ABSTRAK

PENGARUH MODEL *PROJECT BASED LEARNING* TERINTEGRASI STEM BERKONTEKS ETNOSAINS TERHADAP KEMAMPUAN BERPIKIR KREATIF PESERTA DIDIK PADA MATERI BIOTEKNOLOGI

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Penelitian ini bertujuan mengetahui pengaruh model *Project Based Learning* terintegrasi STEM berkonteks etnosains terhadap kemampuan berpikir kreatif peserta didik pada materi bioteknologi serta mengetahui tanggapan peserta didik terhadap pembelajaran yang diterapkan. Penelitian menggunakan desain *quasi experiment* dengan bentuk *pretest-posttest non-equivalent control group design*. Populasi penelitian adalah peserta didik kelas IX SMP tahun ajaran 2025/2026. Sampel penelitian terdiri atas kelas IX.7 sebagai kelas eksperimen berjumlah 29 peserta didik dan kelas IX.6 sebagai kelas kontrol berjumlah 29 peserta didik yang dipilih menggunakan teknik *purposive sampling*. Instrumen penelitian meliputi soal *pretest-posttest* kemampuan berpikir kreatif, lembar penilaian produk kreatif, dan angket tanggapan peserta didik. Analisis data kuantitatif menggunakan uji normalitas, homogenitas, *independent sample t-test*, *N-gain*, dan *effect size*, sedangkan data kualitatif dianalisis secara deskriptif. Hasil penelitian menunjukkan bahwa model *Project Based Learning* terintegrasi STEM berkonteks etnosains berpengaruh signifikan terhadap kemampuan berpikir kreatif peserta didik dengan nilai Sig. (2-tailed) 0,01 < 0,05. Rata-rata *N-gain* kelas eksperimen sebesar 0,57 lebih tinggi dibandingkan kelas kontrol sebesar 0,29 dengan kategori sedang. Nilai *effect size* sebesar 1,49 termasuk kategori besar. Penilaian produk kreatif memperoleh persentase 92,59% dan angket tanggapan peserta didik sebesar 87,6% dengan kategori sangat baik. Dengan demikian, model *Project Based Learning* terintegrasi STEM berkonteks etnosains efektif meningkatkan kemampuan berpikir kreatif peserta didik pada materi bioteknologi.

Kata kunci: Bioteknologi, Etnosains, Kemampuan Berpikir Kreatif, *Project Based Learning*, STEM

ABSTRACT

THE EFFECT OF THE STEM-INTEGRATED PROJECT BASED LEARNING MODEL WITH AN ETHNOSCIENCE CONTEXT ON STUDENTS' CREATIVE THINKING ABILITY IN BIOTECHNOLOGY MATERIAL

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This study aimed to determine the effect of the STEM-integrated Project Based Learning model with an ethnoscience context on students' creative thinking ability in biotechnology material and to identify students' responses toward the implemented learning model. This study employed a quasi-experimental design with a pretest posttest non-equivalent control group design. The population consisted of ninth-grade junior high school students in the 2025/2026 academic year. The research sample consisted of class IX.7 as the experimental class with 29 students and class IX.6 as the control class with 29 students selected using purposive sampling technique. Research instruments included pretest-posttest questions on creative thinking skills, creative product assessment sheets, and student response questionnaires. Kuantitatif data were analyzed using an normality test, homogeneity, independent sample t-test, N-gain, and effect size analysis, while qualitative data were analyzed descriptively. The results showed that the STEM-integrated Project Based Learning model with an ethnoscience context significantly affected students' creative thinking skills with a Sig. (2-tailed) value of 0,01 < 0,05. The average N-gain score of the experimental class was 0,57, higher than the control class score of 0,29 in the moderate category. The effect size value of 1,49 was categorized as large. Creative product assessment reached 92,59% and student questionnaire responses reached 87,6%, categorized as very good. Therefore, the STEM-integrated Project Based Learning model with an ethnoscience context effectively improves students' creative thinking ability in biotechnology material.

Keywords: *Biotechnology, Creative Thinking Skills, Ethnoscience, Project Based Learning, STEM*