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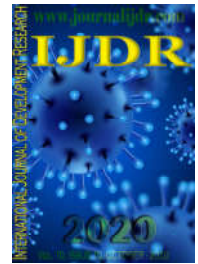
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RESEARCH ARTICLE

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IMPROVEMENT FARCE BASE SOLVE OF GEOMETRICAL PROBLEM

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ABSTRACT

In this paper, we introduce the improvement of instructional media for students of classes VIII farces on rectangular material. This farce instructional media 4D method that is designed to define, design, improvement and dissemination, In the first phase done to establish and define the terms of improvement. The second phase of the farce instructional media designed to obtain a prototype or product design and improvement phase is done with the media to determine the feasibility prototype and prototype revision in order to obtain a hypothetical media. The results of the assessment sheet obtained that the feasibility media validator obtained an average score of 1.95 with very good. The process of improving a farce on the subject of geometry only.

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INTRODUCTION

The student of lower quality achievement can be due to the ability of learners in solving mathematical problems is adequate, it can be shown that steps to understand, plan and looking back the answer sometimes is not done. In addition, most of the teachers are difficult to teach students about ways to solve a problem, so they hold that the final result was the only goal in problem solving. Whereas in mathematical problem solving, the end result is not only a destination but a process to solve the problem is important in solving problems. Due to the process of solving the problem, educators can determine whether student have understood the mathematical concept or not. In addition to problem solving, math becomes lost meaning, because a concept or principle be meaningful if it can be applied in problem solving. In addition to the students, teachers also have an important role in learning, especially to improve the quality of learning. The math teacher had a tendency to only focus on textbooks and are accustomed to using the lesson by lessons by presenting the learning materials, giving examples of problem and ask the students do practice questions contained in the textbooks they use in teaching and then discuss it with student Learning devices are tools or equipment to carry out the process that will enable educators and learners perform the learning activities. The preparation of learning tools that are part and parcel of the learning plans designed in the form of a

syllabus, lesson plans preparation of learning media and learning resources, assessment tools and learning scenarios. One of the learning tools that are used during the learning process includes instructional media. Educators need to think about ways of presenting and mathematics learning atmosphere that allows students easily understand and get excited to learn math. One effort to do is familiarize mathematics to real life. In other words, the teachers need to associate learning math concepts with experience in everyday life. The results showed that the instructional media used in mathematics learning is very effective. The problem is the medium used was based on information technology are like flash or PowerPoint. The weakness of information technology based media such as a learning tool in the class room to support the availability of devices such as computers, LCD and projector. Based on this, the print instructional media would still be for the students who are in school with the support of information technology is still minimal. One example of the print media that can be used in mathematics farce. Farce are learning media teaching materials pictorials form.

METHODOLOGY

Research improvement is research used to develop or produce products or enhance existing products. The development of the investigational products is a farce teaching material on the

subject of geometry for junior high school student of class VIII. Model improvement of teaching materials geometry refers to the - D models improved by Semmel Semmel, which define, design, improvement and dissemination. The advantages of the model -D include: more appropriate to use as a basis for improving learning device is not to develop a learning system, the description seems complete and systematic in its improvement involves the assessment of experts, so that prior to being field tested learning device has been revised based assessment, advice and input of experts. Define that, carried out to establish and the terms of improvement, generally, at this defining stage of improvement needs analysis conducted activities, the terms of the improvement of products according to user needs as well as research and improvement models suitable for improving products. The analysis can be done through the study of literature. In determining the terms of the learning device starts a) the analysis of the curriculum b) analysis of the characteristics of learners. c) analysis of the material d) formulate objectives.

Design stage, at this stage to make teaching materials in accordance with the contents of the analysis results framework curriculum and materials, the design of products proceed to the next stage, then the hypothetical teaching materials need to be validated. Validation of product design by a team of expert judgment as a professor or teacher of mathematic through Focus Group Design (FGD). Based on the results of the focus group, there is the possibility or product design needs to be improved in accordance with feedback at the time of the FGD. Improvement stage, the farce instructional materials are hypothetical and math learning problem- solving test instruments and good fit. Farce instructional materials are hypothetical mathematical learning is used as one of the requirements to conduct limited testing to be conducted in the second year. The problem solving test instruments that have been tested are also used to obtain data on math problem solving skills and learning achievement will be used to measure the effectiveness of mathematics teaching materials .Where the measurement of the effectiveness of mathematics teaching materials farces will be made in the second year and third year as an integral continuation of the study. This study only reached the stage of improvement, while the deployment phase cannot be done This is because the distribution and adoption of instructional materials must fit their farces do by the second curriculum.

