Peningkatan Kemampuan Berpikir Kritis dan Representasi *Visual Thinking* Matematis Siswa dengan Penerapan Metode Pembelajaran *Kolawole's Problem Solving*

ABSTRAK

Penelitian ini merupakan kuasi eksperimen dengan desain penelitian *nonequivalent control group*. Kelompok eksperimen diberi perlakuan berupa pembelajaran dengan penerapan metode pembelajaran *Kolawole's Problem Solving*, sedangkan kelompok kontrol dengan pembelajaran konvensional. Penelitian ini melibatkan 58 siswa kelas X SMA di Jakarta. Analisis data dalam pengujian hipotesis digunakan uji *Mann-Whitney U* dan uji *Kruskal Wallis*. Berdasarkan hasil penelitian, ditemukan bahwa: (1) Secara keseluruhan, peningkatan kemampuan berpikir kritis matematis siswa yang mendapat pembelajaran dengan penerapan pembelajaran *Kolawole's Problem Solving* (KPS) lebih baik daripada siswa yang mengikuti pembelajaran konvensional; (2) Secara keseluruhan, peningkatan kemampuan representasi *visual thinking* matematis siswa yang mendapat pembelajaran dengan penerapan pembelajaran *Kolawole's Problem Solving* (KPS) lebih baik daripada siswa yang mengikuti pembelajaran konvensional; (3) Peningkatan kemampuan berpikir kritis matematis siswa kelas yang diajarkan dengan pembelajaran KPS secara signifikan lebih baik daripada siswa yang diajarkan dengan pembelajaran konvensional berdasarkan kategori KAM rendah sedangkan secara signifikan tidak lebih baik berdasarkan kategori KAM tinggi dan sedang; (4) Peningkatan kemampuan representasi *visual thinking* matematis siswa kelas yang diajarkan dengan pembelajaran KPS secara signifikan lebih baik daripada siswa yang diajarkan dengan pembelajaran konvensional berdasarkan kategori KAM sedang sedangkan secara signifikan tidak lebih baik berdasarkan kategori KAM tinggi dan rendah; (5) Terdapat pengaruh interaksi metode pembelajaran (*Kolawole's Problem Solving* dan konvensional) dan KAM terhadap peningkatan kemampuan berpikir kritis matematis siswa. (6) Tidak terdapat pengaruh interaksi metode pembelajaran (*Kolawole's Problem Solving* dan konvensional) dan KAM terhadap peningkatan kemampuan representasi *visual thinking* matematis siswa.

Kata-kata kunci : pembelajaran *Kolawole's Problem Solving*, kemampuan berpikir kritis matematis, kemampuan representasi *visual thinking* matematis.

The Improvement of Critical Thinking ability and Visual Thinking of Representations Ability Students Mathematical by The Implementation of Kolawole's Problem Solving Method of Teaching

ABSTRACT

This research is a quasi-experimental design with nonequivalent control group. The experimental group was treated in the implementation Kolawole's Problem Solving learning method, whereas the control group was treated with conventional learning. This study employed 58 ten graders in one of Senior High Schools in Jakarta. To analyze data, this study used Mann Whitney U test and Kruskal Wallis test. The result revealed that: (1) Overall, Students' improvement of critical thinking ability with Kolawole's Problem Solving (KPS) teaching method are better than those with conventional teaching method. (2) Overall, Students' improvement of visual thinking of representation ability with KPS teaching method are better than those with conventional teaching method. (3) Students' improvement of critical thinking ability with KPS teaching method are significantly better than those with conventional teaching method based on low KAM categories but are not significantly better than in conventional learning based on high and medium KAM categories. (4) Students' improvement of visual thinking of representation ability with KPS teaching method are significantly better than those with conventional teaching method based on medium KAM categories but are not significantly better than those with conventional teaching method based on high and low KAM categories. (5) There is any significant interaction effect students' teaching method and KAM categories (high, medium, low) toward the improvement of students' mathematical critical thinking ability (6) There is no significant interaction effect students' teaching method and KAM categories (high, medium, low) toward the improvement of students' mathematical visual thinking of representation ability.

Keywords: Kolawole's Problem Solving Teaching Method, mathematical critical thinking ability, Visual thinking of representation ability.