

LEARNING ONE-DIGIT DECIMAL NUMBERS BY MEASUREMENT AND GAME PREDICTING LENGTH

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Abstract

This paper aims to describe how students develop understanding of one-digit decimals. To achieve the aim, Local Instruction Theory (LIT) about the process of learning decimals and the means designed to support that learning are developed. Along with this idea, the framework of Realistic Mathematics Education (RME) is proposed. Based on the aim, design research methodology is used. This paper discusses learning activities of three meetings from teaching experiment of the focus group students of the fourth grade elementary school in Surabaya: SDIT Al Ghilmani. The data indicated that the learning activities promoted the students' understanding of one-digit decimal numbers.

Keyword: Measurement, Decimal Numbers, Number Line

Abstrak

Artikel ini bertujuan untuk menggambarkan bagaimana siswa mengembangkan pemahaman desimal satu digit. Untuk mencapai tujuan tersebut, *Local Instruction Theory (LIT)* tentang proses belajar desimal dan sarana yang dirancang untuk mendukung pembelajaran tersebut dikembangkan. Seiring dengan ide ini, teori Pendidikan Matematika Realistik (RME) diusulkan. Berdasarkan tujuan, metodologi penelitian adalah *design research*. Makalah ini membahas tiga pertemuan kegiatan belajar mengajar kelas eksperimen untuk grup fokus kelas 4 SDIT Al Ghilmani, Surabaya. Data menunjukkan bahwa kegiatan pembelajaran mendukung pemahaman siswa mengenai desimal satu digit.

Kata Kunci: Pengukuran, Bilangan Desimal, Garis Bilangan

The concept of decimals is included in the mathematics curriculum, *Kurikulum Tingkat Satuan Pendidikan (KTSP)* of the fifth grade of elementary school in Indonesia, and is considered to be of great significance especially due to its application and use in everyday life (Michaelidou, Gagatsis, & Pantazi, 2004). Also, it is important for students to learn decimals because the decimal concepts support each other learning mathematics topics especially measurements, fractions, proportions, and percentages (van Galen et al., 2008). In brief, decimals are essential in both mathematics topics bonds and its applications.

Nevertheless, studies (Moloney & Stacey, 1997; Asnawati, 1999; Irwin, 2001; Moskal & Magone, 2001; Steinle, 2004; Lai & Tsang, 2009; Pramudiani, 2011; Sengul & Guldbagci, 2012) and field data reported students' weaknesses in decimals. Most common areas of problems in learning decimals are weak understanding of place value and weak notions of the magnitude of decimal numbers.