

INVESTIGATING THE ACT OF DESIGN IN DISCHARGE CONCEPT USING PMRI

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Abstract

The goal of this research is to investigate the act of design in discharge concept using Pendidikan Matematika Realistik Indonesia (PMRI) approach with Lapindo's Mud phenomenon as a context. Design research was chosen as method used in this research that consist of three phases, namely preparing for the experiment, teaching experiment, and retrospective analysis. Based on the result of investigating from findings and the data obtained in this research, it can be concluded that the use of instructional design using PMRI can support students' understanding in learning the concept of discharge. Observing activities Lapindo mud photos, watching videos Lapindo mud, observing miniature discharge of Lapindo mud, volume of water and time of data collection are needed, and finding discharge of Lapindo mud are conducted in this research.

Keywords: discharge, design research, PMRI

Abstrak

Tujuan penelitian ini adalah untuk menginvestigasi pergerakan desain pembelajaran dalam konsep debit menggunakan pendekatan Pendidikan Matematika Realistik Indonesia (PMRI) dengan fenomena Lumpur Lapindo sebagai konteks. Penelitian ini menggunakan metode penelitian *design research* yang terdiri dari tiga tahap yaitu persiapan untuk penelitian (*preparing for the experiment*), *teaching experiment*, dan *retrospective analysis*. Berdasarkan hasil investigasi dari temuan dan data yang diperoleh dalam penelitian ini, dapat disimpulkan bahwa desain pembelajaran debit menggunakan debit Lumpur Lapindo berdasarkan pendekatan PMRI dapat mendukung pemahaman siswa dalam pembelajaran konsep debit. Desain penelitian dilakukan dengan dengan melakukan aktivitas mengamati foto lumpur lapindo, mengamati video lumpur lapindo, mengamati miniatur debit lumpur lapindo, pendataan volum air dan waktu yang diperlukan, dan menemukan debit lumpur lapindo.

Kata kunci: debit, design research, PMRI

Debit is one of the concepts in mathematics that widely applied in everyday life. The real application of the discharge is the construction of embankments of water in reservoirs or rivers in Indonesia (Akuntono, 2013). If the discharge of water from the existing embankments in reservoirs or streams addressed, it can prevent flooding in the rainy season. Therefore, the discharge needs to be introduced to students early on. In Indonesia, students begin to learn about debit since they were in sixth grade of elementary school (SD) (Depdiknas, 2006).

Based on the observation that researchers have done, it is known that many elementary school students who have difficulties to understand the basic concepts of discharge. This is in line with the results of interviews with teachers of mathematics that the learning outcomes of students on the subject of discharge is lower than in other subjects. According to Rahmawati, F. (2011) the difficulty