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KEY WORDS : LEARNING OUTCOMES / CONSTRUCTIVISM APPROACH/ STUDENT TEAMS ACHIEVEMENT DIVISION TECHNIQUE

RANU JINSKUL : THE DEVELOPMENT OF LEARNING OUTCOMES ON AREA AND VOLUME OF NINTH GRADE STUDENTS TAUGHT BY CONSTRUCTIVISM APPROACH COOPERATED WITH STUDENT TEAMS ACHIEVEMENT DIVISION TECHNIQUE. THESIS ADVISORS : ASST. PROF. WATCHARA LOWRIENDEE, Ph.D., PRASERT MONGKOL, Ed.D., AND ASST. PROF. CHAIYOS PAIWITHAYASIRITHAM, Ed.D. 305 pp.

The purposes of this research were to 1) compare students' learning outcomes on mathematical area and volume before and after the application of constructivism approach cooperated with the student teams achievement division technique (STAD), 2) study students' group work behaviors, and 3) investigate the students' opinions toward the instruction with constructivism approach cooperated with the student teams achievement division technique (STAD).The sample consisted of 36ninth-grade students at Mattayomwatdusittaram School during the academic year 2008 .

The research instruments were lesson plans on area and volume, learning outcomes tests, an observation form on students'group work behaviors and a questionnaire. The statistics for data analysis included percentage (%), mean ( $\bar{x}$ ), standard deviation (S.D.), dependent t-test and content analysis.

The findings were as follow :

1. The learning outcomes on area and volume of the ninth-grade students before and after being taught by the constructivism approach cooperated with student teams achievement division technique (STAD) were statistically significance different at .01 level. The students' learning outcomes scores after the instruction were higher than before the instruction.

2. The student's group work behaviors taught by the constructivism approach cooperated with student teams achievement division technique (STAD) were at a satisfactory level. Their performance on cooperative learning was at the highest level, followed by idea exchange, peer encouragement and acceptance of others respectively.

3. The student's opinions toward the instruction with the constructivism approach cooperated with student teams achievement division technique (STAD) were at a high agreement level. The usefulness aspect, the students perceived that it encouraged interpersonal helps. On the aspect of learning activities which encouraged them to exchange opinions and discuss with friends. Whereas on the aspect of learning environments they perceived that the environment encouraged the group members' positive relationship and acceptance of group members' opinions.

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