

ABSTRAK

DAVID EXAMEN SIHOMBING. Pengembangan Perangkat Pembelajaran Matematika dengan Model Problem Based Learning untuk Meningkatkan Kemampuan Koneksi dan Disposisi Matematis Siswa. Tesis. Medan: Program Studi Pendidikan Matematika Program Pascasarjana Universitas Negeri Medan 2022

Penelitian ini bertujuan untuk: 1) Menganalisis bagaimana validitas, kepraktisan dan efektifitas perangkat pembelajaran yang dikembangkan melalui model *problem based learning* pada aljabar di kelas VII SMP Negeri 4 Tarutung; 2) Menganalisis bagaimana peningkatan kemampuan koneksi matematis setelah menggunakan perangkat pembelajaran yang dikembangkan melalui model materi aljabar di kelas VII SMP Negeri 4 Tarutung; 3) Menganalisis bagaimana peningkatan Disposisi matematis siswa setelah menggunakan perangkat pembelajaran yang dikembangkan melalui model materi Aljabar di kelas VII SMP Negeri 4 Tarutung. Penelitian ini dikategorikan ke dalam jenis Penelitian Pengembangan (*Development Research*) dengan menggunakan model pengembangan perangkat pembelajaran Thiagarajan, Semmel dan Semmel yaitu model 4-D (*Four D Model*). Penelitian ini dilaksanakan di SMP Negeri 4 Tarutung. Subjek dalam penelitian ini adalah siswa kelas VII SMP Negeri 4 Tarutung yakni kelas VII-A dan VII-B tahun ajaran 2021/2022. Hasil penelitian menunjukkan bahwa: 1) Kevalidan perangkat pembelajaran dengan Model Pembelajaran *Problem Based Learning* berdasarkan Rencana Perangkat Pembelajaran, Lembar Kerja Peserta Didik, Buku Guru dan Buku Siswa yang digunakan termasuk kategori valid dengan rata-rata masing-masing secara berturut-turut hasil validasi, yaitu 4,61, 4,61, 4,64 dan 4,63, kepraktisan perangkat pembelajaran dengan Model Pembelajaran *Problem Based Learning* dalam pelaksanaan pembelajaran di kelas berdasarkan keterlaksanaan perangkat pembelajaran dengan rata – rata nilai pengamatan pada uji coba I sebesar 4,18 dan pada uji coba II sebesar 4,38 dan juga perangkat pembelajaran dengan Model Pembelajaran *Problem Based Learning* sudah efektif untuk digunakan dalam pembelajaran; 2) Peningkatan kemampuan koneksi matematis siswa setelah menggunakan model pembelajaran *problem based learning* pada materi aljabar berdasarkan rata-rata pencapaian kemampuan koneksi matematis siswa berdasarkan hasil *posttest* uji coba I adalah sebesar 77,75 meningkat menjadi 82,25 pada uji coba II; 3) Skor disposisi matematis siswa telah meningkat berdasarkan skor siswa pada uji coba I sebesar 3,45 sedangkan rata-rata skor disposisi matematis siswa pada uji coba II sebesar 3,625.

Kata Kunci: Pengembangan Perangkat Pembelajaran, *Problem Based Learning*, Kemampuan Koneksi, Disposisi Matematis Siswa

ABSTRACT

DAVID EXAMEN SIHOMBING. Development of Mathematics Learning Devices with Problem Based Learning Models to Improve Students' Mathematical Disposition and Connection Ability. Thesis. Medan: Mathematics Education Postgraduate Programme, State University Of Medan, 2022.

This study aims to: 1) analyze how the validity, practicality and effectiveness of learning tools developed through problem based learning models in algebra in class VII SMP Negeri 4 Tarutung; 2) Analyzing how to improve mathematical connection skills after using learning tools developed through algebraic material models in class VII SMP Negeri 4 Tarutung; 3) Analyzing how to increase students' mathematical disposition after using learning tools developed through the Algebra material model in class VII SMP Negeri 4 Tarutung. This research is categorized into Development Research using the Thiagarajan, Semmel and Semmel learning device development model, namely the 4-D model (Four D Model). This research was conducted at SMP Negeri 4 Tarutung. The subjects in this study were grade VII students of SMP Negeri 4 Tarutung, namely grades VII-A and VII-B in the 2021/2022 academic year. The results showed that: 1) The validity of the learning tools with the Problem Based Learning Learning Model based on the Learning Device Plan, Student Worksheets, Teacher Books and Student Books used were included in the valid category with an average of each successive validation result, namely 4.61, 4.61, 4.64 and 4.63, the practicality of learning devices with Problem Based Learning Learning Models in the implementation of learning in the classroom based on the implementation of learning devices with an average value of observations in the first trial of 4.18 and in the first test. try II of 4.38 and also the learning device with the Problem Based Learning Model is already effective for use in learning; 2) The improvement of students' mathematical connection skills after using the problem based learning model on algebraic material based on the average achievement of students' mathematical connection abilities based on the posttest results of the first trial was 77.75, increasing to 82.25 in the second trial; 3) The students' mathematical disposition scores have increased based on the students' scores in the first trial of 3.45 while the average score of the students' mathematical dispositions in the second trial is 3.625.

Keywords: *Development of Learning Devices, Problem Based Learning, Connection Ability, Students' Mathematical Disposition*