PENERAPAN *COLLABORATIVE PROJECT BASED LEARNING* (CPBL) UNTUK MENINGKATKAN *PROBLEM-SOLVING SKILL* DAN MENGANALISIS PROFIL *COLLABORATIVE SKILL* PESERTA DIDIK SMA PADA MATERI LISTRIK DINAMIS

TESIS

Diajukan untuk memenuhi sebagian syarat untuk memperoleh gelar Magister Pendidikan Program Studi Pendidikan Fisika

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PROGRAM STUDI MAGISTER PENDIDIKAN FISIKA

FAKULTAS PENDIDIKAN MATEMATIKA DAN ILMU PENGETAHUAN ALAM

UNIVERSITAS PENDIDIKAN INDONESIA

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PENERAPAN *COLLABORATIVE PROJECT BASED LEARNING* (CPBL) UNTUK MENINGKATKAN *PROBLEM-SOLVING SKILL* DAN MENGANALISIS PROFIL *COLLABORATIVE SKILL* PESERTA DIDIK SMA PADA MATERI LISTRIK DINAMIS

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ABSTRAK

Listrik dinamis merupakan topik penting yang erat kaitannya dengan kehidupan sehari-hari. Namun, pentingnya topik ini belum selaras dengan tingkat keterampilan siswa SMA dalam memecahkan masalah terhadap topik tersebut. Keadaan ini didukung oleh fakta bahwa beberapa siswa SMA masih saling mengandalkan dalam kegiatan kolaborasi pada pembelajaran di sekolah. Penelitian ini bertujuan untuk menganalisis peningkatan *Problem-Solving Skill* dan profil *Collaborative Skill* siswa SMA. Metode yang digunakan adalah *mixed methods* dengan desain *Embedded Experimental Model* dengan *Pre-test – Post-test Control Group*. Sampel penelitian ini merupakan siswa kelas XI dari salah satu SMA di Kabupaten Subang. Sampel terdiri atas kelas eksperimen dan kontrol yang berjumlah sama yaitu 33 siswa. Penelitian ini menggunakan instrumen tes *Problem-Solving Skill* berbentuk uraian, lembar observasi *Collaborative Skill,* dan penilaian respons siswa. Analisis peningkatan *Problem-Solving Skill* untuk kedua kelas menggunakan Rasch model dengan melihat perbedaan rata-rata peningkatan nilai *logit pre-test* dan *post-test* pada *person measure* dan melihat perbedaan *N-Gain* yang diperoleh menggunakan SPSS, analisis *Collaborative Skill* untuk kedua kelas juga menggunakan Rasch model dengan melihat perbedaan rata-rata nilai *logit* pada *person measure,* dan penilaian respons siswa membantu untuk melihat tanggapan terhadap pembelajaran CPBL. Hasil penelitian menunjukkan peningkatan *Problem-Solving Skill* rata-rata peningkatan nilai *logit* kelas eksperimen sebesar 4,05 dan kelas kontrol sebesar 3,96, dan *N-Gain* rata-rata untuk kelas eksperimen sebesar 0,78 (kategori tinggi) dan *N-Gain* rata-rata untuk kelas kontrol sebesar 0,68 (kategori sedang). Peningkatan *Problem-Solving Skill* sama-sama dialami oleh kedua kelas. Apabila dibandingkan, CPBL lebih efektif untuk meningkatkan *Problem-Solving Skill* siswa mengenai Listrik dinamis daripada PjBL. Selain itu, siswa kelas eksperimen memiliki profil *Collaborative Skill* yang lebih baik daripada siswa kelas kontrol.

Kata kunci: *Collaborative Project Based Learning, Collaborative and Problem-Solving Skills,* Listrik dinamis, *embedded mixed methods.*

IMPLEMENTATION OF COLLABORATIVE PROJECT BASED LEARNING (CPBL) TO IMPROVE PROBLEM-SOLVING SKILL AND ANALYZE THE COLLABORATIVE SKILL PROFILE OF SENIOR HIGH SCHOOL STUDENTS ON THE TOPIC OF DYNAMIC ELECTRICITY

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ABSTRACT

Ohm's Law and types of electrical circuits is an important topic closely related to everyday life. However, the importance of this topic is not yet aligned with the level of high school students' problem-solving skills in this area. This condition is supported by the fact that some high school students still rely on each other during collaborative learning activities at school. This study aims to analyze the improvement of high school students' Problem-Solving Skill and Collaborative skill profile. The method used is a mixed methods approach with an Embedded Experimental Model with a Pre-test - Post-test Control Group Design. The research sample consisted of 11th grade students from a high school in Subang Regency, with 33 students each in the experimental and control classes. The study uses a Problem-Solving Skill instrument in the formof essays, direct observation of Collaborative Skill, and student response assessment. The improvement in Problem-Solving Skills for both classes was analyzed using the Rasch model by comparing the average increase in logit scores from the pre-test and post-test person measures and examining the differences in N-Gain scores using SPSS. Collaborative Skill analysis for both classes also used the Rasch model, comparing the average logit scores in the person measures. Additionally, student responses to the learning process were assessed to evaluate the effectiveness of CPBL. The results showed an average logit score increase in Problem-Solving Skills of 4.05 for the experimental class and 3.96 for the control class. The average N-Gain for the experimental class was 0.78 (high category), while the control class had an average N-Gain of 0.68 (medium category). Both classes experienced improvements in Problem-Solving Skills. However, when compared, CPBL proved to be more effective in enhancing students' Problem-Solving Skills on the topic of Ohm's Law and types of electrical circuits than PjBL. Additionally, students in the experimental class have a better collaborative skill profile than those in the control class.

Keywords: Collaborative Project Based Learning, Collaborative and Problem-Solving Skills, Ohm's Law and types of electrical circuits, embedded mixed methods.

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