

Jiraporn Jittham 2013: Learning Activities Using the Science-Technology-Society Approach in the Topic of Biomolecules on Problem Solving Ability for 10th Grade Students in a Private School in Samut Prakan. Master of Education (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Assistant Professor Sumalee Kanjanachatee, Ed.D. 151 pages.

The two purposes of this research are to study the problem solving abilities of the students before and after using the Science-Technology-Society (STS) approach to learn about biomolecules, and to discover suitable teaching techniques of the STS approach in biomolecules on problem solving abilities. This research adhered to the action research method. The research subjects were a group of 58 students in grade 10 from a private school in Samut Prakan province during the first semester of the academic year 2012. The research instruments consist of the problem solving ability test, the teacher's notes, and the students' journals. The data on the Problem Solving Abilities Test were analyzed using indicators of problem solving abilities, and calculated with the average response of each student both before and after learning with the STS approach. Upon comparing the results, and the percentage of students whose scores were better after the STS approach. The data from the teaching techniques of biomolecules were analyzed by content analysis from the students' journals and the teacher's notes.

The results indicated that: 1) Learning activities with the STS approach in biomolecules successfully developed the problem solving abilities of students. It was found that before learning most students answered correctly but incomplete explanation, some students answered without a relevant situation and plagiarized from content in the situation. However, after learning with the STS approach, it was found that most students answered correctly for all indicators. The average score of problem analysis showed the highest results and the least was solution implementation. 2) Suitable techniques for teaching about biomolecules with the STS approach on problem solving abilities consist of: Step 1. Searching-to observe and identify the problem related to the learning objectives and given situations; Step 2. Solving-to plan and follow up the planning; Step 3. Creating-to consider information, summarize the findings and prepare materials for the presentation; Step 4. Sharing - to present and discuss the results of the study and Step 5. Action - to implement the knowledge and findings and to solve their problems and social problems in action.

Student's signature

Thesis Advisor's signature