

ABSTRACT

DIAR MAYLIA FRIDAYANTI. The Use of Problem Based Learning to Improve Students' Aptitude Mathematical Reasoning at Class VIII-4 of SMP Negeri 71 Jakarta. Mini Thesis. Jakarta: Study Program of Mathematics Education, Faculty of Mathematics and Science, State University of Jakarta, 2017.

The purpose of this research is to improve students' aptitude mathematical reasoning by using Problem Based Learning at class VIII-4 of SMP Negeri 71 Jakarta. The aptitude of mathematical reasoning to be achieved has six indicators, there are submitting supposition, doing mathematical manipulation, taking conclusions, composing evidence, giving reasons for the truth of solutions, taking conclusions from a statement, examining the validity of the argument, and finding patterns or properties of mathematical phenomena to make generalizations.

This classroom action research was held in collaborative and participative ways. The research was conducted in 3 cycles, the first cycle consisted of two meetings, the second cycle consisted of two meetings, and the third cycle consisted of two meetings. In every cycle, students were given a posttest in order to measure their aptitude of mathematical reasoning. The instruments that were used for collecting data in this research are observation instrument, test instrument, field notes, documentation tools, and interviews' manual. The data collection was done by observation, test, interview, and documentation. Descriptive data were analyzed qualitatively and quantitatively.

The results showed that the learning of mathematics through Problem Based Learning could improve students' aptitude of mathematical reasoning. It was shown by an increase in the final test score of the ability in mathematical reasoning provided during each cycle. The average of students' final test score of the ability in mathematical reasoning at class VIII-4 in the first cycle was 32.97, on the second cycle increased to 59.31, and the third cycle increased to 78.80. The final test score of the ability in mathematical reasoning of SP1 in the first cycle was 25, on the second cycle increased to 45.83 and the third cycle increased to 75. The final test score of SP2 in the first cycle was 29.17, on the second cycle increased to 45.83 and the third cycle increased to 83.33. The final test score of SP3 in the first cycle was 45.83, on the second cycle increased to 62.50 and the third cycle increased to 91.67. The final test score of SP4 in the first cycle was 45.83, on the second cycle increased to 58.33 and the third cycle increased to 83.33. The final test score of SP5 in the first cycle was 54.17, on the second cycle increased to 66.67 and the third cycle increased to 95.83. The final test score of SP6 in the first cycle was 58.33, on the second cycle increased to 83.33 and the third cycle increased to 100.

Keywords: Mathematical Reasoning, Problem Based Learning, Pythagoras Theorem