

ABSTRAK

Prastuti. Peningkatan Kemampuan Penalaran dan Komunikasi Matematika Siswa Sekolah Menengah Atas Melalui Pembelajaran Berbasis Masalah. Tesis. Medan : Program Studi Pendidikan Matematika Pascasarjana Universitas Negeri Medan, 2014.

Penelitian ini bertujuan untuk mengetahui: (1) perbedaan peningkatan kemampuan penalaran matematika antara siswa yang diberi pembelajaran Berbasis Masalah dengan siswa yang diberi pembelajaran konvensional, (2) perbedaan peningkatan kemampuan komunikasi matematika antara siswa yang diberi Pembelajaran Berbasis Masalah (PBM) dengan siswa yang diberi Pembelajaran Konvensional (PMK), (3) interaksi antara kemampuan matematika siswa dan faktor pembelajaran terhadap peningkatan kemampuan penalaran matematika siswa, (4) interaksi antara kemampuan matematika siswa dan faktor pembelajaran terhadap peningkatan kemampuan komunikasi matematika siswa. Populasi penelitian ini adalah siswa SMA Negeri 2 Medan. Pemilihan sampel dilakukan secara random dengan mengacak kelas. Instrumen yang digunakan terdiri dari : (1) tes kemampuan penalaran matematika (2) tes kemampuan komunikasi matematika. Adapun tes yang digunakan untuk memperoleh data adalah berbentuk uraian. Sedangkan perangkat pembelajaran yang digunakan adalah: (1) Rencana Pelaksanaan Pembelajaran (RPP), (2) Lembar Aktivitas Siswa (LAS). Instrumen tersebut dinyatakan telah memenuhi validitas isi serta koefisien reliabilitas tes sebesar 0,85. Data dalam penelitian ini dianalisis dengan menggunakan analisis statistik deskriptif dan analisis inferensial. Analisis deskriptif ditujukan untuk mendeskripsikan pola jawaban siswa dalam menyelesaikan tes kemampuan penalaran dan komunikasi matematika siswa. Analisis inferensial data dilakukan dengan ANOVA Dua Jalur. Hasil penelitian menunjukkan bahwa : (1) Terdapat perbedaan peningkatan kemampuan penalaran matematika antara siswa yang menggunakan PBM dan PMK. Peningkatan kemampuan penalaran matematika siswa yang menggunakan PBM lebih baik yaitu dengan rata-rata sebesar 0,619 dibandingkan dengan siswa yang menggunakan PMK dengan rata-rata sebesar 0,569 (2) Tidak terdapat interaksi antara pendekatan dengan kemampuan awal siswa terhadap peningkatan kemampuan penalaran matematika, (3) Terdapat perbedaan peningkatan kemampuan komunikasi matematika siswa antara siswa yang menggunakan PBM dan PMK. Peningkatan kemampuan komunikasi matematika siswa antara yang menggunakan PBM lebih baik dengan rata-rata sebesar 0,653 dibandingkan dengan PMK dengan rata-rata sebesar 0,595, (4) Tidak terdapat interaksi antara pendekatan dan kemampuan matematika siswa terhadap peningkatan kemampuan komunikasi matematika siswa.

ABSTRACT

Prastuti. Increasing The Intellectual Ability And Mathematic Communication Senior High School Students Through On The Learning Based On The Matter. Thesis. Medan : Study Programs Postgraduate Mathematic Education State University of Medan, 2015.

This research aims to know: (1) the differences of increasing mathematic intellectual ability between the students which are given the learning based on the matter with the students are given conventional learning, (2) the differences of increasing ability mathematic communication between the students which are given the learning based on the matter with the students which are the conventional learning, (3) the interaction between the ability of mathematic students and learning factor in increasing intelectual ability of mathematic students, (4) the interaction between the ability of mathematic students and learning factor in increasing communication ability of mathematic students. The population of the research are the students in SMA 2 Medan. The sample selection in done randomly with disorder the class. The instrument are used consist of : (1) the mathematic intellectual ability test, (2) the mathematic communication ability test. The tests are used to get the data which is essay form. Meanwhile, learning instrumens were used namely (1) lesson plan, (2) students activity sheets. Instrument was declared in compliance with the content validity and reliability coefficient of 0,85. The data in this research is analyzed with descriptive statistics analysis and inferensial analysis. The descriptive analysis aims to describe the pattern of students answer in finishing intellectual ability test and communication of mathematic students. The inferensial analysis, the data is done with ANOVA two ways. The research result shows that: (1) there are the differences of increasing mathematic intellectual ability between the students which are given the learning based on matter and conventional learning. The increasing of mathematic intellectual ability of students which are given the learning based is better than the conventional one showed by the mean of 0,619 while the group of student who taught by the conventional approach resulting mean of 0,569, (2) there are not interaction between the approach with the initial ability of students in increasing mathematic intellectual learning, (3) there are diffrences of increasing the ability mathematic communication between the students are used the learning based on the matter with are students are given conventional learning. The increasing of mathematic communication ability of student which are given the learning based is better mean of 0,653 while the group of student who taught by the conventional approach resulting mean of 0,595, (4) there are not interaction between the approach and the ability of mathematic students in increasing the communication ability of mathematic students.