Unit Planning on Environmental Water Analysis at Kurasuki Amaki High School Which Is Supper Science High School

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Introduction

In Japan, a new science curriculum model called Super Science High School was initiated and introduced to school as a pilot project to help improve and develop students' abilities in scientific observation, problem solving, data analysis and comprehending natural science in daily life. The scientific skills are taught to students through practical experiments in laboratory and field research work including collection of data and information.

Amaki High School is one of pioneer schools that instituted and implemented the super science curriculum model in 2005. To enhance the super science challenging role, additional science subject called "Understanding Environmental Chemistry" was integrated into the program and taught in English to first grade students, in which there are 34 students, as the assignment.

A unit plan on skills of Environmental Water Analysis was prepared and introduced to students in classroom and in the actual research field by simple observation methods. In this presentation we report on the development of this unit planning, classroom activity progression and its outcome results.

Objectives of unit planning

The unit planning was designed practically based on the following objectives:

1. Providing to students the basic knowledge of water and its importance to environmental issues.
2. Helping students' understanding on water pollution by observing the effect of detergent as pollutant.
3. Introducing the analyzing method to determine the amount of detergent in water sample.

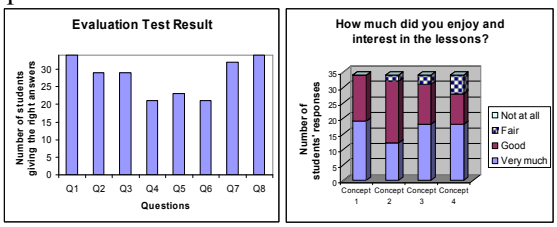
Lesson progress

After the development of the unit plan, the lessons' instructions were conducted 100% in English bound with the schedule:

Date	Contents
2005/06/14	- Water properties and their importance - Observation and determination of detergent effect on surface tension of water as a water property. -Homework assessment
2005/10/13	-Analysis of students' experimental results in the previous lesson and students' research results in the homework assessment. -What's the surface tension of water?
2005/12/15	-Determination of detergent in water sample by two methods: PONAL KIT ABS and fabric coloring. -Homework assessment
2006/01/12	-Analysis of students' experimental results in the previous lesson and students' research results in the homework assessment. -Evaluating Tests and Questionnaires.

Evaluation

The evaluation assessment was done in accordance with students' responses to evaluation tests and questionnaires. In general, students achieve high score in the evaluation tests and indicated high satisfactory of their achievement through questionnaires.



Concept1: surface tension of water, Concept2: effect of detergent on surface tension of water, Concept3: PONAL KIT ABS method, Concept4: Fabric coloring method.

In summing up, the prepared unit planning help Amaki High School to facilitate the role of Super Science High School effectively in providing the students not only knowledge and scientific skills, but also English ability. It is a recommendable challenge, if school can provide students opportunity to have science lessons in English with simple experimental and practical work for students.