

Sumit Thinpanja. 2002. *The Development of Learning Activities in Physics Using Collaborative Learning Model*. Master of Education Thesis in Science Education , Graduate School Khon Kaen University.

[ISBN 974-367-116-1]

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Abstract

The purpose of the present research was to develop teaching/learning activities for the Physics subject of "Direct Current" based on collaborative learning model for Mathayom Suksa V (Grade 11) students. The sample consisted of 36 grade-11 students in Modindaeng Demonstration School of Khon Kaen University during the second semester of the 2001 academic year.

The instruments used in the study included the following items :

(1) Eleven lesson plans based on collaborative learning model for the Physics subject of "Direct Current" which took 22 periods to complete.

(2) Reflection tools which included a teaching behavior observation form, a teacher's diary, a student opinion sheet, a student interview form, and end-of-spiral quizzes.

(3) Evaluation tool to evaluate the effectiveness of the activities which was a learning achievement test.

The study followed an action research procedure which consisted of 3 action spirals. The first spiral covered lesson plans 1-5 , the second spiral, lesson plans 6-8 , and the third spiral, lesson plans 9-11. At the end of each spiral, the student were given a quiz in order to evaluate their progress. Also at this step the researcher and his coresearcher made an analysis of the data gathered from observations and student interviews for the purpose of adjusting the rest of the lesson plans to make them more effective. At the end of the third spiral a learning achievement test was administered to the students in order to evaluate the effectiveness of the teaching/ learning activities.

There were two categories of data to analyze. The qualitative data, collected from making observation, records and student interviews, were analyzed, interpreted and the learning achievement test, were analyzed by means of finding the frequency, percentage and arithmetic mean.

The results of the development of the collaborative learning activities included 1) a seven-step teaching learning activities which was consisted of 1.1) the introduction of the topics to be studied, 1.2) the selection of the topics by students of their own free choice and the voluntary selection of a group for them to participate in, 1.3) the explanation of activity plans by the teacher, 1.4) the collaborative planning for action by the students, 1.5) the presentation of the plans to the class, 1.6) the evaluation of presentation results, 1.7) answering a quiz, and 2) the student' learning acsievement had been raised up to a satisfactory level. The majority of the students were able to make a score of 70% and up, while 80% of them passed the prescribed criterion.