractive learning package that makes the learning experience easier for teachers and students. In using the module, the teacher becomes the facilitator, and students can understand the steps that must be taken in each basic competency, without even asking the teacher. The module directs students to follow the learning flow like playing a game. The interactive digital module was tested on UM Lab SMP students and showed good results. It got a score of 90.6% for the material expert validation test, 92.3% for the media expert validation test, 85% for the product trial with a small group, and 87.5% for the trial with a large group. This module can minimize the role of the teacher, enable students to learn independently, and can increase student activity with media in learning and learning activities.

Keywords: Virtual module, Dynamix module, art module

1. Introduction

The Covid 19 outbreak in Indonesia has revolutionized all aspects of life, including the teaching and learning process. All activities are no longer semi online but full online. Educators are required to have the ability to utilize technology in times like this, not only coordinating learning activities but also providing digital-based teaching materials. This obligation is not automatically implemented because of the limitations of the teacher in making digital-based teaching materials in a short time. Therefore, this study aims to

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provide a solution by providing a virtual module on junior high school art material that can not only be used by UM lab SMP, but can be used by all junior high school teachers and students throughout Indonesia.

The virtual module will be created with the concept of dynamic infographics. Dynamic infographics are media in the form of a display interface that has navigation buttons directing the pages needed by students. For example, the initial display is in the form of a general description of the painting material, on the start page students can select the next navigation menu according to what they want and what has been understood. For example, the next navigation page is about procedures, tutorials, questions, and evaluation of learning outcomes. Students and teachers can monitor the development and understanding of students regarding the material in real time. This dynamic infographic-based virtual module is made according to the characteristics of junior high school students who are already proficient in operating smartphones. Learning activities are designed like playing a game that must go through several stages to get to the finish line with results that are as planned. All students are designed to be able to pass these stages well, if there are several stages that are less than optimal, students must repeat many times until they meet the standards to be able to continue in the next phase. So that it can be monitored, students who are able to succeed at the final stage are students who have understood the material presented at each stage.

[1] explained that the average data of generation z activities are: (1) using technology 10 hours 19 minutes per day. (2) 1 million applications have been created and used. (3) 1 billion active users on the internet per day, (4) searching data on the internet, more than 5.1 billion searches per day. (5) generation z is a type of visual learning, trying and seeing the results of the process, wanting the teacher to be a facilitator, learning begins with “how”, and it is very easy to get information.

[2] argues that generation z prefers learning through experiential (learning by doing), clear goals and fast feedback: wants to know in advance the goals and benefits of learning before starting learning, tutors like a friend: prefer teachers who can position as friends or even teachers who are colleagues, learn multidisciplinary knowledge, utilize technology and fast information in learning, co-working space: learning in collaboration to get direct financial benefits. The industrial revolution 4.0 has a significant effect in the world of education. The presence of technology applications is a must according to the demands of the times. Critical thinking must be familiarized with every learning material through direct learning from cases and experiences of real teachers and friends and having experience in solving problems.

2. Method

This research is a Research and Development and uses Sugiyono's development method which has 10 research steps. Research and Development method according to Sugiyono [3] the development method consists of 10 steps, namely: 1) potential and problems; 2) data collection; 3) product design; 4) design validation; 5) product revision; 6) product testing; 7) product revision; 8) trial use; 9) product revision; 10) mass production. Observations and interviews were carried out on the Fine Arts teachers of the UM Lab Junior High School who took the Cultural Arts subject. Observations and interviews were carried out while carrying out learning activities and learning to draw. The results of the observations and interviews carried out were:

a. The activity of the Cultural Arts Subject on the topic of drawing material at the UM Lab Middle School was attended by 25 students

b. The learning media used is in the form of sheets of paper in the form of examples of images that have been reproduced by the teacher. This makes students in the learning process pay attention to the teacher's explanation of how to color and then imitate them. The use of very simple learning media is considered less easy for teachers in learning and learning activities, because the teacher has to provide more examples of how to color gradations one by one to students who have difficulty.

c. There are no student guides and clear references in carrying out learning activities so that the main source of learning information is based on explanations from the teacher. The teacher only has a sample book of pictures of the results of coloring gradations.

d. Many UM Lab SMP students own or can operate smartphones, but their use is limited to playing games and social media. Data regarding the number of students who have smartphones is 15 out of 25 students.

