

WHY ARE THEIR MATHEMATICAL LEARNING ACHIEVEMENTS DIFFERENT? RE- ANALYSIS TIMSS 2015 DATA IN INDONESIA, JAPAN AND TURKEY

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Abstract

This study aims to describe students' mathematics achievement influencing factors in Indonesia, Japan, and Turkey at the student level and by school level with the use of TIMSS data 2015. The sample used in this study is the fourth grade of elementary school students from 3 countries participating in TIMSS 2015, namely Indonesia (N=3967), Japan (N=4307), and Turkey (N=5974). The findings indicated that there is no dissimilarity in mathematics learning achievement among students in Indonesia, Japan, and Turkey. The students' self-concept of mathematics proved itself a significant factor influencing their learning achievement across Indonesia, Japan and Turkey, while school climate factors only significantly affects the students' mathematics learning achievement in Indonesia and Turkey. The results also show the benefit of students mathematics self-concept to be formed or inculcated early (before elementary school) through positive school climate, because both have a positive contribution on student learning achievement in mathematics. In general, it can be concluded that the affective characteristics (student mathematics self-concept) and independent factors by the level of school (school climate) can only explain a small variance of achievement of student in learning mathematics.

Keywords: Mathematics, TIMSS, Multilevel Linear Model (MLM).