

## "ABSTRACT"

"Creative Thinking Level and Its Relation to the Achievement and Attitudes Towards Mathematics for Basic Tenth Grade in Bethlehem Area"

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This study aimed to investigate the relationship between creative thinking and achievement and attitudes towards mathematics. It also aimed at investigating the effect of sex on creative thinking ability of the essential tenth graders.

The sample of the study consisted of (196) target students, (100 males & 96 females) at governmental schools in Bethlehem district during the scholastic year 1998/1999.

The researcher constructed a special achievement test of "Polynomial" unit. He also constructed an attitudes scale to mathematics which used creative thinking instrument prepared by Hababbeh test (1992).

Kuder Richardson (20) formulae was used to compute the reliability coefficient of the achievement test and was found to be (0.76). The reliability coefficient of an attitudes scale towards mathematics was found out to be (0.64), and the reliability coefficient of the creative thinking test, was found out to be (0.71).

The hypotheses of study yielded the following results :

1. There is no relationship between the means of creative thinking and means of achievement in maths for target student.
2. There is no relationship between the means of creative thinking and the means attitudes to maths for target students.
3. There is no difference between the means of creative thinking in maths for target students in terms of sex.
4. There is no difference between the means of attitudes to mathematics for target students in terms of sex.
5. There is no difference between the means of achievement in mathematics for target students in terms of sex.

Pearson's  $r$  correlation coefficient was used to find the correlation coefficient between creative thinking and both achievement in mathematics, and attitudes to mathematics, in order to test the first and the second hypotheses. T test was

used to test the third hypothesis. One-way analysis of variance test was used to test the fourth and the fifth hypotheses.

The results of this study were as follows:

1. There was a positive correlation between creative thinking and achievement in mathematics. Pearson's  $r$  was (0.598).
2. There was a positive correlation between creative thinking and attitudes to mathematics. Pearson's  $r$  was (0.4989).
3. There was no significant difference ( $\alpha = 0.05$ ) between the mean score of sex on the creative thinking test on the sample.
4. There was no significant difference ( $\alpha = 0.05$ ) between the mean score of sex on attitudes scale to mathematics on the sample.
5. There was no significant difference ( $\alpha = 0.05$ ) between the mean score of sex on the achievement test mathematics on the sample.

In light of the study, the researcher advised to re-test the methods of teaching maths, making use of attitudes in students to teaching maths, and reconstruct the programs of study in order to improve creative thinking.

The researcher recommended that it is necessary to construct test in order to measure the ability of creativity by using maths formulae. Second, conducting studies to define the effect of the teacher in improving creative thinking in students. Third, it is vital to carry out similar studies at different class levels, taking different aspects into consideration in order to define the effect with each other.