The information that must be obtained to create an interactive digital module will be used as design material. Data collection conducted by researchers in the form of observations, unstructured interviews and documentation. The data obtained were in the form of lesson plans for coloring learning materials. Data collection also obtained a solution to the problems obtained, namely in the form of interactive digital learning media modules that facilitate student learning. The results of data collection make it easier for researchers to develop learning media to be designed.

Before choosing the interactive digital module, the teacher has tried only printed learning media with direct explanation, but the learning outcomes like that are not satisfactory. After that the teacher tries to learn by providing a printed module in the

form of coloring steps which also has deficiencies in various aspects. Based on this, it can be seen the advantages and disadvantages of each learning media used, so that it can be seen if the right solution is a reference for the right learning media, namely interactive digital modules.

Testing the interactive digital module for coloring learning media for students at SMP Lab UM. This trial was conducted to determine the feasibility of the product being developed. Initial product trials were carried out on 5 students. Early product trial grids adapted from [4] and [5] which is adapted to the module being developed.

3. Discussion

This section will explain the results of the interactive digital module product development that has been made, based on the results of the validation and trials that have been carried out and then the results of the revision of the interactive digital module are obtained. The deployment of the interactive digital module application is made easy by opening a link that has been distributed via Whatsapp, the link will lead to Google Drive where there is an interactive digital module application and a pdf that can be downloaded. The application installation process is also made easy like installing other applications on each smartphone, namely by opening the downloaded module application then pressing the install button and waiting for it to finish. The interactive digital module that has been installed can be used without the need for an internet connection.

Using this interactive digital module is quite easy because of its simple appearance. Student worksheets are also made following an interactive digital module, there are instructions for working on each worksheet that will be worked on.

The illustration display on the front cover of the interactive digital module and student worksheets is designed the same, this is because the mindset of students at the junior high school level is still simple and at the development stage, according to Andesta [6] Children's cognitive is still at the stage of remembering so that the selection of the same cover illustration will make it easier for students to find. Selection of simple and bright colors to emphasize the main illustration and headline. The color chosen also gives the students a calm and comfortable impression. Writing the title as information that the material being taught is coloring the gradations using oil pastels. Writing additional information as explanatory information.

The illustration that is made by displaying the characters of two children, namely a boy and a girl, aims to attract the attention of students, and indirectly the module is

used by the age of the children. The illustrations that are made as attractive as possible will indirectly increase students' interest in exploring the contents of the interactive digital module. Characteristics of junior high school students at this stage prefer to play and explore interesting things[7]. The illustration shown has the concept of coloring activities, so that each sheet will display the same theme.



Figure 1: interactive digital module subsections

Each section in the interactive digital illustration module is made with the same concept, namely coloring activities but with different illustrations in each section. The different illustrations in each section aim to provide new nuances in learning, so that students don't get bored easily. This part of the illustration is made simpler, there is a title made with a large size that serves as a guide. The button illustration is colored blue with a caption in it, the button is made to stand out or 3D by adding a dark light to the illustration. Furthermore, the presentation of the material that focuses on the explanation contains a lot of text as follows:



Figure 2: interactive digital module material display

This part of the illustration is made even simpler with a pink and blue appearance. The color placement is only on the side so that the center looks empty to place the text. This aims to clarify the content or message to be conveyed to students. This explanation is strengthened regarding the function of the module according to [8] namely clarifying the presentation of the message. The message presented must also be made simple

and as clear as possible in language that is easily understood by students. The font chosen for the material text is swis721BT which aims to make the text clear and students easy to read. Writing the header is made larger than the material text.

