

ABSTRAK

**PENGEMBANGAN ALAT PERAGA MISTAR BILANGAN UNTUK
MENINGKATKAN KEAKTIFAN DAN KEMAMPUAN PENJUMLAHAN
1-20 SISWA KELAS I SD**

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Penelitian ini didasarkan dari hasil identifikasi kebutuhan, di mana terdapat kesenjangan antara penggunaan media belajar yang ideal dengan media pengajaran yang sebenarnya diterapkan. Maksud penelitian ini yaitu mengembangkan alat peraga garis bilangan untuk meningkatkan keaktifan dan kemampuan penjumlahan 1-20 siswa kelas I SD, menelaah kualitas alat peraga garis bilangan yang dikembangkan, juga menelisik pengaruh alat peraga garis bilangan terhadap keaktifan dan kemampuan penjumlahan 1-20 siswa kelas I SD.

Penelitian ini mengadopsi metode penelitian *Research and Development*. Penelitian ini melibatkan lima guru kelas I dari SD N 1 Sukaraja Dalam, SDN Bandar Jaya, SDN 1 Pahang Asri, SDN 2 Pahang Asri, serta SD Charitas 03 Tegalsari guna analisis kebutuhan, dan sepuluh validator ahli yang terdiri dari enam guru I SD, 3 guru kelas bawah bersertifikat pendidik, dan satu dosen ahli matematika. Terdapat seratus siswa dari kelima SD tersebut guna menjadi subjek penelitian. Objek penelitian ini ialah alat peraga mistar bilangan, keaktifan siswa, serta kemampuan melakukan operasi penjumlahan pada mata pelajaran matematika tema 1 subtema 4 kelas I. Instrumen yang digunakan yakni wawancara, angket, dan tes.

Hasil penelitian ini alat peraga mistar bilangan dikembangkan dengan mengadopsi tahapan ADDIE. Kualitas alat peraga mistar bilangan memperoleh nilai sebesar 3,69 tercatat dalam kategori “Sangat Baik” dengan anjuran “Tidak perlu diperbaiki”. Perlakuan alat peraga garis bilangan berpengaruh terhadap keaktifan dan kemampuan penjumlahan 1-20 siswa kelas I SD. Hasil uji Wilcoxon test menunjukkan posttest (Mdn = 90,000) lebih tinggi dari pretest (Mdn = 70,000) dengan $z = 6,319$ dan perbedaannya signifikan, $p = 0,000$ ($p < 0,05$). Uji besar pengaruh memperoleh hasil $r = 0,4468$ yang tergolong kategori efek “Menengah” yang setara dengan 20%. Efektivitas pengaplikasian mistar bilangan memperoleh N-gain score sebesar 53,9873% dengan kategori efektivitas “Menengah”. Hasil angket observasi guru terkait keterlibatan siswa dalam KBM memperoleh rerata sebesar 3,347 tergolong dalam kategori “Sangat Baik”. Hasil angket refleksi siswa memperoleh persentase skor rata-rata sebanyak 83,55%.

Kata kunci: mistar bilangan, keaktifan, kemampuan penjumlahan, alat peraga

ABSTRACT**DEVELOPMENT OF NUMBER RULER PROPS TO INCREASE THE LIVELINESS AND ADDITION ABILITY OF 1-20 OF 1TH GRADE STUDENTS OF ELEMENTARY SCHOOL**

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This research is based on the results of identification of needs, where there is a gap between the use of ideal learning media and the teaching media that are actually applied. The purpose of this research is to develop of number ruler props to increase the liveliness and addition ability of 1-20 of 1th grade students of elementary school, examine the quality of the developed number ruler props, and examine the effect of number ruler props on the liveliness and addition ability of 1-20 of 1th grade students of elementary school.

This study adopted the Research and Development research method. This study involved five grade I teachers from SD N 1 Sukaraja Dalam, SDN Bandar Jaya, SDN 1 Pahang Asri, SDN 2 Pahang Asri, and SD Charitas 03 Tegalsari for needs analyze, and ten expert validators consisting of six grade I elementary school teachers, 3 educator-certified lower grade teachers, and one mathematics expert lecturer. There were one hundred students from the five elementary schools to become research subjects. The objects of this study were number ruler props, liveliness, and the ability to carry out addition operations in mathematics subject 1, sub-theme 4 class I. The instruments used were interviews, questionnaires, as well as tests.

The results of this research were developed by adopting the ADDIE stages. The quality of the number rule props obtained a value of 3.69 was recorded in the "Very Good" category with the recommendation "No need to repair". The treatment of number ruler props has an effect on the liveliness and addition ability of 1-20 of 1th grade students of elementary school. The results of the Wilcoxon test showed that the posttest (Mdn = 90.000) was higher than the pretest (Mdn = 70.000) with $z = 6.319$ and the difference was significant, $p = 0.000$ ($p < 0.05$). The effect test obtained the result of $r = 0.4468$ which belongs to the "Medium" effect category which is equivalent to 20%. The effectiveness of the application of the number rule obtained an N-gain score of 53.9873% in the "Medium" effectiveness category. The results of the teacher's observation questionnaire regarding student involvement in teaching and learning activities obtained an average of 3.347 belonging to the "Very Good" category. The results of the student reflection questionnaire obtained an average score percentage of 83.55%.

Keywords: number ruler, liveliness, addition ability, props