

A Suggested Strategy Based on Brainstorming and Problem Solving for Developing Mind Habits and Critical Thinking Skills in Mathematics for Primary School Students

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The research aimed to examine the effect of using a proposed strategy based on brainstorming and problem solving on developing some habits of the mind, and critical thinking skills in mathematics among primary school fifth grade pupils in Fayoum Governorate. The research sample consisted of (85) students divided into two groups, one experimental (42 students), and the other is a control group (43 pupils). To achieve the objectives of the study, the researcher reformulated and redesigned the geometry unit (included in students' book (2019-2020 edition) in the first semester), in light of the principles and foundations of the proposed strategy. The researcher prepared two instruments: a test to measure habits of the mind, and another test to measure critical thinking skills in mathematics. After testing the tools for validity and reliability, the researcher conducted the experiment on the research sample after ensuring the equivalence of the two research groups (experimental - control).

Results of the study:

1. The experimental group outperformed the control group in each of the habits of mind test, and the test of critical thinking skills in mathematics. It was proven that there are statistically significant differences in favor of the experimental group in the post application of both tools.
2. There is a statistically significant positive correlational relationship between the results of the habits of the mind test and critical thinking skills test in mathematics

Recommendations of the study:

1. Using the proposed strategy in teaching and learning mathematics in different educational stages.
2. Paying attention to developing habits of the mind and critical thinking skills as an educational approach for teaching and learning mathematics in different educational stages.
3. Preparing training programs for teachers that include the foundations and principles of the proposed strategy to develop their teaching performance.
4. Including mathematical activities in mathematics courses in light of the proposed strategy that contribute to the development of habits of the mind and critical thinking skills, and to improve motivation towards learning mathematics.

Keywords: *Brainstorming - problem solving - habits of mind - critical thinking skills - skill.*