

Abstract

"The effectiveness' of a unit in statistics based mathematical representation and connection in developing prep stage student statistical thinking and learning retention"

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The aims of the study was to investigate the effectiveness of teaching a unit in statistics based on mathematical representation and connection in developing prep stage student statistical thinking and learning retention .

Sample of the study consisted of seventy (70) students divided into two groups (an experimental group of 36 students and control group of 34 students).for achieving the study aims ,the researcher rephrased" unit three : statistics "of mathematics student book given to second year prop (2014) .the unit was based on the representation and connection approach the researcher also constructed two tests (one for measuring achievement and the other for measuring statistical thinking skills ,skills included in the statistical thinking test are (data collection – data organization – data representation – data analysis and interpretation statistical concepts usage and implementation) .after constructing the study tools ,the researchers tested for validity and reliability and then the divided the study sample into two equivalent groups using appropriate statistical methods ,then the researcher implemented the study measurement tools pre to teaching the unit and once again after implementing the unit

Results of the study showed that:

-- the experimental group outperformed the control group in both the achievement and the statistical thinking testes ,as the results proved that then were statistically signification differences between the two groups in favor of the experimental one.

-- the experimental group outperformed the control group in learning retention ,as their were statistically signification differences between the two groups in favor of the experimental one .

In the light of the study results the researcher recommends the following :

- 1) Conducting studies for measuring the effect of the suggested strategy on other types of the thinking in other stages of education
- 2) Conducting studies for investigating the effect of the suggested strategy on other branches of mathematics in different stages of education .
- 3) Carrying out analytic studies for determining the extent to which mathematical representation and connections are included in mathematics textbook at different stage of education.

4) conducting a similar study in which a comparison is done between this strategy and other strategies .

5) conducting a study to figure out how far the teachers of mathematics are convinced of this approach in teaching.

6) conducting a similar study on other samples of students.

Key words: mathematical representations – mathematical connections- statistical thinking – learning retention - effectiveness .