

ABSTRAK

Yanri Lumbantoruan. Nim 5202411003. Pengaruh Model *Project Based Learning* (PjBL) Berbantuan *Artificial Intelligence* (AI) Terhadap Hasil Belajar Rencana Biaya dan Penjadwalan Konstruksi Bangunan Siswa DPIB Kelas XI SMK N 5 MEDAN

Penelitian ini bertujuan untuk mengetahui apakah model pembelajaran *Project based learning* berbantuan *Artificial Intelligence* memberi pengaruh yang signifikan terhadap hasil belajar Rencana biaya dan penjadwalan konstruksi bangunan pada siswa DPIB kelas XI SMK Negeri 5 Medan. Sampel penelitian ini adalah kelas XI DPIB 1 sebagai kelas perlakuan model Pembelajaran *Project based learning* berbantuan *Artificial Intelligence* berjumlah 30 siswa. Penelitian ini merupakan penelitian quasi eksperimen merupakan desain pre-test, pembelajaran dan post- test. Instrumen penelitian terlebih dahulu diujicobakan, dilanjutkan dengan uji validitas, reliabilitas, indeks kesukaran, dan daya pembeda soal. Hasil uji coba tes hasil belajar Rencana biaya dan penjadwalan konstruksi bangunan dari 30 butir soal yang diujicobakan diperoleh 21 butir soal yang valid dengan koefisien reabilitas 0,96 termaksud dalam kategori sangat tinggi. Hasil perhitungan persamaan regresi linear sederhana mempunyai angka konstan sebesar 31.931 artinya bahwa jika tidak ada *project based learning* berbantuan *Artificial Intelligence* (AI) atau (X) maka nilai hasil belajar (Y) adalah 31.931 dan nilai koefisien regresi linier sebesar 0.654 artinya bahwa setiap penambahan 1% *project based learning* berbantuan *Artificial Intelligence* (AI) atau (X) , maka Hasil belajar (Y) akan meningkat sebesar 0.654. Besarnya angka koefisien determinasi (R Square) adalah 0,662 atau sama dengan 66,2% . Angka tersebut mengandung arti bahwa variabel *project based learning* berbantuan *Artificial Intelligence* (AI) berpengaruh terhadap variabel Hasil belajar sebesar 66,2%. Sedangkan sisanya ($100\% - 66,2\% = 33,8\%$) dipengaruhi oleh variabel lain di luar persamaan regresi ini atau variabel yang tidak diteliti. Sehingga H_a diterima dan H_o ditolak, yang berarti bahwa hasil belajar siswa yang diajar menggunakan model Pembelajaran *Project based learning* berbantuan *Artificial Intelligence* memberikan pengaruh yang signifikan terhadap hasil belajar. Hasil penelitian ini hendaknya bermanfaat bagi pihak sekolah dan guru dalam meningkatkan hasil belajar siswa pada mata pelajaran Rencana biaya dan penjadwalan konstruksi bangunan.

Kata Kunci: Model Pembelajaran, *Project Based Learning*, *Artificial Intelligence* , Hasil Belajar, Rencana biaya dan penjadwalan konstruksi bangunan.

ABSTRACT

Yanri Lumbantoruan. Nim 5202411003. The Effect of Project Based Learning (PjBL) Model Assisted by Artificial Intelligence (AI) on Learning Outcomes of Cost Planning and Scheduling of Building Construction for DPIB Students in Class eleven of SMK N 5 MEDAN.

This study aims to determine whether the Project-based learning model assisted by Artificial Intelligence has a significant effect on the learning outcomes of cost planning and scheduling of building construction in DPIB students of class eleven SMK Negeri 5 Medan. The sample of this research is class eleven DPIB 1 as the treatment class of the Project-based learning model assisted by Artificial Intelligence totaling 30 students. This research is a quasi-experimental research is a pre-test, learning and post-test design. The research instrument was first tested, followed by testing the validity, reliability, difficulty index, and question differentiation. The results of the test of learning outcomes of cost planning and scheduling of building construction from 30 items tested obtained 21 valid items with a reliability coefficient of 0.96 included in the very high category. The results of the calculation of the simple linear regression equation have a constant number of 31,931, meaning that if there is no project-based learning assisted by Artificial Intelligence (AI) or (X) then the value of learning outcomes (Y) is 31,931 and the linear regression coefficient value of 0.654 means that every 1% addition of project-based learning is 0.654. The magnitude of the coefficient of determination (R Square) is 0.662 or equal to 66.2%. This figure means that the project-based learning variable assisted by Artificial Intelligence (AI) affects the learning outcomes variable by 66.2%. While the rest (100% - 66.2% = 33.8%) is influenced by other variables outside this regression equation or variables not examined. So that H_a is accepted and H_o is rejected, which means that the learning outcomes of students taught using the Project-based learning model assisted by Artificial Intelligence have a significant effect on learning outcomes. The results of this study should be useful for schools and teachers in improving student learning outcomes in the subject of cost planning and scheduling of building construction.

Keywords: Learning Model, Project Based Learning, Artificial Intelligence, Learning Outcomes, Cost planning and scheduling of building construction.

