# PENGARUH PENGGUNAAN *VIRTUAL LAB SIMULATION* PADA MATERI PEMANASAN GLOBAL TERHADAP *SUSTAINABILITY LITERACY* DAN KEMAMPUAN BERPIKIR SISTEM SISWA SMP

**SKRIPSI**

*Disusun untuk memenuhi salah satu syarat dalam memperoleh gelar sarjana pendidikan Program Studi Pendidikan Biologi*


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# PENGARUH PENGGUNAAN *VIRTUAL LAB SIMULATION* PADA MATERI PEMANASAN GLOBAL TERHADAP *SUSTAINABILITY LITERACY* DAN KETERAMPILAN BERPIKIR SISTEM SISWA SMP

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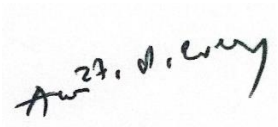

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# PENGARUH PENGGUNAAN *VIRTUAL LAB SIMULATION* PADA MATERI PEMANASAN GLOBAL TERHADAP *SUSTAINABILITY LITERACY* DAN KETERAMPILAN BERPIKIR SISTEM SISWA SMP

## ABSTRAK

Ketidakmampuan memahami dan menanggulangi permasalahan kompleks seperti pemanasan global akibat rendahnya *sustainability literacy* dan keterampilan berpikir sistem, maka diperlukan sebuah strategi pembelajaran khusus untuk dapat meningkatkannya sedini mungkin dimulai sejak bangku pendidikan SMP. Memanfaatkan kemajuan teknologi komputer dalam ranah pendidikan berupa *virtual lab simulation* yang dapat diakses oleh siapapun di internet. Penelitian ini bertujuan untuk menganalisis pengaruh penggunaan *virtual lab simulation* terhadap *sustainability literacy* dan keterampilan berpikir sistem siswa SMP. Penelitian ini menggunakan desain eksperimen semu berjenis *quasi eksperimental non equivalen control group design*, dengan teknik pengambilan sample *cluster random sampling.* Penelitian diberikan kepada 63 siswa yang terbagi menjadi kelompok kontrol dan kelompok eksperimen di salah satu Sekolah Menengah Pertama di Kota Bandung. Hasil penelitian belum menunjukkan pengaruh yang signifikan dari penggunaan *virtual lab simulation* terhadap *sustainability literacy* dan keterampilan berpikir sistem siswa. Penelitian ini dapat menjadi pembuka dalam pencarian cara terabaik memaksimalkan penggunaan *virtual lab simulation* untuk meningkatkan *sustainbility literacy* dan keterampilan berpikir sistem siswa.

**Kata kunci:** *Viirtual lab simulation*, *sustainability literacy*, berpikir sistem, pemanasan global..

*THE IMPACT OF VIRTUAL LAB SIMULATIONS ON GLOBAL WARMING TOPICS ON MIDDLE SCHOOL STUDENTS SUSTAINABILITY LITERACY AND SYSTEMS THINKING SKILLS*


## *ABSTRACT*

*The inability to understand and overcome complex problems such as global warming due to low sustainability literacy and systems thinking skills, requires a special learning strategy to be able to improve it as early as possible starting from junior high school. Utilizing advances in computer technology in the field of education in the form of virtual lab simulations that can be accessed by anyone on the internet. This study aims to analyze the effect of using virtual lab simulations on sustainability literacy and systems thinking skills of junior high school students. This study uses a quasi-experimental research design of the quasi-experimental non-equivalent control group design type, with a cluster random sampling technique. The study was given to 63 students who were divided into control groups and experimental groups at one of the Junior High Schools in Bandung City. The results of the study have not shown a significant effect of the use of virtual lab simulations on sustainability literacy and students' systems thinking skills. This study can be an opening in finding the best way to maximize the use of virtual lab simulations for improving students' sustainability literacy and systems thinking skills.*



***Keywords:*** *Virtual lab simulation, sustainability literacy, systems thinking, global warming.*

# DAFTAR ISI

# DAFTAR TABEL

# DAFTAR GAMBAR

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