

ABSTRAK

Wihelmina Freskia Yolanda. 221414051. 2026. Pemanfaatan Tutup Botol pada Pembelajaran Operasi Bilangan Bulat terhadap Kemampuan Berhitung Siswa Kelas VII B SMP Kanisius Kalasan. Skripsi. Program Studi Pendidikan Matematika, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Sanata Dharma. Yogyakarta.

Penelitian ini bertujuan untuk mendeskripsikan kemampuan berhitung awal siswa kelas VII B SMP Kanisius Kalasan dalam menyelesaikan operasi bilangan bulat sebagai gambaran kemampuan sebelum pembelajaran, kemampuan berhitung siswa setelah mengikuti pembelajaran menggunakan benda konkret berupa tutup botol air mineral, serta tanggapan siswa terhadap penggunaan benda konkret dalam pembelajaran operasi bilangan bulat.

Penelitian ini merupakan penelitian deskriptif dengan pendekatan kuantitatif yang didukung data kualitatif. Subjek penelitian terdiri atas 24 siswa kelas VII B SMP Kanisius Kalasan Tahun Ajaran 2025/2026. Data kuantitatif diperoleh melalui pretest dan *posttest* untuk mendeskripsikan kemampuan berhitung siswa sebelum dan sesudah pembelajaran serta angket untuk mengetahui tanggapan siswa. Data kualitatif diperoleh melalui wawancara terhadap empat siswa yang dipilih berdasarkan hasil tes akhir I untuk mengklarifikasi jawaban siswa dan mengidentifikasi kesulitan yang dialami siswa. Data tes dianalisis menggunakan statistik deskriptif, data angket dianalisis menggunakan persentase capaian skor, sedangkan data wawancara dianalisis secara deskriptif kualitatif sebagai pendukung hasil analisis data kuantitatif.

Hasil penelitian menunjukkan bahwa kemampuan berhitung awal siswa memiliki rata-rata nilai sebesar 68, dengan nilai minimum 35 dan nilai maksimum 100. Setelah mengikuti pembelajaran menggunakan benda konkret berupa tutup botol air mineral, rata-rata kemampuan berhitung siswa meningkat menjadi 76, dengan nilai minimum 50 dan nilai maksimum 100. Tanggapan siswa terhadap penggunaan benda konkret termasuk dalam kategori positif dengan persentase capaian skor sebesar 73%, yang menunjukkan bahwa sebagian besar siswa memberikan tanggapan positif terhadap penggunaan benda konkret dalam pembelajaran.

Hasil wawancara mengklarifikasi jawaban siswa pada tes akhir serta menunjukkan bahwa beberapa siswa masih mengalami kesulitan dalam menentukan tanda hasil operasi, membedakan tanda bilangan dengan tanda operasi, serta menyelesaikan operasi penjumlahan dan pengurangan bilangan bulat. Berdasarkan hasil penelitian, pemanfaatan benda konkret berupa tutup botol air mineral memberikan gambaran adanya peningkatan kemampuan berhitung siswa dalam menyelesaikan operasi bilangan bulat serta memperoleh tanggapan positif dari siswa.

Kata kunci: benda konkret, tutup botol air mineral, kemampuan berhitung, operasi bilangan bulat.

ABSTRACT

Wihelmina Freskia Yolanda. 221414051. 2026. *The Use of Bottle Caps in Integer Operations Learning on the Counting Ability of Grade VII B Students at SMP Kanisius Kalasan. Undergraduate Thesis. Mathematics Education Study Program, Faculty of Teacher Training and Education, Sanata Dharma University. Yogyakarta.*

This study aimed to describe the initial skills of Grade VII B students at SMP Kanisius Kalasan in performing integer operations as an overview of their abilities before instruction, to describe their skills in performing integer operations after participating in learning activities using bottle caps as concrete manipulatives, and to describe the students' responses to the use of the concrete manipulatives in learning integer operations. This study employed descriptive research with a quantitative approach supported by qualitative data. The participants were 24 Grade VII B students of SMP Kanisius Kalasan in the 2025/2026 academic year. Quantitative data were collected through a pretest and a posttest to describe the students' skills before and after instruction, as well as a questionnaire to identify the students' responses. Qualitative data were collected through interviews with four students selected based on their posttest results to clarify their responses and identify the difficulties they experienced. The test data were analyzed using descriptive statistics, the questionnaire data were analyzed using percentage scores, and the interview data were analyzed descriptively to support the quantitative findings.

The results showed that the students' initial skills in performing integer operations had a mean score of 68, with a minimum score of 35 and a maximum score of 100. After participating in learning activities using bottle caps as concrete manipulatives, the mean score increased to 76, with a minimum score of 50 and a maximum score of 100. The students' responses to the use of the concrete manipulatives were categorized as positive, with a percentage score of 73%, indicating that most students responded positively to the use of the concrete manipulatives in learning. The interview results revealed that some students still experienced difficulties in determining the signs of operation results, distinguishing number signs from operation signs, and solving integer addition and subtraction problems. Based on the findings, learning activities using bottle caps as concrete manipulatives indicated an improvement in the students' skills in performing integer operations and received positive responses from the students

Keywords: concrete objects, mineral water bottle caps, counting ability, integer operations.