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The Development Of Teaching Science Innovation In Improving Learning Achievement In The Topic The Result Of Creativity Learning To Solve Science Problems Of Matthayomsuksa 6 Students Of Numpongsuksa School Under Secondary Educational Service Area Office 25



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Abstract

An approach to the management of the National Education Act of 2542 , as amended (on the second) Act 2545 , Section 22 principles that all learners are able to learn and develop themselves and considered learners are the most important. The educational management process must encourage learners to develop naturally. In Article 24, education must provide organizing the learning process, must practice the thinking process, situation management skills, application of knowledge to prevent and solve problems. The teaching processes organize activities for learners to learn From real experience Practice to be able to think and act.

The current problem of science teaching and learning is inconsistent with the rapidly advancing evolution of science and technology because of the instruction based on the teacher manual that requires students only come to the correct conclusion. Teachers also focus on the ability to convey the content to be memorized for the exam, not focusing on the process for learners to develop thinking, analyze, and synthesis. I don't like reading and don't know how to learn. The academic achievement in science was not satisfactory (Jiraporn Siritawatt , 2541: 37) and the assessment of the Department of Academic Affairs (Rungkaewdang , 2003: 9 -11) found that the students' grades Secondary school year 6, academic year 2002, with a percentage average score in science courses 45.1 And from the scientific and technology competency ranking report in In 2002, a total of 47 countries by the International Institute for Management Development (IMD) appeared that Thailand was ranked at

33rd and ranked as the country's competitiveness. Thailand science and technology country ranked at 47th (Office of Science and Technology Development National Technology, 2003: 7-8).

Therefore, the management of science teaching needs to change the learning behavior. There is a need for both teachers and students to reduce the role of teachers from being a teller, lecture, demonstration, to plan activities for students to learn and emphasize the process for students to think, practice, study and research in a systematic way with a variety of activities, including field activities, observation, survey, examination. laboratory experiments searching for educational project data from local learning sources with regard to maturity different experiences, environments and cultures that students have come to know before entering the classroom. One of the ideas currently available as an alternative to science teaching activities is the concept of knowledge creation (Constructivism).

1. Introduction

Knowledge creation is a theory of learning or the creation of meaning of perceived things (Richardson, 1997: 2). It is believed that humans have the potential to generate knowledge for themselves when interacting with things and surrounded by using existing knowledge and experiences to create the meaning of new experiences, because each human being has different intellectual development and different knowledge and experience. They have different interests, the ability to interpret, unequal experiences, and have different cognitive development . Despite having the same experience, the theory of knowledge creation states that the interaction of human beings will allows humans to modify their own knowledge and understanding to be more accurate and in a realistic situation, knowledge is interdisciplinary (Richardson, 1997: 9 -12).

For this reason, researchers are interested in developing the Constructivist Learning Model (CLM) and using it to organize additional chemistry teaching activities to give students a hands-on experience by taking action, experimenting and creating knowledge on their own, leading to the development of academic achievement and ability to solve problem solving problems.

2. The purposes of the study

To study the teaching method of knowledge creativity to the students' learning achievement to solve the science problems of the Matthayomsuksa 6 Students.

3. Research hypothesis

1. The students have the learning achievement higher than the criterion of 75 percentage with statistics significant 0.05
2. The students have the ability to solve the science with statistics significant 0.05

4. Constructivism theory

Theories of the creation of knowledge or the philosophy of creating knowledge as a philosophy of knowledge and acquiring knowledge (Sutherland, 1997 cited in Chai Rit Bodhi Suwan, 2000: 1) It has compiled the meaning of the creation of knowledge, the second approach is the definition of a child who is in a wide swath. The students are the creators (construct) knowledge and strategies (strategies) to acquire knowledge. Another way of meaning is that children construct "... images of their own authenticity from their own unique experiences (child constructs his own version of reality

from his own unique experiences), and children use this process in understanding when find a new experience ... "

Learning model for creative knowledge (The Constructivist Learning Model -- CLM), the researcher develops the study from the idea of Yager's to promote the cooperation and, practice opinions, encourage self-criticism, gather evidence to support opinions and generate new opinions based on new experiences and evidence. It consists of 4 steps of activity, summarized as follows:

1. Invitation is a process where students are asked from their interests by curiosity. The teacher must create a learning situation that encourages doubts, encourages students to set up their own ideas. A teacher asks questions about the situation or encourage students to become curious about the problem to study.

2. Exploration is a stage where students have to work together to brainstorm together and find potential options to find data, design experiments, perform experiments collect data, use solutions, evaluate alternatives, debate, and analyze the data

3. Proposed Solution Translate and Explanation is the steps for the students in need the presenting information and ideas from the action in the survey stage by creating a pattern, explaining, collecting answers and solving problems to make appropriate decisions and mix problem solving with existing knowledge and from experience.

4. Taking Action is a process where students can apply their knowledge and skills when deciding and then be used to convey the benefits of exhibiting publishers or use it as a new question. they can see that the best concept of the most important thing of the knowledge creation group. The learner is the creator of knowledge and new meaning or the occurrence of only self-learning by integrating the prior knowledge with the touching experience.

5. Conceptual framework

Independent variables are

1. Invitation Step
2. Exploration Step
3. Proposed Explanation and Solution Step
4. Taking Action Step

Dependent variables are

1. The learning achievement in Chemistry
2. The abilities to solve science problems; identifying problem, analyzing, and defining method of the constructivist learning model.

6. Research results

1. The students had the learning achievement in The Constructivist Learning Model higher than the criterion of 75 percentage with statistics significant 0.05

2. The students have the ability to solve the science in The Constructivist Learning Model with statistics significant 0.05

7. The contributions of the study

1. to develop the learning process of knowledge creativity in The Constructivist Learning Model which based on the National Education Act of 2542 and 2545
2. to develop the teaching process in Science subjects.
3. To serve as a guideline for teaching and learning for learners to develop thinking, analysis, and synthesis to create knowledge by themselves from study and research which is resulting in the development of academic achievement and students' ability to solve scientific problems.