

## ABSTRAK

Ratri, Agatha Risky. (2014). *Pengembangan alat peraga matematika untuk operasi bilangan bulat berbasis metode Montessori*. Skripsi. Yogyakarta: Program Studi Pendidikan Guru Sekolah Dasar, Universitas Sanata Dharma.

Kata kunci: penelitian dan pengembangan, metode Montessori, alat peraga, bilangan bulat, Papan Bilangan Bulat

Inovasi pembelajaran sangat diperlukan dalam setiap mata pelajaran yang diajarkan di sekolah. Inovasi pembelajaran dapat dilakukan oleh guru dengan cara menggunakan alat peraga dalam praktek pembelajaran. Salah satu tokoh pendidikan yang sangat peduli terhadap pentingnya penggunaan alat peraga bagi siswa adalah Maria Montessori (1870 – 1952). Montessori mengembangkan alat peraga berdasarkan ciri-ciri: (1) menarik, (2) memiliki gradasi, (3) memiliki pengendali kesalahan, dan (4) dapat membelajarkan siswa secara mandiri. Pada penelitian ini ditambahkan ciri kontekstual.

Penelitian ini bertujuan untuk (1) mengembangkan alat peraga matematika untuk operasi bilangan bulat berbasis metode Montessori, (2) mengetahui kualitas alat peraga yang dikembangkan, dan (3) mengetahui dampak penggunaan alat peraga yang dikembangkan. Jenis penelitian yang digunakan adalah penelitian dan pengembangan. Subjek pada penelitian ini adalah lima (5) siswa kelas IV di SDK Klepu Yogyakarta. Objek pada penelitian ini adalah alat peraga Papan Bilangan Bulat. Prosedur penelitian dan pengembangan alat peraga Montessori melalui lima tahap, yaitu: (1) kajian Standar Kompetensi dan Kompetensi Dasar, (2) analisis kebutuhan, (3) produksi alat peraga, (4) pembuatan instrumen penelitian, dan (5) validasi alat peraga oleh ahli serta melalui uji coba lapangan terbatas.

Hasil penelitian ini menunjukkan bahwa Papan Bilangan Bulat yang dikembangkan memiliki empat ciri-ciri alat peraga Montessori dan satu ciri tambahan (kontekstual). Alat peraga Papan Bilangan Bulat memiliki rerata skor validasi produk 3,5 yang menunjukkan kualitas “sangat baik”. Alat peraga Papan Bilangan Bulat memiliki dampak pada proses dan hasil belajar siswa. Siswa menjadi lebih antusias, lebih aktif, lebih berkonsentrasi, dan dapat belajar secara mandiri selama proses pendampingan. Alat peraga papan bilangan bulat yang dikembangkan mampu meningkatkan hasil belajar siswa sebanyak 71% berdasarkan hasil *pretest* dan *posttest*. ix

**ABSTRACT**

Ratri, Agatha Risky. (2014). *Developing a set of mathematic learning media for integer arithmetic based on Montessori method*. A Thesis. Yogyakarta: Elementary Teacher Education Study Program, Sanata Dharma University.

Keywords: Research and Development, Montessori method, integer arithmetic, *Papan Bilangan Bulat*

An innovation of learning process should be presented on each subject in the school. The innovation of learning process can be done by teacher using the material on the learning process. One of experts of education who cares about the use of material for student is Maria Montessori (1870 – 1952). Montessori developed the learning media based on characteristics: (1) attractive, (2) gradual, (3) auto-correction, and (4) auto-education. In this research, it is added the contextual characteristic.

The purposes of this research are (1) developing the mathematic learning media for arithmetic integer based on Montessori Method, (2) knowing the quality of the material which is developed and (3) knowing the impact of the use of material which is developed. This research applied Research and Development (R and D) method. The subjects of this research were five (5) students in the fourth grade in SDK Klepu Yogyakarta. The object of this research is *Papan Bilangan Bulat* material. The procedures of this research consist of five steps, they were: (1) examining the standard competency, (2) analyzing the teacher's and the students' needs, (3) producing the math Montessori learning media, and (4) developing the research instrument, and (5) validating and revising the material by expert judgment and by the way of preliminary form of the product.

The result of this research is that *Papan Bilangan Bulat* completely has those four characteristics of Montessori learning media and contextual characteristic. *Papan Bilangan Bulat* reaches the average score of validation product up to 3.5. It shows that the quality of the product is "very good". *Papan Bilangan Bulat* material has the impact of the process and students' learning outcome. The students became more enthusiastic, more active, more being focused, and more independent in their learning. The developing *Papan Bilangan Bulat* material can increase the students' learning outcome into 71% based on the results of pretest and posttest.