

La Ane Ode Muhamadi, 2024. The Effectiveness of Heuristic Strategies within a Scientific Approach to Enhance Students' Critical Mathematical Thinking Skills in Statistics

Supervised by Dr. In Hi. Abdullah, S.Pd.M.Si and Dr. Soleman Saidi, S.Pd.,M.Si

ABSTRACT

This study aims to evaluate the effectiveness of heuristic strategies within a scientific approach on students' critical mathematical thinking skills. Using a quantitative descriptive method and a cluster random sampling technique, the study involved 45 junior high school students, with 23 assigned to the experimental group and 22 to the control group. Data on students' critical mathematical thinking skills were collected through written instruments that met validity requirements. The data were analyzed both descriptively and inferentially. Descriptive analysis was used to outline the students' critical mathematical thinking skills, while inferential analysis was employed to assess the significance of differences between the experimental and control groups. Results indicated that: 1) students who used heuristic strategies in the scientific approach had an average score of 79.56%, categorized as medium; 2) those who used only the scientific approach had an average score of 74.32%, also in the medium category; 3) there was a significant difference in the achievement and improvement of students' critical mathematical thinking skills between the two groups; 4) the heuristic strategy within the scientific approach is effective in enhancing the critical mathematical thinking skills of Grade VIII students at SMP Negeri 1 Wasilei, East Halmahera.

Keywords: Students' critical mathematical thinking skills, heuristic strategies and scientific approaches.

