ABSTRAK

IMPLEMENTASI MODEL 5E TERINTEGRASI STEM-EDP UNTUK MENINGKATKAN KEMAMPUAN *COLLABORATIVE PROBLEM SOLVING* PESERTA DIDIK SMA

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Reformasi pendidikan global menekankan pengembangan kemampuan peserta didik menghadapi tantangan masa depan melalui pendidikan STEM. Model 5E terintegrasi STEM-EDP efektif meningkatkan keterampilan abad ke-21, seperti *Collaborative Problem Solving* (CPS). Namun, implementasinya di Indonesia terkendala pada kurangnya pemahaman guru tentang STEM dan dominasi metode pembelajaran *teacher centered*. Pada penelitian ini, model 5E terintegrasi STEM-EDP digunakan pada kelas eksperimen dan model PBL digunakan pada kelas control. Hasil penelitian menunjukkan model 5E terintegrasi STEM-EDP lebih efektif dalam meningkatkan kemampuan CPS peserta didik, dengan rata-rata nilai *pretest-posttest* kelas eksperimen 37,99 dan 74,86, sedangkan kelas kontrol 33,33 dan 45,97. Instrumen yang digunakan pada penelitian ini dinyatakan valid, reliabel, data berdistribusi normal, homogen, dan terdapat perbedaan signifikan (Sig. 0,05), dengan *effect size* 0,738 menunjukkan pengaruh cukup besar. Penelitian di menunjukkan bahwa model 5E terintegrasi STEM-EDP efektif meningkatkan kemampuan CPS pada topik gerak lurus. Model ini mendorong peserta didik aktif, berkolaborasi, dan berpikir kritis, dengan peningkatan CPS kelas eksperimen lebih tinggi dibandingkan kontrol.

Kata Kunci: Model 5E, STEM-EDP, *Collaborative Problem Solving*

ABSTRACT

IMPLEMENTATION OF THE 5E MODEL INTEGRATED WITH STEM-EDP TO ENHANCE HIGH SCHOOL STUDENTS' COLLABORATIVE PROBLEM-SOLVING SKILLS

By

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Global education reform emphasizes the development of students' abilities to face future challenges through STEM education. The 5E model integrated with STEM-EDP is effective in enhancing 21st-century skills, such as Collaborative Problem Solving (CPS). However, its implementation in Indonesia faces challenges due to teachers' lack of understanding of STEM and the dominance of teacher-centered learning methods. In this study, the 5E model integrated with STEM-EDP was applied to the experimental class, while the PBL model was used in the control class. The research results indicate that the 5E model integrated with STEM-EDP is more effective in improving students' CPS skills, with the experimental class achieving pretest-posttest average scores of 37.99 and 74.86, compared to 33.33 and 45.97 in the control class. The instruments used in this study were validated as valid and reliable, with normally distributed and homogeneous data, showing a significant difference (Sig. 0.05) and an effect size of 0.738, indicating a considerable impact. This study demonstrates that the 5E model integrated with STEM-EDP is effective in enhancing CPS skills in the topic of linear motion. This model encourages students to be active, collaborate, and think critically, with CPS improvement in the experimental class being higher than in the control class.

Keywords: 5E Model, STEM-EDP, Collaborative Problem Solving