

# Enhancing Mathematical Problem Solving through the use of Dynamic Software Autograph

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## ABSTRACT

The purpose of this study was to investigate students' mathematical problem solving and mathematical connection, in cooperative learning setting using Dynamic Software Autograph, for students in Grade XI, in Medan, Indonesia.

This experimental study was conducted to 34 high school students in the School Year 2009/2010. The collection of the data was done using observation sheets, documentation, attitude scale, and test. Repeated measure test was delivered to students for four times, in the first class session (first measurement), after 2 class sessions (second measurement), after 4 times class session (third measurement), and after 6 class session (fourth measurement).

The result of the test showed that:

1. Cooperative learning using Dynamic Software Autograph in teaching Statistics in Grade XI improved students' problem solving ability. This can be shown from the results, that there were significant improvement in students' problem solving ability of the four tests given;
2. Cooperative learning using Dynamic Software Autograph in teaching statistics in Grade XI improved students' mathematical connection ability. This can be shown from the results that there were significant improvement in students' mathematical connection ability of the four tests given, even though there was no significant difference between the first and the second measurement;
3. Students activity during teaching learning processes improved, shown by the observations conducted during the lessons. Compared to the second measurement, the students' activeness improved 37% on the third measurement and improved 56,3% in the forth measurement.

The result of analysis of the questionnaire given to the students showed that: 20 students (58.8%) like using Cooperative Learning methods, 31 students (91.2%) like using Dynamic Software Autograph, and 27 students (79.4%) like using cooperative learning with Dynamic Software Autograph. Based on this result, it is hoped that mathematics teachers have to consider the use of Dynamic Software Autograph in teaching and

learning secondary mathematics, especially in teaching statistics, and teaching other units of mathematics such as Algebra, Geometry, Trigonometry, and Calculus.

**Keywords**

Cooperative learning, Dynamic Software Autograph, Mathematical Problem Solving, Mathematical Connection, Secondary School.