

ABSTRAK

PENGEMBANGAN LKPD BERBASIS *AUGMENTED REALITY* DENGAN PENDEKATAN KONTEKSTUAL UNTUK MENINGKATKAN PEMAHAMAN KONSEP MATEMATIKA SISWA

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Penelitian pengembangan ini bertujuan untuk menghasilkan LKPD berbasis AR dengan pendekatan kontekstual yang memenuhi kriteria valid, praktis, dan efektif guna meningkatkan kemampuan pemahaman konsep matematika siswa. LKPD ini dikembangkan dengan mengintegrasikan pendekatan kontekstual yang menghubungkan materi matematika dengan situasi dunia nyata melalui bantuan visualisasi objek 3D secara digital. Penelitian ini menggunakan metode *Research and Development* (R&D) dengan model pengembangan ADDIE (*Analysis, Design, Development, Implementation, Evaluation*). Rancangan penelitian menggunakan *pretest-posttest experimental control group design*. Teknik pengumpulan data meliputi validasi ahli, angket respons, dan tes kemampuan pemahaman konsep. Berdasarkan analisis kevalidan, LKPD berbasis AR memenuhi kriteria valid dengan perolehan skor ahli materi sebesar 0,84 dan ahli media sebesar 0,80. Berdasarkan analisis kepraktisan, media ini memenuhi kriteria praktis dengan skor respons siswa sebesar 0,817 dan respons guru sebesar 0,90. Berdasarkan analisis keefektifan, hasil uji t menunjukkan nilai Sig. < 0,05, yang berarti terdapat perbedaan rata-rata peningkatan kemampuan akhir (*posttest*) yang signifikan antara kelas yang menggunakan LKPD berbasis AR dengan kelas yang tidak menggunakan LKPD berbasis AR. Dengan demikian, pengembangan LKPD berbasis AR dengan pendekatan kontekstual ini memenuhi kriteria valid, praktis, dan efektif dalam meningkatkan pemahaman konsep matematika siswa.

Kata Kunci: *Augmented Reality*, Kontekstual, LKPD, Pemahaman Konsep.

ABSTRACT

DEVELOPMENT OF AR-BASED STUDENT WORKSHEETS (LKPD) WITH A CONTEXTUAL APPROACH TO IMPROVE STUDENTS' MATHEMATICAL CONCEPT UNDERSTANDING

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This development research aims to produce an AR-based student worksheet employing a contextual approach that fulfills the criteria of validity, practicality, and effectiveness to enhance students' understanding of mathematical concepts. This student worksheets was developed by integrating a contextual approach that connects mathematical material with real-world situations through the assistance of digital 3D object visualization. This study utilizes the Research and Development (R&D) method with the ADDIE development model (Analysis, Design, Development, Implementation, Evaluation). The research design employed a pretest-posttest experimental control group design. Data collection techniques included expert validation, response questionnaires, and concept understanding ability tests. Based on the validity analysis, the AR-based LKPD met the valid criteria with a material expert score of 0.84 and a media expert score of 0.80. Based on the practicality analysis, the media met the practicality criterion, with a student response score of 0.817 and a teacher response score of 0.90. Based on the effectiveness analysis, the results of the t-test indicated a significance value of $\text{Sig.} < 0.05$, demonstrating a statistically significant difference in the mean posttest improvement between the class that used the AR-based student worksheet and the class that did not use the AR-based student worksheet. Thus, the development of AR-based LKPD with a contextual approach meets the criteria of being valid, practical, and effective in improving students' mathematical concept understanding.

Keywords: Augmented Reality, Contextual Approach, Concept Understanding, LKPD.