

ABSTRAK

PENGARUH MODEL *PROBLEM BASED LEARNING* BERMUATAN *SOCIO SCIENTIFIC ISSUES* TERHADAP KEMAMPUAN PEMECAHAN MASALAH DAN *SUSTAINABILITY AWARENESS* PESERTA DIDIK PADA MATERI PERUBAHAN IKLIM

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Penelitian ini bertujuan mengetahui pengaruh dari implementasi model PBL bermuatan SSI terhadap kemampuan pemecahan masalah dan *sustainability awareness* peserta didik pada materi perubahan iklim, sekaligus untuk mengetahui hubungan antara kedua kemampuan tersebut setelah model diimplementasikan. Penelitian ini menggunakan desain eksperimental semu dengan pola desain yaitu *The Matching Only Pretest-Posttest Control Group Design*. Sampel penelitian terdiri dari 46 peserta didik kelas X yang diambil dari populasi berjumlah 71 peserta didik MAN 1 Way Kanan melalui teknik *purposive sampling*. Data kemampuan pemecahan masalah diperoleh melalui tes dan dianalisis menggunakan uji *Independent Sample t-Test*, sedangkan data *sustainability awareness*, keterlaksanaan sintaks dan tanggapan peserta didik diambil dengan angket lalu dianalisis secara kuantitatif deskriptif. Hasil penelitian menunjukkan bahwa kemampuan pemecahan masalah kelas eksperimen lebih tinggi ($N\text{-Gain} = 47,83\%$ kriteria tinggi dan $52,17\%$ kriteria sedang) dari kelas kontrol ($N\text{-Gain} = 65,22\%$ kriteria sedang dan $34,78\%$ kriteria rendah). Hasil uji *Independent Sample t-Test* didapatkan nilai sig. (*2-tailed*) $0,00 < 0,05$ artinya H_1 diterima. Hasil uji *effect size* menunjukkan model PBL bermuatan SSI berpengaruh besar (1,96) terhadap kemampuan pemecahan masalah. Indikator kemampuan pemecahan masalah tertinggi pada kelas eksperimen adalah memahami masalah ($N\text{-Gain} = 0,95$) sedangkan indikator terendah yaitu memeriksa kembali hasil ($N\text{-Gain} = 0,37$). Hasil uji hubungan *Pearson product moment* didapatkan nilai sig. (*2-tailed*) $0,021 < 0,05$, hal ini menunjukkan bahwa terdapat hubungan yang signifikan antara kemampuan pemecahan masalah dan *sustainability awareness*. Hasil analisis data angket *sustainability awareness* diperoleh rata-rata persentase peningkatan indikator *sustainability emotional awareness* tertinggi yaitu sebesar $81,16\%$. Hasil analisis data angket tanggapan peserta didik menunjukkan sebagian besar peserta didik setuju ($88,79\%$) bahwa model PBL bermuatan SSI membantu dalam melatih kemampuan pemecahan masalah. Dengan demikian, penerapan model PBL bermuatan SSI berpengaruh signifikan terhadap kemampuan pemecahan masalah dan *sustainability awareness* peserta didik.

Kata kunci: Kemampuan Pemecahan Masalah, Model *Problem Based Learning* Bermuatan SSI, *Sustainability Awareness*.

ABSTRACT

THE EFFECT OF PROBLEM-BASED LEARNING INTEGRATED WITH SOCIO-SCIENTIFIC ISSUES ON STUDENT' PROBLEM SOLVING ABILITY AND SUSTAINABILITY AWARENESS ON THE MATERIAL OF CLIMATE CHANGE

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This research aims to determine the effect of implementing the Problem-Based Learning (PBL) model integrated with Socio-Scientific Issues (SSI) on students' problem-solving ability and sustainability awareness regarding climate change material, as well as to investigate the relationship between these two variables after the model's implementation. This study employed a quasi-experimental design using The Matching Only Pretest-Posttest Control Group Design. The research sample consisted of 46 tenth-grade students, selected from a population of 71 students at MAN 1 Way Kanan using a purposive sampling technique. Data on problem-solving ability were collected through tests and analyzed using the Independent Sample t-Test, while data on sustainability awareness, syntax implementation, and student responses were obtained through questionnaires and analyzed using descriptive quantitative methods. The results showed that the problem-solving ability of the experimental class were higher (N-Gain = 47.83% in the high category and 52.17% in the medium category) compared to the control class (N-Gain = 65.22% in the medium category and 34.78% in the low category). The Independent Sample t-Test results obtained a sig. (2-tailed) value of $0.00 < 0.05$, meaning H_1 is accepted. The effect size test results indicated that the SSI-integrated PBL model had a large effect (1.96) on problem-solving ability. The highest indicator of problem-solving ability in the experimental class was understanding the problem (N-Gain = 0.95), while the lowest indicator was looking back (N-Gain = 0.37). The Pearson product-moment correlation test yielded a sig. (2-tailed) value of $0.021 < 0.05$, indicating a significant relationship between problem-solving ability and sustainability awareness. The analysis of the sustainability awareness questionnaire data revealed that the highest average percentage increase was in the sustainability emotional awareness indicator, at 81.16%. Furthermore, the analysis of student response questionnaires showed that the majority of students (88.79%) agreed that the SSI-integrated PBL model helped them practice their problem-solving ability. Thus, the implementation of the SSI-integrated PBL model has a significant effect on students' problem-solving ability and sustainability awareness.

Keywords: *Problem-Based Learning Integrated SSI Model, Problem-Solving Ability, Sustainability Awareness.*