Abstract

The main purpose of this study is to "developing higher order thinking skill through investigative project learning: An action research of science class in secondary 6/3". This study aims to: determine the current situation of development of a level of higher order thinking skill (analysis, evaluate, creation) in science class; to design and implement instructional development interventions (IDI) using investigative project based approach that will improve the development of the higher order thinking skill (analysis, evaluate, creation); and to determine the effect of the investigative project based teaching approach on the development of higher order thinking skill (analysis, evaluate, creation).

The subject of this study was 40 students in 6/3 (Science - Math Program). The research is action research intends to determine the effect of utilizing project based investigative Learning in developing the level of higher order thinking skills (analysis, evaluate, creation). The main method applied by the researcher in gathering the data in the teaching of was the use of 30 items pre-test and post-test, questionnaire for pre-observation behavior and post-observation behavior of the student group working in science class, evaluation of the science project process along with presentations.

Data analysis was done by using of SPSS software for quantitative evaluation of Higher Order Thinking Skill development of students taught by Investigative project learning. To comparisons by using Pre-test and Post-test about AC and DC by analyzing the average ($\bar{X}$) and the standard deviation (S.D). An analysis of behavioral ability problem solving data of secondary 6/3 by using Investigative project learning, analysis the average ($\bar{X}$), the standard deviation (S.D). An analysis of the performance evaluation of the ability of a student’s project from the planning work group of students. Work processes, defined work pieces, and presentation of information. Learning management using Investigative project learning, an analysis the average ($\bar{X}$), the standard deviation (S.D).

After the developing higher order thinking skill through investigative project learning, the result of the findings was deduced; this science's teaching about a teacher who managed the classroom and student's behavior that the researcher analyzed the student who
learnt science subject about their basic knowledge and skill and how to solve the problem. The researcher uses many ways to design the teaching and learning with Investigative Project Learning by analyzing, evaluation and creation.

The researcher found that the student has a higher order thinking skill that the average scores to explain the difference between using investigative project to develop the higher order thinking. It could be concluded for students' assessment summary; there were significant difference between pre and post instructional development interventions (IDI) levels of higher order thinking skills in terms analysis, evaluate and creation with the students. And the average score of the Unit test and Observation checklist show that after using investigative project learning the students had improve the higher order thinking and behavior. As a result of the teacher changed own teaching style to learning with Investigative Project Learning (IPL) that it made the student has Scientific Skill, Scientific Attitude and tried to find the Scientific Method according to scientific knowledge such as Fact, Concept, Principle, Hypothesis, Theory and Law. All of the students applied their knowledge to solve the problem correctly because of Investigative Project Learning can improve the student has more experience about a science subject, especially it can help them to develop their thinking process and increase them with scientific attitude that it transfer from IPL style. Consequently, Higher Order Thinking skill through investigative project learning can develop the student of science class in secondary 6 with significantly to H1a.

From this study have recommendations that should be used investigative project learning (IPL) in teaching with others class; especially in a science subject to check the teaching style is suitable for the student. The researcher should be improve this research to find the Independent variable and Dependent Variable before the researcher does IDI.