



عمادة الدراسات العليا  
جامعة القدس

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## Abstract

1. This study aims at investigating the influence of the integrated contribution of the learning cycle strategy and the metacognition strategy to the seventh grade students' understanding of scientific concepts. The investigation of the influence of the student achievement and there gender .

To achieve the study objectives, the researcher designed a training program built on metacognition skills, and a teacher guide built on the strategy of the learning cycle, in addition to a test that measures the understanding of scientific concepts.

Validity of the instruments was verified by a number of referees. Reliability of the scientific concept test was calculated by means of a Cronbach alpha formula (0.92) and by means of the split half method (0.904).

The study was implemented on a sample of the seventh grade students at the governmental schools in the Hebron area. The sample consisted of (342) male and female students distributed on eight sections (163 males and 179 females). The sections in each school were divided into four groups. The first group was taught using the learning cycle strategy alone. The second group was taught by means of regular strategies in addition to being trained in metacognition skills. The third group was taught by means of both strategies (integrated strategies). The fourth group was taught by means of the regular strategy alone.

After implementing the study which lasted for seven weeks at both schools, the data was analyzed using the (Analysis of Covariance) to test the study hypotheses and the significance of the differences. Sidak test was used to specify the significant differences between modified means. The study yielded the following results:

1. There are statistically significant differences in the students' understanding of scientific concepts in favor of the groups which were taught by means of the integrated strategy.
2. There are no statistically significant differences in the students' understanding of scientific concepts due to student gender.

3. There are statistically significant differences in the students' understanding of scientific concepts due to the level of achievement in science subject and in favor of level for excellent achievement
4. There are no statistically significant differences in the students' understanding of scientific concepts due to the interaction between the group on the one hand and gender and level of achievement on the other hand.
5. There are statistically significant differences with regard to the students' understanding of scientific concepts due to the interaction between the variables of group and gender in favor of females in the integrated group and in favor of males in the learning cycle group.
6. There are no statistically significant differences in the students' understanding of scientific concepts due to the interaction between the variables of the group and the level of achievement
7. There are no statistically significant differences in the students' understanding of scientific concepts due to the interaction between gender and achievement level.

In light of these results, the researcher recommends the teachers to implement the strategies of the learning cycle and metacognition in teaching the subject of science at schools because of the positive influence these strategies have on the students' understanding of scientific concepts. The researcher also recommends organizing curriculum in a way that allows the use of strategies that would give students control over their learning and make them more productive thinkers and knowledge users. The researcher further recommends training teachers to apply these strategies and use them effectively.

The researcher also recommends conducting further research on the influence of using a training program built on the metacognition skills in various school subjects and across different academic levels.

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