RESULTS

This study produced farces on the subject of mathematics learning in terms five for junior high school students of class VIII. The results of material improvement aim to approach rectangular material to students so that the students, so that students become easier to learn the material in terms of five when compared to using books in materials for use by teachers. Besides cognitive improvement, piaget, grouping students of class VIII are informal cognitive improvement for their age 13 years. But they still have the mindset of concrete and semi formal. So it takes a medium of learning and teaching material that are able to facilitate the students cognitive improvement differences. The validity of mathematics learning farces does with the validity of the content. The validity of the contents indicates that the contents of teaching materials were not improved at random, but should be justified scientifically and correctly in term of science. The

indicators of teaching materials farce validation refers to i) aspect of farce structure ii) a material aspect iii) aspects of the organization, presentation and writing and iv) aspect of language and legibility. Analysis of data obtained from a descriptive form validator assessing the feasibility of teaching materials with a value between 1 to 5 in each indicator, suggestions and commends. Data from the feasibility assessment obtained teaching materials categorized as follows.

Table 1. Average classification farce mathematics learning validation

Interval	classification
$6,00 \leq \bar{x} \leq 475$	Very good
$392 < \bar{x} \leq 475$	Good
$267 < \bar{x} \leq 392$	Fair
$225 < \bar{x} \leq 267$	Less
$2,00 < \bar{x} \leq 225$	Very less

While farces mathematics rated valid if the average score earned at least 3,92 for each aspect of farce assessment of learning. Based on the validation of validator and once calculated based on criteria validation then obtained results.

Table 2. Results validation mathematics learning farces

No	indicator	mean	conclusion
1	Farce Structure	5,02	Very good
2	Content	5,02	Very good
3	Organization, Presentation and Writing	4,93	Very good
4	Language and Readability	5,06	Very good

From the results of the validation test farces mathematics table 2, it can be concluded that the average for appraisal aspect not obtained a minimum of 4,93. This means that farces can be expressed in mathematical learning valid in excellent category.

DISCUSSION

Phase defining the first stage in the improvement of teaching materials farces. This stage is the establish and define the terms of improvement. In general, the definition phase is implemental through the improvement of needs analysis, requirement improvement of products that comply with the needs of users as well as research and improvement models suitable for developing products. In determining and establishing the terms of learning device begins with curriculum analysis formulate objectives. In the seventh – grade geometry material analysis, researchers chose a rectangular material that will be improved as a teaching material in the form of farce. The rectangular material consists of i) a square ii) rectangular iii) a parallelogram iv) rhombus v) the trapezium and vi) the kite. The next step we use the existing basic components and indicator of achievement of learning outcomes that are based on core competencies. At the design stage researchers designed comic teaching materials in order to obtain a product design. At this stage made teaching materials in accordance with the contents of the analysis results framework curriculum, material analysis and formulate objectives on the material of the rectangle

The activities include the improvement i) conduct a feasibility assessment comic product design teaching material and ii) revised product design teaching materials farce based on input from the validator to obtain teaching materials farces are

hypothetical. Although the terms of eligibility in the excellent category, the validator to provide input and comments to revise teaching materials farces. The input of the validator include i) on a comic journey of three friends, the definition of a kite needs to be considered because it raises a double meaning ii) there is a calculation error and sample on the sample questions either in comics iii) farce journey of three friends first beauty to be made in color.

Conclusion

The process of improving a farce on the subject of geometry only through 3 phases defined by analyzing the curriculum and to formulate basic competencies and indicators of achievement of learning outcomes, the design phase is done by creating a farce prototype based on trouble shooting with a black and white design improve. Based on the farce quality criteria covering mathematics validity, practicality and effectiveness can be concluded that the farce mathematics learning is feasible and can be used to carry out the teaching and learning activities.

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