ABSTRAK

RISMALYAH MANALU. Perbedaan Kemampuan Pemecahan Masalah Matematis dan Kemandirian Belajar Siswa Melalui Pendekatan *Scientific* dan Pendekatan *Scientific* Berbantuan *Software* Autograph. Tesis. Medan: Program Pascasarjana Universitas Negeri Medan (UNIMED), 2019.

Penelitian ini bertujuan: (1) Menguji secara statistik dan menganalisis ada atau tidak perbedaan nyata mengenai efek dari pendekatan *scientific* berbantuan *software* Autograph dan pendekatan *scientific* terhadap kemampuan pemecahan matematis siswa. 2) Menguji secara statistik dan menganalisis ada atau tidak perbedaan nyata mengenai efek dari pendekatan *scientific* berbantuan *software* Autograph dan pendekatan *scientific* terhadap kemandirian belajar siswa.(3) Menguji secara statistik dan menganalisis ada atau tidak efek interaksi antara pendekatan pembelajaran (*scientific* berbantuan *software* Autograph, *scientific*,) dan kemampuan awal matematis (KAM) terhadap kemampuan pemecahan matematis siswa. (4) Menguji secara statistik dan menganalisis ada atau tidak efek interaksi antara pendekatan pembelajaran (*scientific* berbantuan *software* Autograph, *scientific*) dan kemampuan awal matematis (KAM) terhadap kemandirian belajar siswa. Adapun populasi penelitian yaitu seluruh siswa kelas X SMA Negeri 1 Medan dengan jumlah 464 orang yang telah didistribusikan menjadi 13 kelas paralel, sedangkan sampel penelitian adalah siswa kelas X MIA-5 sebagai Kelas Eksperimen-1 dan kelas X MIA-6 sebagai Kelas Eksperimen-2 sebanyak 68 orang. Instrumen yang digunakan terdiri dari: tes KAM, tes kemampuan pemecahan masalah matematis dan angket kemandirian belajar. Analisis data dilakukan dengan uji Analisis Varian Dua Jalur (ANAVA). Hasil penelitian yaitu: (1) Terdapat perbedaan nyata kemampuan pemecahan masalah matematis siswa yang diberi pendekatan *scientific* berbantuan *software* Autograph dan pendekatan *scientific* dengan efek pengaruhnya sebesar 0,4023. Adapun perolehan rata-rata kemampuan pemecahan masalah matematis yang diajarkan dengan pendekatan *scientific* berbantuan *software* Autograph adalah 79,78 sedangkan rata-rata kelompok yang diajarkan dengan pendekatan *scientific* adalah sebesar 78,31 artinya kemampuan pemecahan masalah siswa dengan pendekatan *scientific* berbantuan *software* Autograph lebih tinggi dari pendekatan *scientific*, (2) Terdapat perbedaan nyata antara kemandirian belajar siswa yang memperoleh pendekatan *scientific* berbantuan *software* Autograph dengan siswa yang memperoleh pendekatan *scientific*. Adapun besar efek pengaruh pendekatan pembelajaran = 0,0674 berarti pendekatan pembelajaran dapat menjelaskan 6,74% variansi skor kemandirian belajar siswa, (3)Tidak terdapat interaksi faktor pendekatan pembelajaran dan faktor KAM terhadap kemampuan pemecahan masalah matematis. Adapun besar pengaruh tidak terdapat interaksi antara pendekatan pembelajaran dan KAM = 0,0587, yang berarti tidak terdapat interaksi pendekatan pembelajaran dan KAM dapat menjelaskan 5,87% variasi skor kemampuan pemecahan masalah matematis siswa, (4) Tidak terdapat interaksi faktor pendekatan pembelajaran dan faktor KAM terhadap kemandirian belajar siswa. Adapun besar pengaruh tidak terdapat interaksi antara pendekatan pembelajaran dan KAM = 0,0457 berarti tidak terdapat interaksi pendekatan pembelajaran dan KAM dapat menjelaskan 4,57% variasi skor kemandirian belajar siswa. Berdasarkan hasil penelitian, peneliti menyarankan guru matematika memadukan media belajar sesuai materi persamaan dan pertidaksamaan linear satu variabel dengan memperhatikan sintak pendekatan s*cientific* berbantuan *software* Autograph sesuai tuntutan indikator kurikulum 2013.

ABSTRACT

RISMALYAH MANALU. Differences in Mathematical Problem Solving Ability and Students Self-Regulated Learning through a Scientific Approach and Scientific Approach Assisted by Autograph Software. Thesis. Terrain: Mathematics Education Graduate Program, State University of Medan (UNIMED). 2019.

This study aims: (1) Test statistically and analyze whether or not there are real differences regarding the effects of the scientific approach assisted by Autograph software and the scientific approach to students' mathematical solving abilities. 2) Test statistically and analyze whether or not there are real differences regarding the effects of the scientific approach assisted by Autograph software and the scientific approach to student learning independence. (3) Test statistically and analyze whether or not there are interaction effects between learning approaches (scientific assisted Autograph software, scientific,) and mathematical initial ability (KAM) on students' mathematical solving abilities. (4) Test statistically and analyze whether or not there are interaction effects between learning approaches (scientific assisted Autograph software, scientific) and mathematical initial abilities (KAM) on student learning independence. The research population is all students of class X SMA 1 Medan with a total of 464 people who have been distributed into 13 parallel classes, while the study sample was students of class X MIA-5 as Experimental Class-1 and class X MIA-6 as Experimental Class-2 as many as 68 people. The instruments used consisted of: KAM test, mathematical problem solving ability test and learning independence questionnaire. Data analysis was performed by Two Path Variant Analysis (ANOVA) test. The results of the study are: (1) There are significant differences in mathematical problem solving abilities of students who are given a scientific approach assisted by Autograph software and scientific approaches with the effect of an effect of 0.4023. The average acquisition of mathematical problem solving abilities taught by the scientific approach assisted by software Autograph is 79.78 while the average group taught by the scientific approach is 78.31 which means students' problem solving abilities with the Scientific approach assisted by Autograph software are higher than Scientific approach, (2) There is a significant difference between students' learning independence who obtained a scientific approach assisted by Autograph software and students who obtained the scientific approach. The effect of the learning approach = 0.0674 means that the learning approach can explain 6.74% variance in student learning independence scores, (3) There is no interaction between learning approach factors and KAM factors on mathematical problem solving abilities. As for the influence there is no interaction between learning approaches and KAM = 0.0587, which means there is no interaction between learning approaches and KAM can explain 5.87% variation in scores on students' mathematical problem solving abilities, (4) There is no interaction between learning approaches and KAM factors towards student learning independence. As for the influence there is no interaction between the learnings approach and KAM = 0.0457 means that there is no interaction learning approach and KAM can explain 4.57% variation in student learning independence scores. Based on the results of the study, the researchers suggested that mathematics teachers integrate learning media according to the material similarities and linear one-variable inequalities by paying attention to the scientific approach syntax assisted by Autograph software according to the demands of the 2013 curriculum indicators.