IndoMS. J.M.E
Vol. 3 No. 2 July 2012, pp. 151-164

Supporting Student's Ability in Understanding Least Common Multiple (LCM) Concept Using Storytelling

Septi Triyani, Ratu Ilma Indra Putri, Darmawijoyo

Abstract

Several researches showed that students had difficulty in understanding the concept of Least Common Multiple (LCM) in Elementary School. This underlies the researcher to design a learning of LCM using storytelling, *Legend Putri Dayang Merindu* (LPDM), which contains situational problem related to LCM. The purposes of this study are to know the role of LPDM in supporting students' ability to understand LCM concept and to generate a student learning trajectory in learning of LCM using LPDM. This research uses methodology of design research consists of three steps (i.e. preliminary design, teaching experiment and retrospective analysis), and the learning approach of realistic mathematic education, labeled by PMRI in Indonesia. From the research result conducted in MIN 1 Palembang can be concluded that the learning of LCM using LPDM has role in supporting students' ability to understand LCM concept. Therefore, student learning trajectory to understanding LCM concept is started from solving of situational problems based on LPDM until formal solution of LCM. In this case, there are three stages that students through (i.e. understanding concept of multiple, common multiple and LCM) using various strategies in the level situational, model of, model for and formal.

Keyword: *Least Common Multiple (LCM), Design Research, PMRI, Storytelling, Legenda Putri Dayang Merindu.*

Abstrak

Beberapa penelitian menunjukkan bahwa siswa mengalami kesulitan dalam memahami konsep Kelipatan Persekutuan Terkecil (KPK) di Sekolah Dasar (SD). Hal ini yang mendasari peneliti mendesain pembelajaran KPK menggunakan cerita, *Legenda Putri Dayang Merindu* (LPDM), yang didalamnya terdapat permasalahan situasional terkait KPK. Untuk itu, Tujuan dari penelitian ini adalah untuk mengetahui peranan LPDM dalam mendukung kemampuan siswa untuk memahami konsep KPK melalui strategi yang mereka gunakan; dan menghasilkan lintasan belajar pada pembelajaran KPK menggunakan LPDM. Pada penelitian ini digunakan metodologi desain riset yang terdiri dari tiga tahapan (yaitu *preliminary design, teaching experiment* dan *retrospective analysis*, dan pendekatan pembelajaran Pendidikan Matematika Indonesia (PMRI). Dari hasil penelitian yang telah dilaksanakan di MIN 1 Palembang, dapat disimpulkan bahwa pembelajaran KPK dengan menggunakan LPDM memiliki peranan dalam mendukung kemampuan siswa untuk memahami konsep KPK. Selanjutnya, lintasan belajar siswa untuk pemahaman konsep KPK berawal dari penyelesaian permasalahan situasional pada LPDM hingga

penyelesaian formal KPK. Dalam hal ini terdapat tiga tahapan yang dilalui siswa (yaitu pemahaman konsep kelipatan, kelipatan persekutuan, dan KPK) dengan beragam strategi baik pada tahap situasional, *model of, model for* dan formal.

Kata Kunci: *Kelipatan Persekutuan Terkecil (KPK), Desain Riset, PMRI, Cerita, Legenda Putri Dayang Merindu*

Introduction

Student's difficulty in understanding the concept of Least Common Multiple (LCM) and in solving problems related to that concept are showed by some researches that its difficulty as the implication of teaching learning of LCM taught in the formal level directly using procedural and manipulative ways (Orhun, 2002; Dias, 2005; and Camli&Bintas, 2009). Hence, efforts to support student's ability in understanding of LCM concept are needed in order the successful study of student. This can be done through learning activity based on student's previous knowledge and experience. Mentioned in Gravemeijer (1994), mathematics is not only material transferred by teacher to students. In this case, student should be given chance and be guided into situation to reinvent mathematics concepts using their own way. One of mathematics learning methods oriented in mathematizing of daily experience is Realistic Mathematics Education (RME), which in Indonesia it is known as *Pendidikan Matematika Realistik Indonesia* (PMRI). RME ideas came from Fruedental which emphasizes mathematic as human activity (Heuvel-Panhuizen, 1996). Human activity related to the real life which the term of "real" is not only mean as fact can be seen, but also as situations that is experientially real or gives meaning for students.

These issues underlie this research in designing of instructional activities for LCM concept. Using methodology of design research and PMRI approach, the researcher involves Indonesian storytelling, the legend of Putri Dayang Merindu. This research is conducted in grade forth elementary school (MIN 1 Palembang, Indonesia), which according to Indonesian curriculum, in that grade student start to learn LCM and it is continued in the grade fifth and sixth elementary school. In teaching learning of LCM using storytelling, the story used in this study is a story containing mathematics aspect besides moral value to grow positive characters of students. Therefore, *Legenda Putri Dayang Merindu* which contain contextual problem related to LCM was used in this study as starting point in learning and those problem was developed according to