ABSTRAK

PENGEMBANGAN PROTOTIPE PERANGKAT PEMBELAJARAN GEOMETRI MATERI BANGUN DATAR BERDASARKAN TEORI *VAN HIELE* UNTUK SISWA KELAS V SEKOLAH DASAR

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2016

Penelitian berawal dari potensi dan masalah terkait kesulitan siswa kelas VSD N Caturtunggal 6 memahami sifat-sifat bangun datar. Potensi yang ada adalah konsep geometri sifat-sifat bangun datar harus dikuasai siswa kelas V karena dapat membantu siswa mengembangkan kemampuan matematis-logis dan ruang visual. Masalah yang muncul pada siswa adalah 89% belum memahami sifat-sifat layang-layang, 85% belum memahami sifat-sifat persegi, dan 82% belum memahami sifat-sifat belah ketupat. Selain itu guru kurang bervariasi dalam menggunakan model pembelajaran. Maka, peneliti mengembangkan prototipe dengan tujuan menjelaskan proses pengembangan dan mendeskripsikan kualitas prototipe.

Penelitian ini menggunakan penelitian pengembangan (R&D) dengan menerapkan 6 langkah menurut Sugiyono, yaitu (1) potensi dan masalah, (2) pengumpulan data, (3) desain produk, (4) validasi desain, (5) revisi desain, dan (6) ujicoba produk. Produk yang dihasilkan berupa protipe perangkat pembelajaran berdasarkan lima fase *van Hiele* yaitu (1) fase informasi, (2) fase orientasi langsung, (3) fase penjelasan, (4) fase orientasi bebas, dan (5) fase integrasi. Prototipe telah divalidasi dengan hasil skor rata-rata 3,62 maka layak diujicobakan.

Ujicoba terbatas dilakukan di SD N Caturtunggal 6 pada tanggal 16 Desember 2015 dengan menerapkan perangkat pembelajaran sifat-sifat bangun datar persegi berdasarkan lima fase *van Hiele*. Peneliti mendapatkan data jika siswa memahami sifat-sifat bangun datar persegi. Data tersebut ditunjukkan dari fase integrasi yaitu 63% siswa mendapat nilai 100, 21% siswa mendapat nilai 96, 11% siswa mendapat nilai 92 dan 5% siswa mendapat nilai 88.

Kata kunci: pengembangan, perangkat pembelajaran, bangun datar, *van Hiele*.

ABSTRACT

TWO-DIMENSIONAL SHAPE GEOMETRIC-LEARNING-MEDIA-PROTOTYPE DEVELOPMENT BASED ON VAN HIELE THEORY FOR STUDENTS IN GRADES V ELEMENTARY SCHOOL

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The study was started from the potential and the problems related to students of class V SD N Caturtunggal 6 difficulties in understanding the properties of two-dimensional shape. The potential was the concept of two-dimensional characteristic of geometric properties that should be understood by fifth grader students because it could help students develop logical-mathematical ability and visual-space. The problems were 89% of the students did not understand the nature of the kite, 85% of the students did not understand the nature of the square, and 82% of students did not understand the properties of a rhombus. In addition, teachers had a little variation in using learning model. Thus, researchers had developed a prototype with the aim to explain and describe the process of developing a prototype quality.

This study was research and development (R&D) by applying the six steps according Sugiyono, namely (1) the potential and problem, (2) data collection, (3) product design, (4) design validation, (5) design revisions, and (6) products testing. The product was in the form of prototype devices based on five van Hiele's learning phases: (1) information phase, (2) direct orientation phase, (3) explanation phase, (4) free orientation phase, and (5) the integration phase. The prototype had been validated with the average score of 3,62 then it was worth to be tested.

Limited test was conducted in SD N Caturtunggal 6 on December 16, 2015 by applying the learning device properties of square by five phases of van Hiele. Researchers got the data that students could understand the properties of a square. The data was shown that on the integration phase, 63% of students got 100, 21% of students got 96, 11% of students got 92 and 5% of students got 88.

Keywords: development, learning media, two-dimentional shape, van Hiele.