

Achmad ismail. 2026. *Pengaruh model pembelajaran Pjbl Dengan Pendekatan Berdiferensiasi Berbantuan Cisco Packet Tracer Terhadap Hasil Belajar Siswa Di SMK*. Skripsi Program Studi Pendidikan Informatika Fakultas Keguruan dan Ilmu Pendidikan. Universitas Trunodjoyo Madura Pembimbing: Muchamad Arif, S.Pd., M.Pd.

ABSTRAK

Penelitian ini dilakukan guna mengetahui Pengaruh Model Pembelajaran *Project Based Learning* dengan pendekatan *Berdiferensiasi* Berbantuan *Cisco* Terhadap Hasil Belajar Siswa pada materi routing, beserta aktivitas keterlaksanaan pembelajaran dan respon siswanya. Penelitian ini menggunakan metode kuantitatif dengan model penelitian eksperimen. Populasi yang digunakan sebanyak 41 siswa kelas XI TKJ di SMKN 1 Kamal, dimana 21 siswa kelas XI TKJ 1 sebagai kelas eksperimen dan 20 siswa kelas XI TKJ 2 sebagai kelas kontrol. Penelitian ini menggunakan pretest, posttest, wawancara, observasi, serta angket untuk pengumpulan data. Berdasarkan hasil penelitian diperoleh, (1) Terdapat pengaruh model pembelajaran *project based learning* dengan pendekatan *Berdiferensiasi* berbantuan *Cisco* terhadap hasil belajar siswa (ranah kognitif) didasarkan pada uji signifikan yang diperoleh hasil $t_{hitung} > t_{tabel}$ atau $1,744 > 1,729$, sehingga H_a diterima. Selain itu, terjadi peningkatan hasil belajar di mana sebanyak 15 dari 21 siswa (71%) mencapai nilai di atas KKM, hanya 6 belum tuntas. (2) Aktivitas pelaksanaan pembelajaran menggunakan model *project based learning* dengan pendekatan *Berdiferensiasi* berbantuan *Cisco* menunjukkan hasil baik. Aktivitas guru memperoleh presentase 92,7% dengan kategori “sangat baik” dan aktivitas siswa memperoleh presentase 90,9% dengan kategori “sangat baik”. (3) Respon siswa pada pembelajaran dengan model *project based learning* dengan pendekatan *Berdiferensiasi* berbantuan *Cisco* memperoleh presentase 81,33% berkategori “sangat baik”. Sehingga dapat disimpulkan bahwa terdapat pengaruh model pembelajaran *project based learning* dengan pendekatan *Berdiferensiasi* berbantuan *Cisco* terhadap hasil belajar siswa pada materi routing kelas XI TKJ di SMKN 1 Kamal.

Kata kunci *Project Based Learning, Pendekatan Berdiferensiasi, Cisco Packet Tracer, Hasil Belajar Siswa, Routing.*

Achmad Ismail. 2026. The Effect of Pjbl Learning Model with Differentiated Approach Assisted by Cisco Packet Tracer on Student Learning Outcomes in Vocational High Schools. Thesis of Informatics Education Study Program, Faculty of Teacher Training and Education. Trunodjoyo University Madura Supervisor: Muchamad Arif, S.Pd., M.Pd.

ABSTRACT

This study was conducted to determine the effect of the Project-Based Learning (PjBL) model with a differentiated approach assisted by Cisco on students' learning outcomes in routing materials, as well as to examine the implementation of learning activities and students' responses. This research employed a quantitative method with an experimental research design. The population consisted of 41 eleventh-grade students of the Computer and Network Engineering (TKJ) program at SMKN 1 Kamal, with 21 students from class XI TKJ 1 serving as the experimental class and 20 students from class XI TKJ 2 serving as the control class. Data were collected through pretests, posttests, interviews, observations, and questionnaires. Based on the research findings, (1) there was a significant effect of the Project-Based Learning model with a differentiated approach assisted by Cisco on students' learning outcomes in the cognitive domain. This was supported by the results of the significance test, where $t_{count} > t_{table}$ ($1.744 > 1.729$), indicating that H_a was accepted. In addition, learning outcomes improved, with 15 out of 21 students (71%) achieving scores above the Minimum Mastery Criterion (KKM), while only 6 students did not achieve mastery. (2) The implementation of learning activities using the Project-Based Learning model with a differentiated approach assisted by Cisco showed positive results. Teacher activities achieved a percentage of 92.7%, categorized as "very good," while student activities achieved a percentage of 90.9%, also categorized as "very good." (3) Students' responses to the implementation of the Project-Based Learning model with a differentiated approach assisted by Cisco reached 81.33%, which was categorized as "very good." Therefore, it can be concluded that the Project-Based Learning model with a differentiated approach assisted by Cisco has a significant effect on students' learning outcomes in routing materials for eleventh-grade Computer and Network Engineering (TKJ) students at SMKN 1 Kamal.

Keywords: *Project Based Learning, Differentiated Approach, Cisco Packet Tracer, Student Learning Outcomes, Routing.*