

The effectiveness of the integration of the PDEODE strategy and conceptual mapping strategy in understanding the students of the 10th grade of chemical concepts and the nature of their science

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Abstract:

The aim of this study was to investigate the effectiveness of the integration of the PDEODE strategy and the conceptual mapping strategy in the understanding of the students of the 10th grade of the chemical concepts and the nature of their science. To achieve the objectives of the study, it was implemented during the first semester of the academic year 2018/2019, on a target sample of (115) students from the study community, which consists of students of the 10th grade enrolled in the Directorate of South Hebron, the number (3429) students, On four same classes of 10th grade grade at AL- Fawwar Girls High School, two experimental classes ; the first one using the mechanism of combining the six-dimensional strategies (PDEODE) and conceptual maps, and two other units studied in the traditional way. The researcher used the experimental approach and semi-experimental design for the purpose of study. The researcher used two instruments for the study: the first, instruments to test the understanding of chemical concepts, the second instruments is to test the understanding of nature of science, the instruments were applied to the study groups (experimental and control) in the school before and after treatment. In the analysis of the results, the mean and standard deviations were used Heterogeneities associated binary analysis (ANCOVA).

The results of the study were as follows: There were statistically significant differences in the understanding of the students of the 10th grade of the chemical concepts according to the variable method of teaching in favor of the experimental group, which was studied in a way that combines the six-dimensional strategies (PDEODE) and conceptual maps. The results also showed statistically significant differences in the understanding of students of the 10th grade of chemical concepts according to the variable level of achievement, and The results were in favor of the high achievement level, and there were no statistically significant differences depending on the interaction between the method and the level of achievement.

The results showed that there were statistically significant differences in understanding the nature of science among the 10th grade students according to the method variable. It was in favor of the experimental group which studied the method of combining the PDEODE and conceptual maps. Depending on the level of achievement, and the results were in favor of the level of high achievement, and the absence of statistically significant differences depending on the interaction between the method and the level of achievement.

Based on the results, the study recommends using the mechanism of combining the six dimensions strategies (PDEODE) and conceptual maps in the teaching of chemistry, and work to include the mechanism of integration in the training programs of teachers involved in the service and is a vision of the future of the curriculum developers.