

ABSTRAK

IMPLEMENTASI *AUGMENTED REALITY* BERBASIS *MARKERLESS* DALAM PEMBELAJARAN DESAIN GRAFIS

Oleh

ARZELA AULIA

Penggunaan media pembelajaran inovatif seperti *Augmented Reality* (AR) berbasis *markerless* semakin relevan dalam pendidikan vokasi yang menekankan keterampilan praktik dan kemampuan visual, khususnya pada mata pelajaran Desain Grafis. Penelitian ini bertujuan untuk menganalisis efektivitas implementasi AR berbasis *markerless* yang diintegrasikan dengan model *Project Based Learning* (PjBL) dalam meningkatkan hasil belajar kognitif dan keterampilan psikomotorik siswa pada materi *Design Brief*. Penelitian ini menggunakan metode eksperimen kuantitatif dengan desain *one group pretest posttest*. Subjek penelitian terdiri atas 30 siswa kelas XI Desain Komunikasi Visual (DKV) di SMK Tri Sukses Lampung Selatan. Instrumen penelitian meliputi tes kognitif berupa 20 soal pilihan ganda serta instrumen observasi psikomotorik yang dinilai melalui rubrik berdasarkan aspek persiapan kerja, proses, hasil kerja, sikap kerja, dan waktu. Data kognitif dianalisis menggunakan uji Wilcoxon Signed Rank Test dan uji N-Gain, sedangkan data psikomotorik dianalisis secara deskriptif kuantitatif. Hasil penelitian menunjukkan adanya peningkatan signifikan pada hasil belajar kognitif siswa, ditunjukkan oleh nilai rata-rata *pretest* sebesar 55,00 dan *posttest* sebesar 91,00 dengan nilai N-Gain sebesar 0,86 yang termasuk kategori tinggi. Pada aspek psikomotorik, sebanyak 50% siswa berada pada kategori sangat baik dan 46,67% pada kategori baik. Hasil ini menunjukkan bahwa implementasi AR *markerless* dalam pembelajaran berbasis proyek efektif dalam meningkatkan pemahaman konsep serta keterampilan praktik siswa, sekaligus mendukung ketercapaian Capaian Pembelajaran (CP) Fase E Kurikulum Merdeka pada mata pelajaran Desain Grafis.

Kata Kunci: *Augmented Reality*, Desain Grafis, Hasil Belajar, *Markerless*, *Project Based Learning*

ABSTRACT

IMPLEMENTATION OF MARKERLESS AUGMENTATION REALITY IN GRAPHIC DESIGN LEARNING

By

ARZELA AULIA

The use of innovative learning media such as markerless Augmented Reality (AR) has become increasingly relevant in vocational education, which emphasizes practical skills and strong visual abilities, particularly in Graphic Design subjects. This study aims to analyze the effectiveness of implementing markerless AR integrated with the Project Based Learning (PjBL) model in improving students' cognitive learning outcomes and psychomotor skills in Design Brief material. This research employed a quantitative experimental method using a one group pretest posttest design. The research subjects consisted of 30 students from class XI of the Visual Communication Design (DKV) program at SMK Tri Sukses, South Lampung. The research instruments included a cognitive test consisting of 20 multiple choice questions and a psychomotor observation instrument assessed using a rubric covering work preparation, process, work results, work attitude, and time management aspects. Cognitive data were analyzed using the Wilcoxon Signed Rank Test and N-Gain analysis, while psychomotor data were analyzed using descriptive quantitative techniques. The results showed a significant improvement in students' cognitive learning outcomes, indicated by an increase in the average pretest score from 55.00 to a posttest score of 91.00, with an N-Gain value of 0.86 classified as high. In terms of psychomotor skills, 50% of students were categorized as very good and 46.67% as good. These findings indicate that the implementation of markerless AR in project based learning is effective in enhancing students' conceptual understanding and practical skills, as well as supporting the achievement of Phase E Learning Outcomes of the Merdeka Curriculum in Graphic Design subjects.

Keywords: *Augmented Reality, Graphic Design, Learning Outcomes, Markerless, Project Based Learning*