

ABSTRACT

The Effect of Laboratory Work on Acquiring Concepts and on Achievement in Chemistry for the Ninth Grade, UNRWA Schools.

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Interest in scientific laboratories has come a long way. It has been so for its great importance in achieving scientific objectives. The aim of this study has been to compare two methods of teaching traditional teaching (lecturing) and hands on inquiry laboratories in the context of achieving and acquiring scientific concepts for ninth graders in the fields of sciences/ chemistry. For this study two units of teaching chemistry for ninth graders has been chosen from the formal chemistry syllabus for the year 1997/98. These two units are Elector-chemical units & acid, bases & salts properties .

The convenience sample chosen consisted of two sections from the UNRWA Aroub Basic G/S & Boys School; one of these sections was chosen randomly as an experimental group and the other as a control group. The two sections were then rotated. The study instrument was an achievement test that included 25 items for each of the units. Seven null hypotheses were formed.

1- There are no statistically significant difference at $\alpha \leq 0.05$ between the mean achievement score of ninth graders in the electro-chemistry unit attributable to gender.

2- There are no statistically significant difference at $\alpha \leq 0.05$ between the mean achievement score in electro-chemistry attributable to teaching method (lab inquiry and traditional method).

3- There are no statistically significant difference at $\alpha \leq 0.05$ in the mean score of ninth graders in the teaching of electro-chemistry unit attributable to the interaction between gender and method of teaching.

4- There are no statistically significant difference at $\alpha \leq 0.05$ between the mean achievement score for ninth graders in acid, base, & salts unit attributable to gender.

5- There are no statistically significant difference at $\alpha \leq 0.05$ between the mean achievement score for ninth graders in acid, base, & salts unit attributable to teaching method (lab inquiry and traditional method).

6- There are no statistically significant difference at $\alpha \leq 0.05$ between the mean score of ninth graders in acid, base, & salts unit attributable to the interaction between gender and method of teaching.

7- There are no statistically significant difference at $\alpha \leq 0.05$ for the acquisition of scientific concepts for ninth graders attributable to teaching method (lab inquiry and traditional method teaching), gender and to interaction between gender and method of teaching.

A Two-way Analysis of Variance was used to test the first six hypothesis, whereas a Two-Way ANOVA for Repeated Measures Full Factorial was used to test the seventh hypothesis.

The findings indicate statistically significant differences in students' achievement in both units (electro-chemical and acid, bases, & salts, characteristic unit). This difference was in favor of the females and mode of teaching lab inquiry. However, there has been no effect for the interaction between the two sexes and the mode of teaching.

Moreover, statistically significant differences were found in the context of scientific concepts and the mode of teaching in favor of the lab inquiry method and females. Based on the findings of this research, lab inquiry was recommended as the better mode of teaching of the subject of chemistry.