

Development of Mobile Learning Teaching Materials on Opportunities to Improve Students' Mathematical Communication Skills in Vocational High Schools

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ABSTRAK

Another fact that was discovered was the low average daily mathematics test scores in one of the State Vocational Schools. This fact influences mathematics learning and the greatest difficulty is carrying out mathematical communication and problem solving on the questions given. The following is the average value of daily tests on Opportunity material for the last three years at SMKN. To respond to the problem of students' low mathematical communication skills, the enormous demand for progress in science and technology, it is very necessary to make changes to the learning process, especially the selection of appropriate mathematics teaching materials. One example is developing an Android-based teaching material or mobile learning. The use of smartphones in learning allows students to carry out learning activities by accessing learning materials, directions and information anywhere and at any time without limited space and time. Mobile Learning also overcomes time constraints and is able to train students to learn independently from various sources. Students whose learning received procedural scaffolding with the help of smartphones were better than students who received conventional learning. This mobile learning teaching material is said to be effective based on student response questionnaire data and mathematical communication test results data obtained. The results of the student response questionnaire obtained a percentage of 95% with the criteria of being very effective for use in learning. Meanwhile, the percentage of learning completion results was 98% with a very high learning completion interval. The use of mobile learning teaching materials has an influence on students' mathematical communication skills. The average score of the experimental class students' mathematical communication ability test results in each school was higher than the control class. The average score for the experimental class at SMKN 1 Rejotangan was 85.00 while the average score for the control class was 76.15. The average score for the experimental class at SMKN 1 Boyolangu was 85.64, while the average score for the control class was 78.62. The average score for the experimental class at SMKN 2 Tulungagung was 82.79 while the average score for the control class was 75.99. After comparison and analysis, it was concluded that there was a difference in the test results of students' mathematical communication skills between the classes given the action and the control class.

INTRODUCTION

The development of science and technology in this era of globalization is very rapid, in the learning process there is a lot of technology that can be used as a learning aid both in school and outside school (Rahmania Abida and Anggun Badu Kusuma, 2019) This requires the world of education to participate in innovation in using it as a learning medium, with the hope of being able to produce a quality generation. In accordance with the formulation in the preamble to the 1945 Constitution and supported by Law Number 20 of 2003 concerning the National Education System as stated in Article 3, education in Indonesia has a goal that supports the creation of qualified human resources. Therefore, good education is able to produce good

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