ABSTRAK

NURHAIDA OKTARIANI SIREGAR. Pengembangan Perangkat Pembelajaran Matematika Berbasis Pendekatan Matematika Realistik Untuk Meningkatkan Kemampuan Komunikasi Matematis dan *Self Efficacy* Siswa SMK Namira Tech Medan. Tesis. Medan. 2018. Program Studi Pendidikan Matematika Program Pascasarjana Universitas Negeri Medan

Penelitian ini bertujuan untuk Mengetahui apakah ada peningkatan kemampuan komunikasi matematis dan *self efficacy* dengan pengembangan perangkat pembelajaran berbasis pendekatan matematika realistik di SMK Namira Tech Nusantara, Mengetahui apakah perangkat pembelajaran yang dikembangkan berbasis pendekatan matematika realistik Efektif terhadap kemampuan Komunikasi matematika dan *self efficacy* siswa kelas XI SMK Namira Tech Medan Nusantar. Subjek penelitian pada uji keterbacaan adalah siswa kelas XII TKJ. Subjek pada uji coba lapangan adalah siswa kelas XI TKJ-A dan siswa kelas XI TKJ-B. Data dikumpulkan menggunakan 4 jenis instrumen yaitu lembar validitas, lembar observasi, angket dan tes. Hasil penelitian diperoleh perangkat pembelajaran yang valid, dan efektif. Rata rata validitas dari 5 orang validator, adalah RPP: 4,46; LKS: 4,40; Buku Siswa: 4,43. Hasil validasi ini menunjukkan bahwa perangkat yang dikembangkan layak digunakan (memenuhi kriteria $3 \leq Va < 4$); pendapat siswa dan pendapat guru terhadap perangkat pembelajaran masing-masing mencapai ≥ 80%, yakni 89% dan 86%. Keefektifan dilihat dari uji coba lapangan dengan hasil: nilai ketuntasan hasil belajar pada uji coba I belum mencapai kriteria keefektifan (ketuntasan belajar klasikal ≥ 85%), sedangkan pada uji coba II sudah memenuhi kriteria keefektifan yaitu, 86,67% untuk kemampuan komunikasi matematis dan 90% untuk *self efficacy*. Respon siswa memenuhi kriteria keefektifan pada uji coba II yakni sebesar 94,20%. (2) Pada uji coba I dan uji coba II menunjukkan kemampuan komunikasi matematis dan *self efficacy* meningkat secara signifikan yang ditunjukkan dari selisih nilai *post test* pada uji coba I dan uji coba II yaitu 3,22 dan 4,81. Secara keseluruhan hasil penelitian menunjukkan bahwa perangkat pembelajaran yang dikembangkan adalah layak untuk digunakan.

Kata Kunci: Kemampuan Komunikasi Matematis, Pendekatan Matematika Realistik, Perangkat Pembelajaran, *Self Efficacy*

ABSTRACT

The purpose of this study were (1) to find out the validity, practical and effectiveness of developed realistic mathematics learning instrument, (2) to investigate whether the use of learning instrument could improve the students ability in mathematical communication and students self efficacy. This study was conducted by using research and development 4-D method (define, design, develop and disseminate) which was developed by Thiagarajan, Semmel and Semmel. The subject of study on readability test was the students of class XI TKJ-3. The subject of field test was the students of class XI TKJ-1 and XI TKJ-2. There were four kinds of instruments utilized in collecting the data of study, namely validity sheet, observation sheet, questionnaires and test. The result of study found that the learning instrument was valid, practical and effective. (1) The validity was obtained from the results of 5 validators, with the total average of lesson plans validity was 4,46; LKS: 4,40; students books: 4,43. Whereas the results of validity showed that the developed learning instruments was applicable (fulfilled the criterion 3 &8804; Va < 4). The practicality was obtained from the readability test with the results of observation sheet 3,17; students and teachers opinions toward the learning instruments respectively showed the number of 89% and 86%. The result of readability test showed that the developed learning instrument was practical (fulfilled the practicality criterion). The effectiveness was obtained from the field test with the results of: the standard score on the first field test hadnt achieved the effectiveness criterion (classical learning achievement ≥ 85%), besides in the second field test had achieved the effectiveness criterion with classical learning achievement ≥ 85% is 86,67%, the stundents respons is 94,20%, and the students activities are in the limit of learning effectiveness. (2). First field test and second field test that mathematical communication and self efficacy ability increased significantly as indicated by difference of post test value in first filed test and second field test. From the average of post test result of I and II, there is an increase of average score of students mathematical communication ability 3,32; step on self efficacy an increase 0f 4,81. The results of study thoroughly showed that the developed learning instrument was applicable.

Keywords: Learning instrument, Mathematical Communication Ability, Realistic Mathematics Learning, Self Efficacy.