

Implementation of Discrete Mathematics to Improve The Understanding of The Concept of Space Building Based On Desktop Java

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ABSTRACT

The introduction of mathematical space building media is often applied in learning module media such as books. In this case it is less effective because students are less able to absorb what is conveyed by the teacher because the media is still a two-dimensional image. With the existence of a desktop java-based application, objects in the introduction of building space can be made into 3-dimensional images. This means that it is possible that this technology can be used as a tool for a more innovative method of introducing the Mathematical Space Formulas, such as by highlighting a camera connected to a cellphone the user can see in three dimensions how the shape of the real space.

Keyword : Building Media, Technology, Building Space, Mobile Phone



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1. INTRODUCTION

A shape is a type of regular space object that has ribs, sides and corner points. The shapes of spatial shapes that are already known at school are cubes, blocks, tubes, prisms, cones, pyramids, spheres, etc. Developments in the field of computers today there is an application called Bangunar and desktop-based java applications. Basically, Bangunar has the advantage of being able to provide experience and deep understanding for the subject of introduction. This application can also input what space building we will use. This technology can be used as a tool for a more innovative method of introducing Mathematical Space Formulas, namely by highlighting the camera connected to the cellphone the user can see three-dimensionally how the shape of the space is in real 3D and we can input the shape of the space.

The number of each angle and the application system will provide the formula. In this case, it can be used as a learning media for students at school and at home. Through the media of building space using Bangunar application and desktop java-based applications, students are expected to be eager to learn and easily understand what is conveyed by the teacher when in the learning process of pursuing.

The introduction of mathematical space building media is often applied in learning module media such as books. In this case it is less effective because students are less able to absorb what is conveyed by the teacher because the media is still a two-dimensional image. With the existence of a desktop java-based application, objects in the introduction of building space can be made into 3-dimensional images. This means that it is possible that this technology can be used as a tool for a more innovative method of introducing the Mathematical Space Formulas, such as by highlighting a camera connected to a cellphone the user can see in three dimensions how the shape of the real space.

2. RESEARCH METHOD/MATERIAL AND METHOD/LETERATURE REVIEW

Based on the focus of the research which intends to describe the management of mathematics learning, especially building space with the use of technology such as javadesktop and wakear applications, the objectives of this study are to:

1. Describ the management of mathematics learning with the use of technology in an effort to improve quality learning mathematic s, especially to improve mathematics learning methods which has been done traditionally to students in Indonesia
2. Knowing the utilization of technology in the management of mathematics learning can improve the understanding of flat and spatial shapes in students. This is due to the increased interest (attention), motivation, and role (activity) of students in learning mathematics in students in Indonesia.

3. RESULTS AND DISCUSSION

A. Problems

Because technology is developing and the teaching methods of educators are too traditional, a new breakthrough must be made so that students in Indonesia are not bored and bored with the lessons at school, especially Mathematics.

Through the use of increasingly sophisticated technology including computers and the internet, there will be various changes in students' interests and talents and motivation to learn.

Because the results of observations in the field and the facts that exist show the lack of enthusiasm of students in math lessons. This is mainly due to the lack of variation in teaching methods, student boredom with the learning concept of practice questions, and others. Therefore, in this application it is interesting to study and research as well as discuss the management of technology-based mathematics learning to improve students' understanding of the concept of learning mathematics, especially building space.

B. Research Objectives

Based on the focus of the research which intends to describe the management of mathematics learning, especially building space with the use of technology such as javadesktop and wakear applications, the objectives of this study are to:

- A. Describe the management of mathematics learning with the use of technology in an effort to improve the quality of mathematics learning, especially to improve mathematics learning methods that have been carried out traditionally for students in Indonesia.
- B. Knowing the utilization of technology in the management of mathematics learning can improve the understanding of flat and spatial shapes in students. This is due to the increased interest (attention), motivation, and role (activity) of students in learning mathematics in students in Indonesia.

C. Implementation

The application may encounter errors when entering data, indisplying 3D images and problems when the image is about to be displayed, namely because it is not clear that the image of the building space when it at wants to be videoed. With using camera error when insertion data. There are error notifications and warnings that the input is incorrect. This is because the function entered not in accordance with the terms of the application. The letters representing each term cannot be repeated and must be consecutive. The formula and the result displayed do not match.

D. System Presentation

This application can calculate the formula for building space and flat buildings, you just have to choose the space cube, beam, triangle etc. then enter the value and select calculate then the final result will be displayed immediately along with the formula.

Here's an example of an application about building spaces :



Figure 1. Dashboard

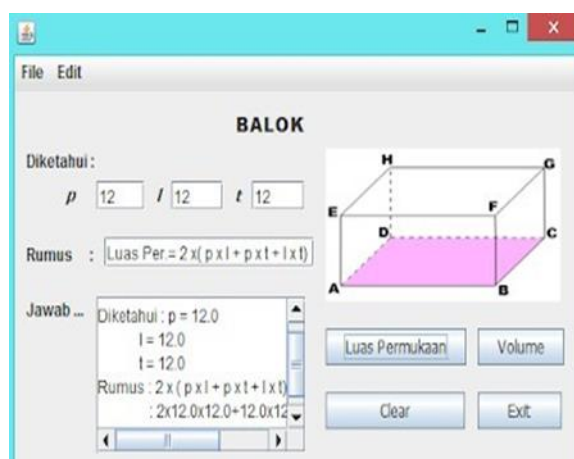


Figure 2. Display Calculating Flat Figures



Figure 3. Flat Build View

Here's an example of a 3D application :

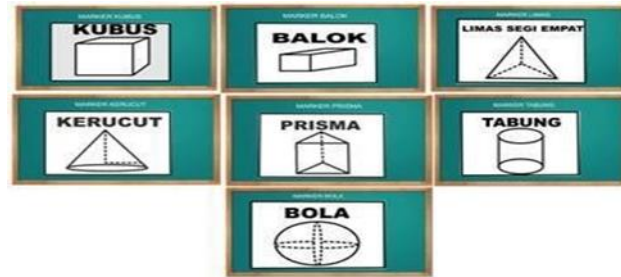


Figure 4. Flat Build View 3D Application



Figure 5. Flat Build View 3D Application



Figure 6. Flat Build View 3D Application

4. CONCLUSION

- Marker detection runs well and can bring up seven objects in one Marker.
- Utilization of The utilization of augmented reality technology in this wake-up application runs well and in accordance with the previous design, which combines previous design, which combines between 3D objects and the real environment.
- Interaction using the buttons provided in this application makes it easier for users to run the application
- In detecting Marker patterns, it is necessary to pay attention to the details and quality of the Marker captured by the smartphone camera.

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