

ASSESSING SEVENTH GRADERS' MATHEMATICAL LITERACY IN SOLVING PISA-LIKE TASKS

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Abstract

This design research type development study aims at producing a set of PISA-like mathematics task which is valid and practical as well as has the potential effects. Then, activation of fundamental mathematical capabilities underlying mathematical process related to the mathematical literacy as the main potential effect of the developed PISA-like tasks would be the focus on this paper. The subject of this study were 28 seven graders of SMP Negeri 1 Palembang involved in field test. Data collecting techniques used were students' test result and interviews. Overall findings indicate that 10 items of PISA-like mathematics task developed potentially promote students' mathematical literacy within three mathematical processes. The result also shows that the highest percentage of students' achievement was on the interpreting tasks (52.55%). While achievement for employ and formulate tasks were 40.74% and 39.63% respectively.

Keywords: PISA-like problems, mathematical literacy, mathematical process, fundamental mathematical capabilities

Abstrak

Penelitian desain riset tipe pengembangan ini bertujuan untuk menghasilkan seperangkat soal matematika model PISA yang valid dan praktis. Selanjutnya, aktivasi kemampuan dasar matematika dalam proses literasi matematis sebagai efek potensial utama dari soal yang dikembangkan merupakan fokus utama dari paper ini. Subjek penelitian adalah 28 siswa kelas VII SMP Negeri 1 Palembang yang terlibat dalam *field test*. Data yang dikumpulkan berupa hasil tes dan wawancara. Hasil penelitian secara umum mengindikasikan 10 butir soal model PISA yang dikembangkan berpotensi mampu meningkatkan kemampuan literasi matematis siswa melalui 3 proses matematika. Selanjutnya, rata-rata pencapaian siswa tertinggi terjadi pada soal dengan kategori menafsirkan (39,63%). Sedangkan untuk dua kategori lainnya, menerapkan dan merumuskan adalah sebanyak 40,74% and 52,55% secara berturut-turut.

Kata kunci: soal model PISA, melek matematika, proses matematis, kemampuan dasar Matematis

Programme for International Student Assessment (PISA) is a large-scale assessment conducted every three years which is coordinated by Organization for Economic Co-operation and Development/OECD (OECD, 2013). This international study is regularly administered to examine how well 15-years-old students are prepared at school to apply their knowledge, including mathematics, to analyse and solve problems in a variety of real-world situations (OECD, 2013; Stacey, 2011).

Mathematical literacy, one of focuses of PISA study, refers to an individual's capability to formulate, employ, and interpret mathematics in a variety of real-life situations which assists individuals to recognise roles that mathematics plays in the real world (OECD, 2013) and prepares