

## ABSTRAK

### **PENGEMBANGAN LEMBAR KERJA PESERTA DIDIK MATEMATIKA BERBASIS *PROBLEM BASED LEARNING* TERINTEGRASI *LIVEWORKSHEET* UNTUK MENINGKATKAN KEMAMPUAN BERPIKIR MATEMATIS DI MTs**

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Rendahnya kemampuan berpikir matematis peserta didik yang ditunjukkan oleh hasil PISA serta pembelajaran matematika yang belum menggunakan LKPD yang dibuat oleh guru menjadi dasar perlunya inovasi bahan ajar berbasis teknologi. Penelitian ini bertujuan untuk mengembangkan LKPD matematika berbasis *Problem Based Learning* (PBL) yang terintegrasi dengan *liveworksheet* serta menganalisis kevalidan, kepraktisan, dan keefektifannya dalam meningkatkan kemampuan berpikir matematis peserta didik. Metode penelitian yang digunakan adalah *Research and Development* (R&D) dengan model Borg and Gall. Subjek penelitian terdiri dari 30 peserta didik untuk uji efektivitas dan 15 peserta didik untuk uji respon. Teknik pengumpulan data dengan observasi, wawancara, angket, *pretest* dan *posttest*. Hasil penelitian menunjukkan bahwa LKPD yang dikembangkan sangat layak dengan persentase validasi ahli materi sebesar 88% dan ahli media sebesar 95%. Respon peserta didik terhadap LKPD memperoleh rata-rata persentase sebesar 91,1% dengan kategori sangat praktis. Keefektifan LKPD ditunjukkan oleh nilai rata-rata N-Gain sebesar 0,6136 atau 61,36% dengan kategori sedang, serta adanya peningkatan hasil belajar dari nilai rata-rata *pretest* sebesar 61,3 menjadi 84,87 pada *posttest*. Implikasi penelitian ini menunjukkan bahwa LKPD berbasis PBL terintegrasi *liveworksheet* efektif digunakan sebagai bahan ajar inovatif untuk meningkatkan kemampuan berpikir matematis.

**Kata Kunci** : Kemampuan Berpikir Matematis, *Liveworksheet*, LKPD, *Problem Based Learning*, Pengembangan Pembelajaran.

## ABSTRACT

### DEVELOPMENT OF MATHEMATICS STUDENT WORKSHEETS BASED ON PROBLEM BASED LEARNING INTEGRATED WITH LIVEWORKSHEET TO IMPROVE MATHEMATICAL THINKING SKILLS IN ISLAMIC JUNIOR HIGH SCHOOL (MTs)

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The low mathematical thinking ability of students as shown by the PISA results as well as mathematics learning that has not used LKPD made by teachers is the basis for the need for technology-based instructional innovation. This study aims to develop mathematics Student Worksheets (LKPD) based on Problem Based Learning (PBL) integrated with Liveworksheet and to analyze their validity, practicality, and effectiveness in improving students' mathematical thinking skills. The research method used is Research and Development (R&D) with the Borg and Gall model. The research subjects consisted of 30 students for the effectiveness test and 15 students for the response test. Data collection techniques included expert validation questionnaires, student response questionnaires, and pretest and posttest assessments. The results showed that the developed LKPD was highly feasible, with a validity percentage of 88% from material experts and 95% from media experts. Student responses toward the LKPD obtained an average percentage of 91.1%, categorized as very positive. The effectiveness of the LKPD is indicated by an average N-Gain score of 0.6136 or 61.36%, which is in the medium category, as well as an improvement in learning outcomes from an average pretest score of 61.3 to 84.87 in the posttest. The implications of this study show that PBL-based LKPD integrated with Liveworksheet is effective as an innovative teaching material to improve students' mathematical thinking skills.

**Keywords:** Mathematical Thinking Skills, Liveworksheet, Student Worksheets (LKPD), Problem Based Learning, Learning Development.