

ANALYSIS OF STUDENTS' LEARNING OBSTACLES ON THE SUBJECT OF PYTHAGOREAN THEOREM

A Descriptive Exploratory Research on Grade Nine of Junior High School Students in Bandung

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ABSTRACT

This research departed from many errors made by junior high school students in solving Pythagorean theorem problems. These errors can be seen from mistakes they have done in solving the given problem. Many methods and models of learning used by teachers from various sources, but the models are not necessarily an instruction that can be applied successfully in all types of students. It requires a depth analysis of learning obstacles in students to find the actual problems experienced by students. From the result of the analysis it will be designed an effective and efficient instructional material to eliminate the learning obstacles found. The learning obstacles will be classified into three learning obstacles, which are: ontogenetic obstacles, epistemological obstacles, and didactical obstacles. This research using a descriptive exploratory to describe the symptom and the phenomena occur within students in solving the problem. The research data obtained from a test of Pythagorean theorem problems and the result of interviews that then extracted to the instructional material design in the mathematics textbooks. The analysis results will be gathered and concluded in the way to design an instructional material that based on the didactical design research. This instructional material was designed by creating a situation where students are able to think and to do discovery of their own knowledge. In every situation given, it has been prepared the anticipation of didactical and pedagogical that consists of students' response and the feedbacks from the teacher. This instructional material is not a standard teaching material yet, means it will continue to be evaluated and improved in order to obtain the best result.

Keywords: learning obstacles, didactical design research, Pythagorean theorem, instructional material design