The display of the training material contains a little text about the instructions for working in general. The writing of more detailed work instructions can be seen on the worksheet. There is a drawing of a worksheet that students will work on later. Exercise material must exist in the learning module according to the rules of the module according to [8]. Worksheets can make it easier for students to practice their skills in understanding the material being studied. The exercises that are made must be in accordance with the material being studied, there is only 1 exercise in each material.

Workable student worksheets are made to resemble the same color concepts and the same illustrations. As well as module covers and worksheets previously described. Worksheets contain exercises and evaluations that students can do by copying videos or according to work instructions. The following are instructions for using the worksheet:

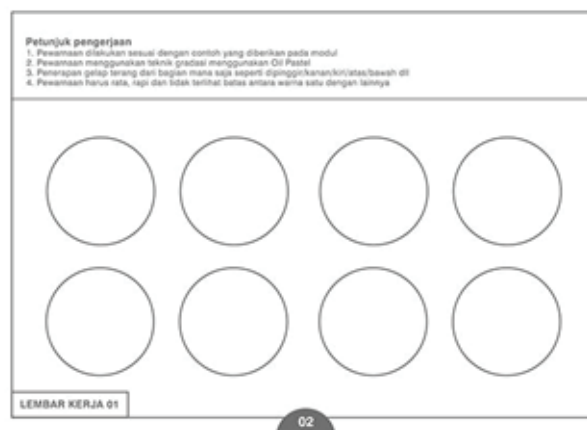


Figure 3: worksheet workout view

The worksheet view is made in black and white to make it easier for teachers or students if they want to independently reproduce worksheets. Worksheets in the form of paper as a medium for students' coloring skills and creativity. Instructions for working are on each worksheet in accordance with the material to be studied. instructions for explaining and instructing students and teachers. Information in the form of writing at the bottom of "Worksheet 02" so that the worksheet works in accordance with the interactive digital module material.

4. Result

Research on the development of an interactive digital module for coloring learning media aims to determine the feasibility of an interactive digital module conducted on students of SMP Lab UM. Drawing extracurricular activities as a development of students' interests and talents requires effective learning media, besides that the lack of references that students can use in learning is still a problem. Solutions that are considered appropriate as problem solving are learning media in the form of interactive digital modules.

Learning media that students can use to continue to develop their interests and talents in coloring skills are media in the form of interactive digital modules. The interactive digital module of coloring material for gradation techniques for junior high school students emphasizes the skills to color gradations using oil pastels on paper media. Development of learning media in accordance with Sugiyono's research and development method which consists of 10 steps. The development steps are: potentials and problems, collecting data as a reference, designing the product, then validating the product by material experts and media experts to determine the feasibility of the module being tested. The next step was product trials which were carried out 2 times first in small groups (5 students), the shortcomings of the trial results were then revised, then the trial use of large groups (12 students) was then revised to perfect and the last step was mass production.

The results of the interactive digital modules made using technology in the form of smartphones are familiar to students. Students can easily download the application on the link or link sent via Whatsapp that has been provided, besides that worksheets for working on modules have also been provided and can be printed independently by students. The interactive digital module entitled Let's Coloring has explanations or steps in the form of a playable video. The video of the learning material has a written description that can be easily read by students. There are exercises and evaluations that can also make it easier for students to improve their skills.

The interactive digital module that was tested on UM Lab SMP students showed good results. Based on the results of the validation test, it got a score of 90.6% for the material expert validation test, 92.3% for the media expert validation results, 85% for the product trial results in the small group and 87.5% for the results of the trial use in the large group. The interactive digital module that is made can minimize the role of the teacher, besides learning independently, and can increase student activity with media in learning and learning activities. Interactive digital modules that are made in the form

of stand-alone applications without the help of other applications. So that the download and installation is easy for users to do independently.

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