The Effect of Game-Based Learning on Understanding Binning in Grade 1 Students

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Abstract

This study reviews how the Effect of Game-Based Learning on Understanding Binning in Grade 1 Elementary School Students. This study aims to describe the stages of planning, implementation, observation and reflection in the learning process of binning in grade 1 elementary school students. This type of research is Classroom Action research (PTK) which is carried out to determine learning outcomes, student creativity, which implements game-based learning on binning materials. **Keywords:** Game-Based Learning, Binning



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INTRODUCTION

Geometry has the literal meaning of measuring the earth. Geometry is a branch of mathematics that deals with points, lines, planes and space. Space is a collection of points that can form geometric shapes. Lines are subsets of space which are points with special properties. The plane is the set of points that are in a flat plane. Teaching geometry can indeed be done from an early age, but it must be done in a more creative and realistic way. Geometry may have many applications in mathematics and real life, including many elements of problem solving. The purpose of learning mathematics, especially geometry for early childhood, is to recognize objects that are geometric in shape, point to them, name them and collect them. The first level of learning geometry is topology. They don't know about distances, straightness and so on, so they start studying geometry not with straight lines, but with curves, for example closed curves, open curves in arc planes, simple curves and so on.

Mathematics is an important subject. Mathematics cannot be separated from everyday life. One of the mathematical materials that cannot be separated from everyday life is geometry. A broad field of school mathematics is geometry. Geometry is a branch of mathematics that deals with the concepts of form and space. Freudenthal said that geometry is the space in which the child lives, lives and moves. In this space, children must learn to feel, explore, fight for victory, plan and organize life (live), breathe and do better (move better in it). There are several reasons why children should be taught geometry. First, geometry is the only branch of mathematics that can relate mathematics to real-world physical forms. Second, geometry is the only thing that allows the visualization of mathematical ideas, and third, geometry can provide examples that are not unique to mathematical systems.

The development and growth of early childhood must be properly encouraged so that they can function optimally. This phase is often referred to as the golden period of growth and development. One of the developments that must be encouraged is cognitive development through the introduction of objects into the child's environment. In the period of growth and development, children cannot be separated from the objects around them while playing. Since childhood, they are familiar with the objects around them in various shapes and forms, including geometric shapes such as coins, cabinets, tables, books, balls or other everyday objects to play with. The introduction of geometric shapes in early childhood can be started with the construction of geometric concepts, namely getting to know the properties of geometric shapes.

The rapid development of technology has affected the way children play. During this period of growth and development, children spend most of their time playing. Children usually have a very high learning ability and curiosity. They like games that pay attention to what is being played. The use of games in learning improves children's ability to learn mathematics through games compared to traditional classroom learning methods. This research tries to provide alternative solutions in the form of game-based learning to facilitate children's learning. Kids can have fun and learn at the same time. The purpose of this study is to provide learning media that starts from the stage of knowing, studying and applying geometric shapes.

RESEARCH METHODS

This research is a Classroom Action Research (CAR) which was carried out to find out learning outcomes, student creativity, which implements game-based learning on the material of tiling. This study uses the Kemmis and Mac Tanggart models (Kemmis, 1992) with four stages: planning, action, observation, and reflection. This research was conducted at MI Al-Islam Majalaya. The subjects of this study were 27 students in class IA consisting of 19 male students and 8 female students. The research consists of four stages, namely: 1) planning; 2) implementation of actions; 3) observation or observations; 4) reflection. Data collection techniques in this study are: a) Tests, used to obtain test data on student learning outcomes. b) Observation, used to obtain data regarding student creativity in the learning process that implements game-based learning on the material of the twist.

RESEARCH RESULTS AND DISCUSSION

This research consists of four stages, namely: 1) planning; 2) implementation of actions; 3) observation or observations; 4) reflection. The following is an explanation of these stages:

 Planning. This planning stage contains several steps: a) identify the learning objectives or competencies to be achieved, b) design a game-based learning plan in the form of lesson plans, c) prepare learning materials and media and resources needed in tile-based learning, d) determine the sequence game-based learning process, e) making research instruments test questions, student creativity observation sheets used during learning activities; f) Discussions with colleagues for the implementation of observations during the research process in class.



2. Action Implementation. Implementation This stage is the implementation stage of gamebased learning. The learning process begins with the delivery of basic competencies and indicators as well as learning objectives and Pengubinan material. The teacher conveys how to do worksheets. Furthermore, the teacher asks students to complete the task that has been ordered. And continue working on evaluation questions.



3. Observation or Observation. At this stage the teacher observes and records the interaction responses between students during game-based learning. This stage is carried out for creativity and students' understanding of the tiling material.



4. Reflection. Based on the results of observations of game-based learning with this Pengubian material, it can increase students' creativity and understanding. This can be seen from the enthusiasm of the students in the game activities so that their understanding of the material is easy to understand. besides that, the students' understanding was quite good, this can be seen from the results of the evaluation tests working on the tiling questions, 80% of students answered the questions given correctly.

Game-based learning is a learning approach that uses game elements and interactivity to increase student engagement, motivation, and understanding. In game-based learning, concepts and learning materials are conveyed through various types of games or activities that are interesting to students. The disadvantages of using game-based learning that we have done are; 1) Time Required, The game process and the interactions involved can take longer, so that

it can reduce the time available for other learning materials. 2) Ineffective Classroom Management: If not managed properly, game-based learning can result in a loss of control over the class. High levels of student activity and intense interactions can cause students to lose focus and interfere with learning concentration. 3) Challenges in Measurement and Evaluation: Game-based learning can make it difficult to objectively measure and evaluate student understanding. More traditional methods of assessment, such as written tests, may not be appropriate for this type of learning. Therefore, evaluation methods are needed that are more creative and in accordance with the context of the game.

CONCLUSION

Game-based learning can increase student engagement, motivation, and understanding of learning materials. However, there are still some drawbacks in using game-based learning such as the time required, ineffective classroom management, and challenges in measurement and evaluation. Suggestion: to increase the effectiveness of using game-based learning, careful planning, good classroom management, and evaluation methods that are creative and appropriate to the context of the game are needed. In addition, teachers also need to continue to develop skills in managing the class and choosing the right games so that students are more involved and understand the material well.

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