

ABSTRAK

PENGARUH MODEL PBL BERMUATAN *SOCIO SCIENTIFIC ISSUE* (SSI) TERHADAP KEMAMPUAN LITERASI SAINS DAN *SUSTAINABILITY AWARENESS* PESERTA DIDIK SMA TERKAIT KAWASAN *HERITAGE* TNBBS

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Penelitian ini bertujuan untuk mengetahui pengaruh model *Problem-Based Learning* bermuatan *Socio-Scientific Issues* terhadap literasi sains dan *sustainability awareness* Peserta didik pada materi ekosistem TNBBS peserta didik kelas X di SMAN 1 Pesisir Selatan. Sampel diambil melalui teknik *purposive sampling* dengan jumlah 36 peserta didik kelas X E4 sebagai kelas eksperimen dan 36 peserta didik kelas X E5 sebagai kelas kontrol. Penelitian ini menggunakan desain *quasi experiment non-equivalent control group design with pretest posttest*. Data penelitian berupa data kuantitatif yang diperoleh melalui tes yang dianalisis menggunakan uji independent sample t-test. Sementara, data kualitatif diperoleh melalui angket *sustainability awareness* dan tanggapan peserta didik terhadap model PBL bermuatan SSI dikumpulkan melalui angket dan dianalisis secara deskriptif. Hasil penelitian menunjukkan bahwa penerapan PBL bermuatan SSI memberikan pengaruh signifikan terhadap peningkatan kemampuan literasi sains ($t\text{-hitung } 0,006 < t \text{ tabel } 0,05$). Selain itu, perolehan hasil uji *effect size* mendapatkan nilai 0,67 yang diinterpretasikan dengan efektivitas sedang. Hasil menunjukkan peningkatan literasi sains kelas eksperimen lebih tinggi (*N-Gain* 0,54; sedang) dibanding kontrol (0,44; sedang). Peningkatan tertinggi pada indikator menjelaskan fenomena (0,43), diikuti merancang dan mengevaluasi penyelidikan (0,52), menginterpretasi data dan bukti (0,68). Pada *sustainability awareness*, kelas eksperimen juga menunjukkan peningkatan lebih besar pada seluruh indikator yaitu (80,49%) kategori tinggi. Respon Peserta didik terhadap pembelajaran mencapai 83,72% (kategori sangat baik). Disimpulkan bahwa PBL bermuatan SSI berpengaruh positif dalam meningkatkan literasi sains dan *sustainability awareness* Peserta didik.

Kata kunci: PBL, SSI, literasi sains, *sustainability awareness*, TNBBS.

ABSTRACT

THE INFLUENCE OF THE PBL MODEL INCORPORATING SOCIO-SCIENTIFIC ISSUES (SSI) ON THE SCIENCE LITERACY AND SUSTAINABILITY AWARENESS OF SECONDARY SCHOOL STUDENTS IN RELATION TO THE TNBBS HERITAGE AREA.

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This study aims to determine the effect of a Problem-Based Learning model incorporating Socio-Scientific Issues on the science literacy and sustainability awareness of 10th-grade students at SMAN 1 Pesisir Selatan regarding the TNBBS ecosystem curriculum. The sample was selected using purposive sampling, consisting of 36 students from class X E4 as the experimental group and 36 students from class X E5 as the control group. This study employed a quasi-experimental design with a non-equivalent control group and a pretest-posttest design. The research data consisted of quantitative data obtained through tests, which were analyzed using an independent samples t-test. Meanwhile, qualitative data were obtained through a sustainability awareness questionnaire and students' responses to the PBL model incorporating SSI, collected via a questionnaire and analyzed descriptively. The results of the study indicate that the implementation of SSI-integrated PBL has a significant effect on improving creative thinking skills (t -calculated $0.006 < t$ -table 0.05). In addition, the effect size test yielded a value of 0.67 , which is interpreted as indicating high effectiveness. The results showed that the increase in science literacy in the experimental class was higher (N-Gain 0.54 ; moderate) than in the control group (0.44 ; moderate). The highest increase was observed in the "explaining phenomena" indicator (0.43), followed by "designing and evaluating investigations" (0.52), and "interpreting data and evidence" (0.68). Regarding sustainability awareness, the experimental class also showed a greater increase across all indicators, with 80.49% falling into the high category. Student responses to the learning process reached 83.72% (very good category). It is concluded that SSI-integrated PBL has a positive effect on improving students' science literacy and sustainability awareness.

Keywords: PBL, SSI, science literacy, sustainability awareness, TNBBS.