ABSTRAK

Maulana, Iqbal (2025). **Peningkatan Kemampuan Koneksi Matematis Dan *Self-Reguelated Learning* Siswa sma melalui model *Problem-Based Learning* berbantuan Graspable Math**

Kemampuan koneksi matematis dan keterampilan *self-regulated learning* merupakan aspek yang penting dalam keberhasilan pembelajaran matematika khusunya pada jenjang SMA. Namun Kemampuan koneksi matematis dan keterampilan *self-regulated learning* siswa SMA di salah satu Kabupaten Bandung masih tergolong rendah. Penerapan model *Problem-based learning* berbantuan Graspable math menjadi alternatif solusi untuk meningkatkan kedua aspek tersebut. Penelitian ini bertujuan untuk: (1) Mengetahui apakah pencapaian kemampuan koneksi matematis siswa yang menggunakan model *Problem-Based Learning* berbantuan aplikasi Graspable Math lebih timggi daripada siswa yang memperoleh model pembelajaran konvensional tanpa bantuan aplikasi; (2) Mengetahui apakah *Self-Regulated Learning* siswa yang memperoleh model *Problem-Based Learning* berbantuan Graspable Math lebih baik daripada siswa yang tidak menggunakannya; (3) Mengetahui apakah terdapat korelasi positif antara kemampuan koneksi matematis dan *Self-Regulated Learning* siswa yang belajar dengan model *Problem-Based Learning* berbantuan Graspable Math. Metode yang digunakan adalah kuasi eksperimen dengan desain *nonequivalent control group design*. Subjek penelitian terdiri dari dua kelas X di SMA Kabupaten Bandung, yaitu kelas X-10 sebagai kelas eksperimen yang menggunakan model PBL berbantuan Graspable Math dan kelas X-11 sebagai kelas kontrol yang menggunakan model pembelajaran konvensional. Instrumen yang digunakan berupa tes uraian (*pretest* dan *posttest*) serta angket SRL. Data dianalisis menggunakan *SPSS 23.0 for Windows*. Hasil penelitian menunjukkan bahwa: (1) Pencapaian koneksi matematis siswa kelas eksperimen lebih tinggi daripada kelas kontrol. (2) *Self-regulated learning* siswa kelas eksperimen lebih baik dari kelas kontrol; dan (3) Terdapat korelasi positif antara koneksi matematis dan SRL siswa.

Kata Kunci: Koneksi Matematis, Self-Regulated Learning, Problem-Based Learning, Graspable Math.

ABSTRACT

Maulana, Iqbal (2025). ***Improving Mathematical Connection Ability and Self-Reguelated Learning of High School Students Through Problem-Based Learning Model Assisted by Graspable Math***.

Mathematical connection skills and self-regulated learning skills are important aspects of successful mathematics learning, especially at the high school level. However, the mathematical connection skills and self-regulated learning skills of high school students in one of the districts in Bandung are still relatively low. The application of the Problem-Based Learning model assisted by Graspable Math is an alternative solution to improve both aspects. This study aims to: (1) Determine whether the mathematical connection abilities of students using the Problem-Based Learning model assisted by the Graspable Math application are higher than those of students receiving conventional learning models without application assistance; (2) To determine whether the self-regulated learning of students who receive the Problem-Based Learning model assisted by Graspable Math is better than that of students who do not use it; (3) To determine whether there is a positive correlation between mathematical connection skills and self-regulated learning of students who learn using the Problem-Based Learning model assisted by Graspable Math. The method used is a quasi-experimental design with a nonequivalent control group design. The research subjects consisted of two 10th grade classes at a high school in Bandung Regency, namely class X-10 as the experimental class using the PBL model assisted by Graspable Math and class X-11 as the control class using the conventional learning model. The instruments used were essay tests (pre-test and post-test) and SRL questionnaires. The data were analyzed using SPSS 23.0 for Windows. The results showed that: (1) The mathematical connection achievement of students in the experimental class was higher than that of the control class. (2) The self-regulated learning of students in the experimental class was better than that of the control class; and (3) There was a positive correlation between mathematical connection and SRL among students.

Keywords*: Mathematical Connection, Self-Regulated Learning, Problem-Based Learning, Graspable Math.*

RINGKESAN

Maulana, Iqbal (2025). *Paningkatan Kamampuh Koneksi Matematis jeung Self-Regulated Learning Siswa SMA ngaliwatan model Problem-Based Learning dibarengan Graspable Math*

*Kamampuh koneksi matematis jeung katerampilan self-regulated learning mangrupa aspék penting dina kamekaran diajar matematika, hususna dina tingkat SMA. Tapi dina kanyataanana, kamampuh koneksi matematis jeung katerampilan self-regulated learning siswa SMA di salah sahiji kabupatén di Bandung masih kaasup rendah. Penerapan modél pembelajaran Problem-Based Learning (PBL) nu dibantuan ku aplikasi Graspable Math jadi salasahiji alternatif solusi pikeun ningkatkeun dua aspék éta. Panalungtikan ieu boga tujuan pikeun: (1) Nitenan naha kamampuh koneksi matematis siswa anu diajar ngagunakeun modél PBL dibantuan Graspable Math leuwih luhur batan siswa anu ngagunakeun modél konvensional; (2) Nitenan naha self-regulated learning siswa anu ngagunakeun modél PBL dibantuan Graspable Math leuwih hadé batan siswa anu henteu ngagunakeunana; (3) Nitenan aya henteu hubungan positif antara kamampuh koneksi matematis jeung self-regulated learning siswa anu diajar ngagunakeun modél PBL dibantuan Graspable Math. Métode panalungtikan anu digunakeun nyaéta kuasi eksperimen kalayan desain nonequivalent control group desi**gn**. Subjek panalungtikan nyaéta dua kelas X di salah sahiji SMA di Kabupatén Bandung, nyaéta kelas X-10 salaku kelas éksperimen jeung kelas X-11 salaku kelas kontrol. Instrumen panalungtikan maké tes uraian (pretest jeung posttest) sarta angket SRL. Data dianalisis ku SPSS 23.0 for Windows. Hasil panalungtikan némbongkeun yén (1) Kamampuh koneksi matematis siswa kelas éksperimen leuwih luhur tibatan kelas kontrol; (2) Self-regulated learning siswa kelas éksperimen leuwih hadé tibatan kelas kontrol; sarta (3) Aya hubungan positif antara kamampuh koneksi matematis jeung self-regulated learning siswa.*

Kecap Konci: Koneksi Matematis, *Self-Regulated Learning*, *Problem-Based Learning*, Graspable Math.