

The Analysis of Problem Solving Ability in Terms of Cognitive Style in Problem Based Learning Model with Diagnostic Assessment

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Abstract	The background of this research is the findings on learning difficulty by students in learning mathematics. The purposes of this research are (1) to describe the effectiveness of problem based learning model with diagnostic assessment in improving problem solving ability, (2) to describe follow-up activities from diagnostic assessment result toward the achievement of problem solving ability, and (3) to describe the pattern of mathematical problem solving ability of students in terms of cognitive style. This is a mixed method research type concurrent embedded. The population in this research is students grade XI MIPA (Mathematics and Natural Science) State Senior High School 1 Bojong. Data sampling of cognitive style uses GEFT test, while sampling of mathematical problem solving ability uses a test. The effectiveness was analysed based on mean test, completeness test, difference of means test, and difference of proportions test. The result of this research shows that a learning using problem based learning model with diagnostic assessment is effective. Diagnostic assessment result is followed-up by providing appropriate treatment where students find difficulties which include repeating learning, giving particular guidance, giving assignments, asking and answering questions, and optimizing peer tutors. Problem solving ability owned by field independent students is better than that of field dependent students. Field independent subjects are able to master four problem solving indicators according to NCTM, which are: developing new mathematical knowledge through problem solving; solving problems in mathematics and other fields; applying and adjusting various appropriate strategies to solve problems; observing and enhancing mathematical problem solving process, while field dependent subjects are less able to master the indicators that have been mentioned.
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