

ABSTRAK

Kemampuan literasi matematika siswa di Indonesia tergolong masih rendah. Kondisi ini diperparah oleh pembelajaran harian yang cenderung berfokus pada penyelesaian soal rutin, sehingga siswa kurang terbiasa menghadapi soal kontekstual nonrutin seperti pada framework PISA. Meskipun penelitian pengembangan soal PISA secara akademis telah banyak dilakukan di Indonesia, soal-soal tersebut masih sulit diakses oleh guru dan siswa di satuan pendidikan. Penelitian ini bertujuan untuk: (1) mengembangkan instrumen soal literasi matematika berbasis framework PISA untuk siswa kelas IX SMP, dan (2) mengetahui kualitas soal yang dikembangkan berdasarkan hasil uji coba.

Penelitian ini merupakan penelitian pengembangan dengan model ADDIE (Analisis, Desain, *Development*, Implementasi, dan Evaluasi). Data diperoleh melalui wawancara, angket, validasi ahli, dan hasil pengerjaan siswa. Kualitas soal diukur berdasarkan validitas oleh guru dan ahli, reliabilitas menggunakan *Cronbach's Alpha*, uji tingkat kesukaran dan daya pembeda, serta angket kepraktisan.

Proses pengembangan diawali dengan tahap analisis kebutuhan yang menunjukkan bahwa siswa masih mengalami kesulitan dalam memahami soal kontekstual dan belum terbiasa dengan soal berbasis *framework* PISA. Guru tidak memiliki instrumen soal berbasis *framework* PISA. Berdasarkan hasil tersebut, dilakukan perancangan dan pengembangan butir soal yang disesuaikan dengan karakteristik siswa dan konteks kehidupan nyata. Proses ini diakhiri dengan uji coba (implementasi) untuk melihat keterpahaman dan kualitas soal yang dikembangkan.

Kualitas soal yang dikembangkan memenuhi kriteria kelayakan, ditinjau dari aspek validitas, reliabilitas, tingkat kesukaran, daya pembeda, dan kepraktisan. Instrumen dinyatakan valid, memiliki kepraktisan sebesar 68,31% (kategori cukup praktis), serta reliabel. Selain itu, tingkat kesukaran soal bervariasi dengan dominasi kategori sedang dan daya pembeda tergolong cukup hingga baik. Soal masih perlu diperbaiki terkait kejelasan bahasa. Beberapa siswa masih mengalami kesulitan dalam memahami soal yang diberikan. Secara umum, soal yang telah dikembangkan layak digunakan untuk mengukur kemampuan literasi matematika siswa sesuai dengan *framework* PISA.

Kata kunci: literasi matematika, *framework* PISA, penelitian pengembangan, ADDIE

ABSTRACT

The mathematical literacy ability of students in Indonesia is still relatively low. This condition is exacerbated by daily classroom practices that tend to focus on solving routine problems, resulting in students being less familiar with contextual and non-routine problems such as those found in the PISA framework. Although many studies on the development of PISA-based mathematics problems have been conducted academically in Indonesia, these problems remain difficult for teachers and students in schools to access. This study aims to: (1) develop a mathematical literacy test instrument based on the PISA framework for ninth-grade junior high school students, and (2) determine the quality of the developed instrument based on the results of field testing.

This study employed a research and development method using the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation). Data were collected through interviews, questionnaires, expert validation, and students' work results. The quality of the instrument was assessed based on validity by teachers and experts, reliability using Cronbach's Alpha, item difficulty and discrimination indices, and practicality through student response questionnaires.

The development process began with a needs analysis, which revealed that students had difficulties in understanding contextual problems and were not familiar with PISA-based tasks, while teachers lacked appropriate instruments. Based on these findings, the items were designed and developed in accordance with students' characteristics and real-life contexts. The process concluded with a limited trial (implementation) to evaluate the clarity and quality of the developed instrument.

The developed instrument met the feasibility criteria in terms of validity, reliability, item difficulty, discrimination index, and practicality. The instrument was found to be valid, had a practicality level of 68.31% (fairly practical), and showed reliability. The items had varied difficulty levels with a dominance of moderate difficulty and acceptable to good discrimination indices. However, some items still require improvement, particularly in terms of language clarity, as some students experienced difficulties in understanding the questions. Overall, the instrument is appropriate for measuring students' mathematical literacy in accordance with the PISA framework.

Keywords: *mathematical literacy, PISA framework, research and development, ADDIE model*