ABSTRAK

Meriyanti Agustinawati (2014). Peningkatan Kemampuan Pemecahan Masalah Dan Koneksi Matematis Siswa Sekolah Mengah Pertama (SMP) Dengan Pendekatan Matematika Realistik Berbantuan *GeoGebra*. Program Pascasarjana Universitas Negeri Medan 2012.

Penelitian ini bertujuan mengetahui peningkatan kemampuan pemecahan masalah dan koneksi matematis siswa yang memperoleh pembelajaran PMR berbantuan *GeoGebra*. Penelitian ini berbentuk studi *quasi eksperimen*. Populasi dalam penelitian ini adalah seluruh siswa kelas VII SMP Negeri 1 Tanjung Morawa berjumlah 236 siswa. Sampelnya dipilih secara acak yaitu kelas VII-5 (kelas eskperimen) dan VII-9 (kelas kontrol). Instrumen dalam penelitian ini terdiri dari: tes kemampuan pemecahan masalah dan koneksi matematis, lembar proses jawaban siswa, lembar observasi aktivitas siswa. Instrumen tersebut dinyatakan telah memenuhi syarat validitas isi dengan reliabilitas untuk tes kemampuan pemecahan masalah dan koneksi matematis berturut-turut adalah 0,699 dan 0,8626. Analisis data inferensial yang digunakan ANAVA dua jalur dan deskriptif proses jawaban siswa dan aktivitas siswa. Hasil penelitian menunjukkan bahwa (1) Peningkatan kemampuan pemecahan masalah siswa yang diajar dengan pembelajaran PMR berbantuan *GeoGebra* lebih tinggi daripada siswa yang diajar dengan pembelajaran ekspositori, (2) Peningkatan kemampuan koneksi matematis siswa yang diajar dengan pembelajaran PMR berbantuan *GeoGebra* lebih tinggi daripada siswa yang diajar dengan pembelajaran ekspositori, (3) tidak terdapat interaksi antara pembelajaran dengan kemampuan awal siswa terhadap peningkatan kemampuan pemecahan masalah dan koneksi matematis siswa, (4) proses penyelesaian masalah siswa yang diajar dengan pembelajaran PMR berbantuan *GeoGebra* lebih lengkap daripada siswa yang mendapat pembelajaran ekspositori, (5) Aktivitas siswa dengan pendekatan matematika realistik berkategori baik. Berdasarkan hasil penelitian, maka peneliti menyarankan agar pendekatan matematika realistik (PMR) dan pemanfaatan bantuan *GeoGebra* dapat dijadikan sebagai salah satu alternatif untuk meningkatkan kemampuan pemecahan masalah dan koneksi matematis siswa sehingga pembelajaran matematika lebih inovatif dan menyenangkan.

ABSTRACT

Meriyanti Agustinawati (2014), Increasing the Ability of Problem Solving and Mathematical Connection of Junior High School By Using Realistic Mathematics Education Approach Helped By GeoGebra. Post Graduate Program of Medan University 2012.

The aims of this research are to know the increasing ability of problem solving and student's mathematical connection by using realistic mathematics education (RME) approach learning helped by GeoGebra is higher than ekspository learning. This research is a quasi–experiment research. Population of this research is all of the students in seventh grade of SMPN 1 Tanjung Morawa with totaled 236 students. The sample chosen is random sample which contain with VII-4 as experiment class and VII-2 as control class. The instrument consisted of the mathematical problem solving ability test, mathematical connection test, the process of answering questions sheets dan the observation sheet of student's activities. The instruments are stated to have fulfilled the content validity condition with reability coefficient 0,699 and 0,8626 gradually for mathematics problem solving ability and mathematics connection. Data analysis is done by using ANAVA two ways and description of the process studenst's answers and student activity. The result of this research shown that (1) there was the increasing ability in problem solving by using realistic mathematics education (RME) learning helped by GeoGebra is higher than using ekspository learning, (2) there was the increasing ability in mathematical connection by using realistic mathematics education (RME) learning helped by GeoGebra is higher than using ekspository learning, (3) there was no interaction between learning and student's ability level to the increasing ability of problem solving and mathematical connection, (4) The process answering of students who are learning with realistic mathematics education (RME) helped GeoGebra is more complete than the students who used ekspository learning, (5) Students activity in learning by using realistic mathematics approaching helped GeoGebra are categorized well. Based on this research, the researcher suggests that the learning with realistic mathematics education (RME) and using helped GeoGebra in increasing of mathematics problem solving ability and mathematics connection can be used as an alternative for the mathematics teachers in delivery the mathematics material innovatively and comfortable learning situation.