

# PROCEEDINGS

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# INTEGRATING DYNAMIC SOFTWARE AUTOGRAPH IN ENHANCING STUDENT'S CONCEPTUAL UNDERSTANDING AND MATHEMATICAL COMMUNICATION USING GUIDED INQUIRY APPROACH

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## Abstract

The aim of the study was to investigate the effect of integrating Dynamic Software Autograph on students' conceptual understanding and mathematical communication using Guided Inquiry Approach. This experimental study was conducted at two Vocational Schools (tourism) of grade XI in Medan, Indonesia. The subjects were randomly selected. The main objectives of the research were to investigate: (1) whether the gain score of student's conceptual understanding through guided inquiry aided by Autograph software was better than those of students learned through conventional approach, (2) whether the gain score of student's mathematical communication ability through guided inquiry helped by Autograph software was better than those of students learned through conventional approach, (3) the mastery of student's mastery learning (4) the student's learning activity during study. Instruments used in this research were : (1) test of conceptual understanding (2) test of mathematical communication, and (3) observation sheet of students' learning activity. Those instruments had been validated by the experts and tryout of those instruments showed that all items in both tests were valid. The correlation coefficient for the conceptual understanding test was 0,8 and for communication test was 0,72. The results of research shows that: (1) the gain of student's conceptual understanding through guided inquiry aided by Autograph software (0,67) was higher than those of learned through conventional approach (0,53); (2) the gain of the score on student's mathematical communicating ability through guided inquiry helped by Autograph software (0,67) was higher than those of student's learned using conventional approach (0,48); (3) the mastery of students learning through guided inquiry approach aided by Autograph was better than those of students learning using conventional approach; and (4) students' learned through guided inquiry approach aided by Autograph software was more actively engaged in learning (83%) than students learned using conventional approach (68,78%).