

**PENGARUH PENERAPAN *MULTIPLE REPRESENTATION* TERINTEGRASI
LEARNING CYCLE TERHADAP HASIL BELAJAR DAN MOTIVASI SISWA
SMA PADA MATERI SISTEM SARAF**



TESIS

diajukan untuk memenuhi sebagian syarat untuk memperoleh gelar Magister
Pendidikan Biologi

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2025

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Mia Angriana Juniarti

S.Pd. Universitas Negeri Malang, 2022

Sebuah Tesis yang diajukan untuk memenuhi salah satu syarat memperoleh gelar
Magiste Pendidikan (M.Pd.) pada Program Studi Magister Pendidikan Biologi
Fakultas Pendidikan Matematika dan Ilmu Pengetahuan Alam

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TERINTEGRASI *LEARNING CYCLE* TERHADAP HASIL BELAJAR DAN
MOTIVASI SISWA SMA PADA MATERI SISTEM SARAF**

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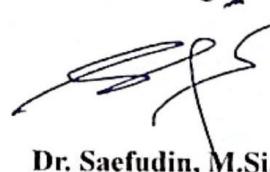


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KATA PENGANTAR

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Bandung, Agustus 2025

Mia Angriana Juniarti

Penulis

**Pengaruh Penerapan *Multiple Representation* Terintegrasi *Learning Cycle*
terhadap Hasil Belajar dan Motivasi Siswa SMA
pada Materi Sistem Saraf**

ABSTRAK

Pembelajaran biologi di sekolah belum sepenuhnya melatih penguasaan konsep dan keterampilan representasi. Penelitian ini bertujuan untuk memperoleh informasi mengenai bagaimana pengaruh penerapan *multiple representation* terintegrasi *learning cycle* terhadap hasil belajar yang difokuskan pada penguasaan konsep dan keterampilan representasi, serta motivasi belajar siswa pada materi sistem saraf. Desain penelitian ini adalah *non-equivalent control group pre-test and post-test* dengan subjek penelitian merupakan siswa kelas XI yang terdiri dari kelompok eksperimen dengan penerapan *multiple representation* terintegrasi *learning cycle* 5E dan kontrol dengan penerapan bentuk visual terintegrasi *learning cycle* 5E. Instrumen yang digunakan untuk mengukur hasil belajar adalah soal tes penguasaan konsep dan keterampilan representasi, serta angket *self-assessment* motivasi belajar. Analisis data yang digunakan dalam penelitian meliputi uji prasyarat, uji hipotesis, besaran efek, ketuntasan KKM, dan analisis nilai rata-rata *normalized gain*. Hasil penelitian menunjukkan bahwa intervensi pembelajaran terlaksana dengan baik, teramat dari aktivitas siswa yang aktif dan keterlibatan dalam representasi visual serta sosial. Pembelajaran berkontribusi positif terhadap hasil belajar, meskipun tidak terdapat perbedaan signifikan secara statistik dengan besaran efek lemah. Penguasaan konsep eksperimen memperoleh persentase ketuntasan KKM (88,89%) sedangkan kontrol (83,33%). Keterampilan representasi eksperimen memperoleh persentase ketuntasan KKM (27,78%) sedangkan kontrol (25%) dengan peningkatan sedang di antara kedua kelompok. Sementara itu, hasil uji hipotesis motivasi belajar menunjukkan nilai signifikansi sebesar $0,038 < 0,05$ yang mengindikasikan bahwa terdapat pengaruh intervensi terhadap motivasi belajar siswa, meskipun besaran efek yang diperoleh lemah. Berdasarkan hasil dari penelitian ini dapat disimpulkan bahwa terdapat pengaruh penerapan *multiple representation* terhadap hasil belajar, khususnya pada penguasaan konsep siswa dengan capaian keterampilan representasi sedang, dan motivasi belajar intrinsik siswa pada materi sistem saraf.

Kata Kunci: *Multiple Representation*, *Learning Cycle* 5E, Hasil Belajar, Motivasi Belajar, dan Materi Sistem Saraf

The Effect of Implementation Multiple Representation Integrated Learning Cycle on Learning Outcomes and Motivation of High School Students on Nervous System Material

ABSTRACT

Learning biology in school does not fully train students in mastering concepts and representation skills. This study aims to obtain information on how the implementation of multiple representation integrated learning cycle affects learning outcomes focused on mastery of concepts and representation skills, as well as student learning motivation in nervous system material. The research design was a non-equivalent control group pre-test and post-test, with the research subjects being 11th grade students divided into an experimental group using the integrated multiple representation learning cycle 5E and a control group using the integrated visual form of the learning cycle 5E. The instruments used to measure learning outcomes were concept mastery and representation skill tests, as well as a self-assessment questionnaire on learning motivation. The data analysis used in this study included prerequisite tests, hypothesis testing, effect size, KKM completeness, and normalized gain mean value analysis. Results indicate that the learning intervention was implemented effectively, as evidenced by students' active participation and engagement in visual and social representations. Learning positively contributed to learning outcomes, although no statistically significant differences were observed with a weak effect size. Experimental concept mastery achieved a KKM completion rate (88.89%), while the control group (83.33%). The experimental group's representation skills achieved a KKM completion rate (27.78%), while the control group (25%), with a moderate increase between the two groups. Meanwhile, the learning motivation hypothesis test results showed a significance value $0.038 < 0.05$, indicating that there was an effect of the intervention on students' learning motivation, although the effect size obtained was weak. According to the results of this study, it can be concluded that there is an effect of the application of multiple representation on learning outcomes, particularly on students' mastery of concepts with moderate representation skills and intrinsic learning motivation on nervous system material.

Keywords: Multiple Representation, Learning Cycle 5E, Learning Outcomes, Learning Motivation, and Nervous System Material

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