

ABSTRAK

Monica Chinlie Arifin. Pengembangan Perangkat Pembelajaran Berbasis Model Kooperatif Tipe *Student Teams Achievement Division* (STAD) Berbantuan Geogebra Untuk Meningkatkan Kemampuan Pemecahan Masalah Matematika Siswa Kelas X MAN 1 Deli Serdang. Tesis. Medan: Program Studi Pendidikan Matematika, Pascasarjana UNIMED, 2021.

Keberhasilan proses pembelajaran khususnya pembelajaran matematika di dalam kelas harus dibarengi dengan ketersediaan perangkat pembelajaran yang memadai. Penelitian ini bertujuan untuk menghasilkan perangkat pembelajaran berbasis model kooperatif tipe STAD berbantuan Geogebra pada materi sistem persamaan linier dua variabel di kelas X yang valid, praktis, efektif dan untuk meningkatkan kemampuan pemecahan masalah matematika siswa. Penelitian ini termasuk jenis penelitian pengembangan (*research and development*) dengan target sasaran atau subjek penelitian adalah siswa kelas X MAN 1 Deli Serdang yang berjumlah 30 siswa. Data penelitian dikumpulkan melalui lembar validasi, angket respon guru dan siswa serta tes. Teknik analisis data yang digunakan adalah analisis data kuantitatif dan kualitatif serta uji-t.

Hasil penelitian disimpulkan bahwa: (1) perangkat pembelajaran berbasis model kooperatif tipe STAD berbantuan Geogebra yang dikembangkan telah memenuhi kriteria valid (layak). Kevalidan (kelayakan) terpenuhi secara kualitatif berdasarkan penilaian (validasi) validator ahli yang secara keseluruhan rata-rata dinyatakan valid; (2) perangkat pembelajaran yang dikembangkan juga telah memenuhi kriteria praktis. Kepraktisan terpenuhi secara kualitatif berdasarkan hasil keterlaksanaan pembelajaran, analisis angket respon guru dan respon siswa yang keseluruhan tergolong kategori baik dan praktis; (3) perangkat pembelajaran yang dikembangkan juga telah memenuhi kriteria efektif. Keefektifan terpenuhi secara kualitatif berdasarkan persentase ketuntasan belajar siswa secara klasikal dan persentase respon positif siswa; (4) penggunaan perangkat pembelajaran berbasis model kooperatif tipe STAD berbantuan Geogebra dapat meningkatkan kemampuan pemecahan masalah matematika siswa yang dibuktikan dari hasil analisis uji-t dengan nilai probabilitas (Sig) sebesar $0,000 < 0,05$; dan (5) proses penyelesaian jawaban siswa dalam menyelesaikan soal kemampuan pemecahan masalah matematika rata-rata tergolong mampu. Kemampuan penyelesaian masalah siswa dibuktikan dari analisis proses jawaban siswa pada ujicoba-1 dengan rata-rata persentase kemampuan sebesar 78,2% dan pada ujicoba-2 dengan rata-rata persentase kemampuan sebesar 82,4%.

Kata Kunci: Perangkat Pembelajaran, STAD, Geogebra, Kemampuan Pemecahan Masalah Matematika.

ABSTRACT

Monica Chinlie Arifin. Development of Learning Tools Based on Cooperative Model Type Student Teams Achievement Division (STAD) Assisted by Geogebra to Improve Mathematical Problem Solving Ability of Class X Students in MAN 1 Deli Serdang. Thesis. Medan: Mathematics Education Study Program, Postgraduate, UNIMED, 2021.

The success of the learning process, especially mathematics learning in the classroom, must be accompanied by the availability of adequate learning tools. This study aims to produce learning tools based on the STAD cooperative model with Geogebra assistance on the material of two-variable linear equation systems in class X that are valid, practical, effective and to improve students' mathematical problem solving abilities. This research is a research and development type with the target or research subject being students of class X MAN 1 Deli Serdang, totaling 30 students. The research data were collected through validation sheets, teacher and student response questionnaires and tests. The data analysis technique used is quantitative and qualitative data analysis and t-test.

The results of the study concluded that: (1) the learning tool based on the Geogebra-assisted STAD model that was developed had met the valid criteria. The validity is fulfilled qualitatively based on the expert validator's assessment which as a whole is declared valid; (2) the learning tools developed also meet practical criteria. Practicality is fulfilled qualitatively based on the results of the implementation of learning, the analysis of teacher and student response questionnaires, all of which are categorized as good and practical; (3) the learning tools developed also meet the criteria of being effective. Effectiveness is met qualitatively based on the percentage of classical student learning completeness and the percentage of student positive responses; (4) the use of Geogebra-assisted STAD cooperative model-based learning tools can improve students' mathematical problem solving abilities as evidenced by the results of the t-test analysis with a probability value (Sig) of $0.000 < 0.05$; and (5) the process of solving students' answers in solving the problem solving ability of mathematics problems on average is classified as capable. The student's problem-solving ability was evidenced by the analysis of the student's answer process on try-1 with an average percentage of ability of 78.2% and in test-2 with an average percentage of ability of 82.4%.

Keywords: Learning Tools, STAD, Geogebra, Mathematical Problem Solving Ability.