

**THE IMPACT OF WORKING ON PREVENTING ENVIRONMENTAL  
POLLUTION PROJECT TO ENHANCE STUDENTS' SUSTAINABILITY  
ACTIONS AND CREATIVITY IN LEARNING ENVIRONMENTAL  
POLLUTION**

**RESEARCH PAPER**

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# **The Impact of Working on Preventing Environmental Pollution Project to Enhance Students' Sustainability Actions and Creativity in Learning Environmental Pollution**

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Sebuah skripsi yang diajukan untuk memenuhi salah satu syarat memperoleh gelar Sarjana Pendidikan pada Fakultas Pendidikan Matematika dan Ilmu Pengetahuan Alam

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**ABSTRACT**

Students' sustainability actions play a vital role in addressing environmental pollution in Indonesia by empowering them to engage actively in environmental initiatives. To overcome environmental challenges, students need to have creativity. This research aims to find how a project STEM-ESD-based learning enhances students' sustainability actions and investigates students' creativity in learning about environmental pollution. The method used is quasi-experimental, comparing control and experiment groups. Sustainability actions are measured using an Environmental Citizenship Questionnaire (ECQ), while creativity is evaluated using a Creativity Product Analysis Matrix Rubric (CPAM). The study focuses on junior high school students in Bandung, with 68 participants. The findings show that STEM-ESD project learning did significantly increase students' sustainability action connected to good health and well-being. The experimental class shows a significant increase in sustainability action compared to the control class which did not significantly increase. The student's creativity in the experimental class shows an average score of 63% out of 100%, this result is still below the average of previous research results. However, this study supports this learning technique as it has the potential to improve sustainability action and student creativity, implying that other authors should consider other elements that the authors did not look at such as measuring individual creativity and balancing group composition. The study's findings lead to the creation of project learning models that incorporate STEM-ESD methodologies to boost students' sustainability action and creativity.

**Keywords:** Project STEM-ESD-based learning, Sustainable Action, Student Creativity

# **DAMPAK MENERJAKAN PROYEK PENCEGAHAN PENCEMARAN LINGKUNGAN UNTUK MENINGKATKAN AKSI KEBERLANJUTAN DAN KREATIVITAS SISWA DALAM PEMBELAJARAN PENCEMARAN LINGKUNGAN**

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## **ABSTRAK**

Aksi keberlanjutan siswa berperan penting dalam mengatasi pencemaran lingkungan di Indonesia dengan mengajak mereka untuk terlibat secara aktif dalam memecahkan masalah lingkungan. Untuk menghadapi tantangan tersebut, siswa perlu memiliki kreativitas. Penelitian ini bertujuan untuk melihat bagaimana proyek pembelajaran berbasis STEM-ESD dapat meningkatkan aksi keberlanjutan siswa dan menyelidiki kreativitas siswa dalam belajar tentang pencemaran lingkungan. Metode yang digunakan adalah kuasi-eksperimental, dengan membandingkan kelompok kontrol dan eksperimen. Aksi keberlanjutan siswa diukur dengan menggunakan *Environmental Citizenship Questionnaire (ECQ)*, sedangkan kreativitas dievaluasi dengan menggunakan *Creativity Product Analysis Matrix Rubric (CPAM)*. Penelitian ini berfokus pada siswa sekolah menengah pertama di Bandung, dengan jumlah peserta sebanyak 68 orang. Temuan menunjukkan bahwa pembelajaran proyek STEM-ESD secara signifikan meningkatkan aksi keberlanjutan siswa yang berhubungan dengan kesehatan dan kesejahteraan yang baik. Kelas eksperimen menunjukkan peningkatan yang signifikan dalam aksi keberlanjutan dibandingkan dengan kelas kontrol yang tidak mengalami peningkatan yang signifikan. Kreativitas siswa di kelas eksperimen menunjukkan skor rata-rata 63% dari 100%, hasil ini masih di bawah rata-rata hasil penelitian sebelumnya. Namun, penelitian ini mendukung teknik pembelajaran ini karena memiliki potensi untuk meningkatkan aksi keberlanjutan dan kreativitas siswa, dengan rekomendasi bahwa penulis lain harus mempertimbangkan elemen lain yang tidak diukur oleh penulis seperti mengukur kreativitas individu dan menyeimbangkan komposisi kelompok. Temuan penelitian ini mengarah pada penciptaan model pembelajaran proyek yang menggabungkan metodologi STEM-ESD untuk meningkatkan aksi keberlanjutan dan kreativitas siswa.

**Kata kunci:** Aksi Keberlanjutan, Kreativitas Siswa, Pembelajaran Proyek STEM-ESD.

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