

**PERBANDINGAN KETERAMPILAN PROSES SAINS SISWA PADA
PEMBELAJARAN MATERI PERUBAHAN LINGKUNGAN MELALUI
DISCOVERY LEARNING DAN PEMBELAJARAN BERBANTUAN
LABORATORIUM VIRTUAL**

SKRIPSI

diajukan untuk memenuhi sebagian dari syarat untuk memperoleh gelar Sarjana
Pendidikan Program Studi Pendidikan Biologi



oleh:

Meisya Azzahra

NIM. 1903590

**PROGRAM STUDI PENDIDIKAN BIOLOGI
FAKULTAS PENDIDIKAN MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS PENDIDIKAN INDONESIA**

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LEMBAR HAK CIPTA

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Oleh:

Meisya Azzahra

1903590

Skripsi ini diajukan untuk memenuhi salah satu syarat memperoleh gelar Sarjana Pendidikan pada Program Studi Pendidikan Biologi Departemen Pendidikan Biologi Fakultas Pendidikan Matematika dan Ilmu Pengetahuan Alam

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LEMBAR PENGESAHAN

MEISYA AZZAHRA

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Disetujui dan disahkan oleh:

Pembimbing I:



Dr. Ana Ratna Wulan, M.Pd.

NIP. 197404171999032001

Pembimbing II:



Tri Suwandi, S.Pd., M.Sc.

NIP. 199005142018031001

Mengetahui,

Ketua Program Studi Pendidikan Biologi



Dr. Kusnadi, M.Si.

NIP. 196805091994031001

ABSTRAK

Melatihkan keterampilan proses sains dalam pembelajaran merupakan salah satu wujud upaya dalam bidang pendidikan untuk turut mendukung keterampilan abad ke-21 agar dapat menghasilkan generasi penerus yang memiliki kemampuan untuk menghadapi tantangan dan permasalahan yang juga turut berkembang. Pembelajaran dengan model *discovery learning* dan berbantuan laboratorium virtual dapat memfasilitasi siswa untuk mengembangkan keterampilan proses sains yang dimilikinya. Tujuan dari penelitian ini adalah untuk menganalisis perbandingan keterampilan proses sains yang dimiliki oleh siswa melalui *discovery learning* dan pembelajaran berbantuan laboratorium virtual. Penelitian ini adalah eksperimen semu dengan *pretest-posttest non-equivalent group design* dan sampel diambil menggunakan teknik *purposive sampling*. Penelitian dilakukan kepada siswa kelas X salah satu SMA Negeri di Kota Bandung, masing-masing kelas berjumlah 36 siswa. Data dikumpulkan dengan menggunakan instrumen tes berupa soal essay berjumlah 10 butir yang memuat 7 indikator keterampilan proses sains berdasarkan AAAS yang meliputi keterampilan proses sains dasar dan terintegrasi. Teknik analisis data menggunakan perhitungan *N-Gain* untuk mengetahui peningkatan keterampilan proses sains yang dialami oleh kedua kelas. Hasil penelitian menunjukkan secara keseluruhan terdapat peningkatan keterampilan proses sains siswa pada kedua kelas, dilihat dari skor *N-Gain* yang diperoleh berada dalam kategori sedang. Namun, jika dianalisis per indikator, skor *N-Gain* pada beberapa indikator yang dimiliki siswa dengan pembelajaran berbantuan laboratorium virtual lebih tinggi daripada siswa dengan pembelajaran *discovery*. Berdasarkan hasil penelitian disimpulkan bahwa keterampilan proses sains siswa secara keseluruhan meningkat melalui *discovery learning* dan pembelajaran berbantuan laboratorium virtual. Namun, pada beberapa indikator lebih berpotensi ditingkatkan dengan pembelajaran berbantuan laboratorium virtual.

Kata kunci: keterampilan proses sains, *discovery learning*, laboratorium virtual

ABSTRACT

Practicing science process skills in learning is the effort in education to support 21st century skills to produce the next generation that has the ability to face challenges and problems that are also growing. Discovery learning model and virtual laboratory aids can facilitate students to develop science process skills. The purpose of this study was to analyze the comparison of students' science process skills through discovery learning and virtual laboratory-assisted learning. This research is a quasi experiment with pretest-posttest non-equivalent group design and using purposive sampling technique. The research was conducted on class X students of one of the public high schools in Bandung City, each class totaling 36 students. Data were collected using test instruments in essay questions totaling 10 items containing 7 indicators of science process skills based on AAAS which basic and integrated science process skills. The data analysis technique used N-Gain calculation to determine the improvement of science process skills experienced by both classes. The results showed that overall there was an increase in students' science process skills in both classes, seen from the N-Gain score obtained in the moderate category. However, if analyzed per indicator, the N-Gain score on several indicators owned by students with virtual laboratory-assisted learning is higher than students with discovery learning. Based on the results of the study, it was concluded that students' science process skills overall improved through discovery learning and virtual laboratory-assisted learning. However, some indicators have more potential to be improved with virtual laboratory-assisted learning.

Keywords: science process skills, discovery learning, virtual laboratory

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