

Abstract

This research objectives were 1) to follow-up the application of the knowledge gained from the workshop by science teachers 2) to study the relationship among dependent variables: gender, education background, major field of study, teaching experiences and innovation adoption, with independent variable as success in implementation, 3) to study the condition of secondary science instruction at present time, and 4) to develop science instruction techniques to suit Thai society.

Samples consisted of the upper secondary science teachers who taught physics, chemistry, biology and physical and biological science. These two groups of 24 science teachers came from 12 secondary schools who were attended the workshop- the first group, during October 6-9, 1998, and the second group, during May 24-28, 1999.

The instruments used for collecting data were 1) a questionnaire for the first science teacher group, 2) a questionnaire for the second science teacher group 3) a questionnaire for students in control group which new teaching techniques were applied and 4) the follow-up form for school visit.

Data were analyzed using basic statistics: frequency, percentage, mean score, and standard deviation. Pearson, Spearman and Point Biserial were used to analyze correlation coefficient..

Research findings were as follow:

1. Most of the first group of science teachers applied their knowledge obtained from the workshop in their teaching by providing activities focused on student-centered teaching approaches. The activities were varied, different from the traditional one and new. To conduct these new instructional activities, they faced some problems.
2. The relationship between two variables –science teachers' innovation adoption and success in application, was at the moderate high level with statistical difference at .01 level. All the rest of variables- gender, education background, major field of study, and teaching experiences were not related with the variable of success in implementing teaching techniques.

3. As a whole, the condition of secondary science instruction, at present, was appropriate. Students' basic science knowledge, science teachers' application on new teaching techniques were less appropriate. And teachers used less of these following teaching methods: demonstrating, researching, doing report, and supervising within schools to help other science teachers in providing their instructional activities.
4. Many science teachers developed their own science teaching activities using some techniques they learned from the workshop in order to make them suitable for their students who were under their responsibility. All together there were 31 activities. The teachers also tried to distribute these techniques within their schools and interpolated the method of develop students' thinking. They also implied and used active learning approaches in other subjects as well.