

ABSTRAK

Juniandra, R. 2025. Pengaruh Model Pembelajaran *Problem Based Learning* Terhadap Kemampuan Berpikir Kritis dan Pemecahan Masalah pada Fase D Materi Struktur dan Fungsi Tumbuhan. Tesis. Program Magister Pendidikan IPA Universitas Jambi, Pembimbing I. Dr. Afreni Hamidah, S.Pt., M.Si. II. Dr. Dra. Evita Anggereini, M.Si.

Pendidikan abad ke-21 menuntut kemampuan berpikir kritis dan pemecahan masalah (keterampilan 4C) yang optimal, namun observasi awal di SMP N 7 Muaro Jambi menunjukkan kedua kemampuan siswa belum berkembang. Oleh karena itu, penelitian ini bertujuan menguji pengaruh model *problem-based learning* (PBL) terhadap kemampuan tersebut. Menggunakan pendekatan kuantitatif dengan metode kuasi eksperimen (*non-equivalent pretest-posttest control group design*), penelitian melibatkan 64 siswa SMP N 7 Muaro Jambi yang dipilih melalui purposive sampling, dibagi menjadi kelas eksperimen (VIII-A) dan kontrol (IX-A). Kemampuan berpikir kritis diukur dengan tes esai berindikator FRISCO, sementara pemecahan masalah diukur berdasarkan indikator Rosy & Pahlevi (2015). Analisis data menggunakan uji MANCOVA. Hasil analisis MANCOVA menunjukkan bahwa penerapan model pembelajaran *problem based learning* secara signifikan meningkatkan kemampuan berpikir kritis peserta didik [$F=13,047$, $\text{sig}=0,000$], $\eta^2 = 0,201$], dan kemampuan pemecahan masalah peserta didik [$F=43,368$, $\text{sig}=0,000$, $\eta^2 = 0,455$]. dengan kategori sangat berpengaruh. Peningkatan ini dipengaruhi oleh proses pembelajaran yang memfokuskan pada aktivitas diskusi, pemecahan masalah, serta eksplorasi mendalam di kelas. Penelitian ini menyimpulkan bahwa model *problem based learning* berpengaruh terhadap kemampuan berpikir kritis dan pemecahan masalah peserta didik. Namun, beberapa tantangan dalam adaptasi model ini, seperti kesiapan belajar mandiri siswa dan menyiapkan berbagai kegiatan yang sesuai dengan konten yang menarik dan menyenangkan untuk penerapan yang lebih optimal.

Kata Kunci: Model *problem based learning*, kemampuan berfikir kritis, kemampuan pemecahan masalah

ABSTRACT

Juniandra, R. 2025. The Effect of Problem Based Learning Model on Critical Thinking and Problem Solving Skills in Phase D of Plant Structure and Function Material. Thesis. Master of Science Education Program, Jambi University, Supervisor I. Dr. Afreni Hamidah, S.Pt., M.Si. II. Dr. Dra. Evita Anggereini, M.Si.

21st century education demands optimal critical thinking and problem solving skills (4C skills), but initial observations at SMP N 7 Muaro Jambi showed that both of these abilities have not developed. Therefore, this study aims to test the effect of the problem-based learning (PBL) model on these abilities. Using a quantitative approach with a quasi-experimental method (non-equivalent pretest-posttest control group design), the study involved 64 students of SMP N 7 Muaro Jambi who were selected through purposive sampling, divided into experimental (VIII-A) and control (IX-A) classes. Critical thinking skills were measured by an essay test with FRISCO indicators, while problem solving was measured based on Rosy & Pahlevi (2015) indicators. Data analysis used the MANCOVA test. The results of the MANCOVA analysis showed that the application of the problem based learning model significantly improved students' critical thinking skills [$F = 13.047$, $\text{sig} = 0.000$], $\eta^2 = 0.201$], and students' problem-solving skills $F = 43.368$, $\text{sig} = 0.000$, $\eta^2 = 0.455$], with a very influential category. This increase was influenced by the learning process that focused on discussion activities, problem solving, and in-depth exploration in class. This study concluded that the Problem Based Learning model had an effect on students' critical thinking and problem-solving skills. However, there are several challenges in adapting this model, such as students' readiness for independent learning and preparing various activities that are in accordance with interesting and enjoyable content for more optimal implementation.

Keywords: *Problem based learning model, critical thinking skills, problem-solving skills*