

Yuvaree Chaiponggam 2014: The Development of Analytical Thinking Ability about Mechanical Wave in Grade 11 Students by Using Inquiry Based Learning. Master of Education (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Mr. Ekgapoom Jantarakantee, Ph.D. 206 pages.

The purposes of this research were to study the analytical thinking abilities and to find out suitable teaching techniques of inquiry approach on the topic of “Mechanical Wave” on analytical thinking abilities of grade 11<sup>th</sup> students. This research was the action research method. The subject were a group of 48 students, grade 11 in a large size school under the secondary educational service area office 3 in the first semester of academic year 2014. The research instruments consists of: analytical thinking ability test, the teacher’s notes, exercises and the students’ journal. The data on the analytical thinking abilities test were analyzed by content analysis and grouping the answer into 3 groups. The frequency and percentage of the answer in each group was calculated both before and after learning with inquiry approach. The data on teaching techniques on the topic of “Mechanical Wave”. Was analyzed by content analysis from the students’ journal and the teacher’s note.

The results indicated that: 1. Learning with inquiry approach successfully develop analytical thinking abilities of students. It was found that before learning most of students were grouped in the correct answer for the analysis of element issue and incorrect answer for the analysis of relationship issue and misunderstanding answer for the analysis of organizational principles issue On the other hand, after learning with inquiry approach, it was found that most of students were in the correct answer groups in all indicators of analytical thinking abilities. 2. Suitable teaching techniques of inquiry approach on the topic of “Mechanical Wave” are as follows 1) For the engagement and the exploration, demonstration teaching should be added. 2) For the exploration, explanation and elaboration, group work and the proposed activities for the exchange of knowledge. 3) For five step of learning with inquiry approach suitable teaching techniques are participating activities and questions for sharing opinions.

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Student’s signature

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Thesis Advisor’s signature