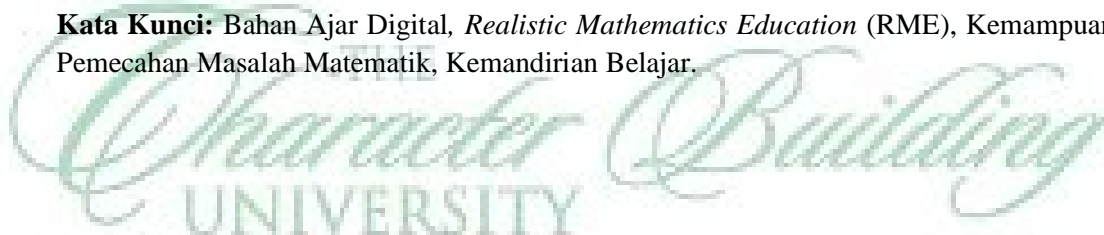# ABSTRAK

KURNIA MILDAWATI GEA. Pengembangan Bahan Ajar Digital Berbasis RME untuk Meningkatkan Kemampuan Pemecahan Masalah Matematik dan Kemandirian Belajar Siswa SMP Gajah Mada Medan. Tesis. Medan: Program Studi Pendidikan Matematika Pascasarjana Universitas Negeri Medan, 2022

Penelitian ini bertujuan untuk: 1) mendeskripsikan kevalidan, kepraktisan, dan keefektifan bahan ajar digital berbasis *Realistic Mathematics Education* (RME) yang dikembangkan untuk meningkatkan kemampuan pemecahan masalah matematik dan kemandirian belajar siswa; 2) mengetahui peningkatan kemampuan pemecahan masalah matematik dan kemandirian belajar siswa dengan menggunakan bahan ajar digital berbasis *Realistic Mathematics Education* (RME). Penelitian ini merupakan penelitian pengembangan. Model pengembangan yang digunakan dalam penelitian ini adalah model ADDIE dengan subjek penelitian 20 orang siswa/i kelas VIII-A dan 20 orang siswa/i kelas VIII-B di SMP Gajah Mada Medan. Objek dalam penelitian ini adalah bahan ajar digital berbasis *Realistic Mathematics Education* (RME) pada materi sistem persamaan linear dua variabel (SPLDV). Kevalidan bahan ajar digital yang dikembangkan ditinjau dari analisis hasil validitas bahan ajar digital oleh para validator dengan nilai rata-rata total sebesar 3,37 (kategori "valid"). Sementara itu, kepraktisan bahan ajar digital dilihat dari skor observasi keterlaksanaan pembelajaran pada uji coba II yaitu sebesar 3,73 (kategori "terlaksana dengan baik"). Keefektifan bahan ajar digital ditinjau dari empat aspek yaitu ketuntasan klasikal, skor angket kemandirian belajar, respon siswa, dan keterlibatan siswa dalam pembelajaran. Ketuntasan klasikal kemampuan pemecahan masalah siswa pada uji coba II sebesar 90% (18 siswa). Rata-rata skor angket kemandirian belajar siswa yaitu sebesar 61,70 (kategori "tinggi"). Rata-rata respon siswa pada uji coba II adalah 3,75 (kategori "tertarik). Rata-rata keterlibatan siswa dalam pembelajaran pada uji coba II sebesar 87,92 % (kategori "aktif"). Berdasarkan indeks gain ternormalisasi, diperoleh bahwa pada uji coba II terjadi peningkatan kemampuan pemecahan masalah siswa sebesar 0,34 (kriteria "sedang") dan peningkatan kemandirian belajar siswa sebesar 0,44 (kriteria "sedang").

Kata Kunci: Bahan Ajar Digital*, Realistic Mathematics Education* (RME), Kemampuan Pemecahan Masalah Matematik, Kemandirian Belajar.

ABSTRACT

KURNIA MILDAWATI GEA. Development of RME-Based Digital Teaching Materials to Improve Mathematical Problem-Solving Ability and Independent Learning of Students. Thesis. Medan: Mathematics Education Program Postgraduate School State University of Medan, 2022.

This study is aimed to: 1) describe the validity, practicality, and effectiveness of digital teaching materials based on Realistic Mathematics Education (RME) which developed to improve mathematical problem solving abilities and self regulated learning (SRL) of the student; 2) know improvement student's mathematical problem solving abilities and SRL by using digital teaching materials based on Realistic Mathematics Education (RME). This research is a developmental research. The development model used in this research is the ADDIE model with 20 students in class VIII-A and 20 students in class VIII-B at SMP Gajah Mada Medan. The object in this study is a digital teaching material based on Realistic Mathematics Education (RME) on the material of a two-variable linear equation system (SPLDV). The validity of the developed digital teaching materials is viewed from the analysis of the results of the validity of digital teaching materials by the validators with a total average value of 3.37 ("valid" category). Meanwhile, the practicality of digital teaching materials rated based on the observation score of learning implementation in the second trial, which is 3.73 (category "well implemented"). The effectiveness of digital teaching materials is viewed from three aspects, namely classical completeness, the SRL questionnaire scores, student responses, and student engangement in learning. The classical mastery of the students' mathematical problem solving abilities in the second trial was 90% (18 students). The average score of the student self regulated learning questionnaire is 61.70 ("high" category). The average student response in the second trial was 3.75 ("interested" category). The average student engangement in learning in the second trial was 87.92% (category "active"). Based on the normalized gain index, it was found that there was an increase in students' problem-solving abilities by 0.34 ("moderate" criteria) and an increase in student SRL by 0.44 ("moderate" criteria).

Keywords: Digital Teaching Materials, Realistic Mathematics Education (RME), Mathematical Problem Solving Ability, Self Regulated Learning.