

ABSTRAK

IMPLEMENTASI MODEL PjBL-STEM TERINTEGRASI STRATEGI EDP UNTUK MENINGKATKAN *ENTREPRENEURIAL THINKING* PESERTA DIDIK SMA PADA TOPIK ENERGI TERBARUKAN

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Kemampuan *Entrepreneurial Thinking* peserta didik dalam pembelajaran fisika masih perlu untuk ditingkatkan guna mempersiapkan mereka menghadapi tantangan abad ke-21. Penelitian ini bertujuan untuk mengetahui keefektifan dari implementasi model PjBL-STEM terintegrasi EDP terhadap kemampuan *Entrepreneurial Thinking* peserta didik SMA pada topik Energi Terbarukan. Penelitian ini dilakukan di salah satu sekolah SMA Negeri 1 Ambarawa, Pringsewu dengan metode *quasi experiment* dan desain penelitian *pretest-posttest control group design*. Sampel yang digunakan adalah kelas X-3 sebagai kelas eksperimen dan kelas X-4 sebagai kelas kontrol. Instrumen yang digunakan berupa soal uraian. Pembelajaran menggunakan model PjBL-STEM terintegrasi EDP efektif dalam meningkatkan kemampuan *Entrepreneurial Thinking* peserta didik. Hal ini dilihat dari rata-rata nilai *N-Gain* pada kelas eksperimen sebesar 0,50 lebih tinggi daripada kelas kontrol yang hanya sebesar 0,30. Selain itu, hal tersebut juga didukung dengan data hasil uji *Independent Sample T-Test* yang menunjukkan nilai signifikansi (*Sig. 2-tailed*) sebesar $0,000 < 0,05$, yang berarti terdapat perbedaan signifikan antara kedua kelas. Keefektifan implementasi model PjBL-STEM terintegrasi EDP terhadap kemampuan *Entrepreneurial Thinking* peserta didik SMA pada topik Energi Terbarukan memperkuat pentingnya pengembangan keterampilan abad ke-21, khususnya dalam menciptakan peserta didik yang adaptif, kreatif, dan inovatif dalam menghadapi permasalahan dunia nyata.

Kata Kunci: EDP, Energi Terbarukan, *Entrepreneurial Thinking*, PjBL-STEM

ABSTRACT

IMPLEMENTATION OF THE PJBL-STEM MODEL INTEGRATED WITH THE EDP STRATEGY TO ENHANCE HIGH SCHOOL STUDENTS ENTREPRENEURIAL THINKING ON THE TOPIC OF RENEWABLE ENERGY

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Students' entrepreneurial thinking skills in physics learning still need to be improved to prepare them for the challenges of the 21st century. This study aims to determine the effectiveness of implementing the PjBL-STEM model integrated with the EDP strategy on high school students' entrepreneurial thinking skills in the topic of renewable energy. The study was conducted at one of the public high schools, SMA Negeri 1 Ambarawa, Pringsewu, using a quasi-experimental method with a pretest-posttest control group design. The sample consisted of class X-3 as the experimental group and class X-4 as the control group. The instrument used was an essay test. The learning process using the PjBL-STEM model integrated with EDP was effective in improving students' entrepreneurial thinking skills. This is indicated by the average N-Gain score in the experimental class, which was 0.50—higher than the control class, which only scored 0.30. Additionally, this is supported by the results of the Independent Sample T-Test, which showed a significance value (Sig. 2-tailed) of $0.000 < 0.05$, indicating a significant difference between the two classes. The effectiveness of implementing the PjBL-STEM model integrated with the EDP strategy in enhancing high school students' entrepreneurial thinking in the topic of renewable energy reinforces the importance of developing 21st-century skills, especially in shaping students to become adaptive, creative, and innovative in facing real-world problems.

Keywords: *EDP, Entrepreneurial Thinking, PjBL-STEM, Renewable Energy*