SET A STRUCTURE OF OBJECTS WITH A HELP OF GROUPING TO TEN STRATEGY TO UNDERSTAND THE IDEA OF UNITIZING

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Abstract

The intention of the present study is to know how the pupils can learn to make a group of ten to understand the idea of unitizing. The pupils were given a contextual problem "Counting the Beads" in order to promote their understanding about the idea of unitizing. The process of designing the problem was based on the 5 tenets of Indonesian Realistic Mathematics Education (IRME). The methods of this study was a design research. The researcher designed the Hypothetical Learning Trajectory (HLT) before conducting the lesson in the classroom. The result of this study showed that the pupils learned to make a group of any number then moved to make a group of twenty before using the group of ten as a strategy in finding the amount of the beads. The pupils set a structure of objects with a help of grouping to ten strategy to understand the idea of unitizing.

Keywords: Grouping to ten, IRME, unitizing

Abstrak

Tujuan dari dilaksanakannya penelitian ini adalah untuk mengetahui bagiamana siswa membuat kelompok sepuluhan untuk memahami ide unitizing. Siswa diberikan sebuah soal kontekstual "Menghitung Manik-manik" untuk membantu mereka memahami ide tersebut. Proses perancangan soal tersebut didasarkan pada 5 karakteristik Pendidikan Matematika Realistik Indonesia (PMRI). Metode penelitian yang digunakan adalah design research. Hasil penelitian menunjukkan bahwa siswa awalnya membuat kelompok sembarang lalu membuat kelompok duapuluhan sebelum akhirnya mereka mampu membuat kelompok sepuluhan untuk menghitung banyaknya manik-manik. Strategi yang digunakan ini dapat membantu mereka memahami ide unitizing.

Kata Kunci: Pengelompokan sepuluhan, PMRI, unitizing

Place value is extremely significant in mathematical learning, yet the pupils tend to neither acquire an adequate understanding of place value nor apply their understanding of place value when working with computational algorithms (Fuson, 1990). The understanding about place value is very important in mathematics (Kilpatrick, Swafford, and Findell, 2001). The research of Thompson (2000) suggests that pupils are still able to work successfully with two-digit numbers, including the teens, without being explicitly aware that the first digit stands for the number of tens. Many pupils have no adequate understanding of place value.

It is common in Indonesia that the teacher emphasizes the teaching of procedures instead of considering the development of students' own strategies (Rumiati & Wright, 2010). Freudenthal (1991) stated that in guiding the pupils to grasp the mathematical concept, the delicate balance between the force of teaching and the freedom of learning is needed. Therefore, I designed Counting