

## ABSTRAK

**Puti Mutia Atikah, NIM 4161111058 (2021). Pengembangan Instrumen Tes Berbasis Pendekatan Matematika Realistik Untuk Mengukur Kemampuan Pemecahan Masalah Matematis Siswa MTs Negeri 2 Medan.**

Penelitian ini bertujuan untuk mengetahui validitas, reliabilitas, tingkat kesukaran, daya beda, kepraktisan dan respon siswa terhadap instrumen tes berbasis pendekatan matematika realistik pada pokok bahasan persamaan garis lurus di kelas VIII SMP/MTs dan mengetahui kemampuan pemecahan masalah matematis siswa kelas VIII MTs Negeri 2 Medan pada pokok bahasan persamaan garis lurus. Instrumen yang dikembangkan berbentuk soal uraian sebanyak 4 butir soal. Penelitian ini termasuk dalam penelitian pengembangan yang menggunakan tipe ADDIE (*Analysis, Design, Development, Implementation, Evaluation*). Subjek dalam penelitian ini berjumlah 31 orang. Hasil penelitian menunjukkan bahwa telah berhasil dikembangkan instrumen tes berbasis pendekatan matematika realistik yang berkualitas dari aspek validitas, reliabilitas, tingkat kesukaran, daya beda, kepraktisan dan respon siswa. Hasil validasi menunjukkan skor rata-rata penilaian instrumen tes oleh ahli sebesar 92% dengan kategori sangat valid dan validitas butir tes dengan setiap butir dinyatakan “valid” karena  $t_{hitung} \geq t_{tabel}$ . Reliabilitas butir tes instrumen yang dikembangkan memiliki reliabilitas “Tinggi” sebesar 0,69. Instrumen yang dikembangkan memiliki indeks kesukaran “Sedang” yaitu berada pada interval  $0,30 < IK \leq 0,70$ . Instrumen yang dikembangkan memiliki daya beda “Baik” pada soal nomor 1 dan 3 dan “Sangat Baik” pada soal nomor 2 dan 4 yaitu berada pada kisaran  $D_p > 0,2$ . Kepraktisan dilihat dari angket respon siswa dan guru yang melalui tiga tahap, yaitu respon guru, *one to one* dan uji coba kelas kecil yang hasilnya masing-masing 87,5%, 95,8%, 93,75%. Instrumen tes yang dikembangkan menunjukkan respon positif dengan rata-rata sebesar 95,56% pada kelas implementasi. Hasil kemampuan pemecahan masalah matematis siswa pada kategori sangat tinggi sebesar 32,25%, kategori tinggi sebesar 22,58%, kategori cukup sebesar 12,90%, kategori kurang sebesar 3,22%, dan kategori sangat kurang sebesar 29,03%. Rata-rata kemampuan berpikir tingkat tinggi matematis siswa adalah 69,04% dengan kategori cukup.

**Kata kunci:** Instrumen Tes, Pendekatan Matematika Realistik, Pemecahan Masalah Matematis, ADDIE

## ABSTRACT

**Puti Mutia Atikah, NIM 4161111058 (2021). Development of Realistic Mathematics Education Based Test Instruments to Measure Mathematical Problem Solving Ability of Students of MTs Negeri 2 Medan.**

His study aims to determine the validity, reliability, level of difficulty, differentiation, practicality and student response to realistic mathematics education based test instruments on the subject of straight line equations in class VIII SMP / MTs and to determine the mathematical problem solving abilities of class VIII students of MTs Negeri 2 Medan on the subject of straight line equations. The instrument developed was in the form of description questions as many as 4 items. This research is included in development research using the ADDIE type (Analysis, Design, Development, Implementation, Evaluation). Subjects in this study amounted to 31 people. The results showed that a test instrument based on realistic mathematics education with quality had been successfully developed from the aspects of validity, reliability, difficulty level, distinction, practicality and student response. The validation results show that the average score of the test instrument assessment by experts is 92% with a very valid category and the validity of the test items with each item declared "valid" because  $t_{count} \geq t_{table}$ . The reliability of the instrument test items developed had a "high" reliability of 0.69. The instrument developed has a "moderate" difficulty index, which is in the interval  $0.30 < IK \leq 0.70$ . The instrument developed has a "Good" difference in questions 1 and 3 and "Very Good" in questions 2 and 4, which is in the range of  $D_p > 0.2$ . Practicality is seen from the student and teacher response questionnaires which go through three stages, namely the teacher's response, one to one and small class trials with the results of each being 87.5%, 95.8%, 93.75%. The developed test instrument showed a positive response with an average of 95.56% in the implementation class. The results of students' mathematical problem solving ability in the very high category were 32.25%, the high category was 22.58%, the moderate category was 12.90%, the less category was 3.22%, and the very poor category was 29.03%. The average higher order mathematical thinking ability of students is 69.04% with sufficient category.

**Keywords:** Test Instruments, Realistic Mathematics Education, Mathematical Problem Solving, ADDIE