

ABSTRAK

SARAH FAZILLA. Pengembangan Model Pembelajaran *Project Based Learning* (PJBL) Berbasis TPACK Untuk Meningkatkan Kompetensi Profesional Mahasiswa Calon Guru Sekolah Dasar. Medan: Program Pascasarjana Universitas Negeri Medan. Desember 2024.

Kehadiran tenaga pendidik yang terampil dan berpengetahuan serta memiliki pemahaman mendalam terhadap mata pelajaran ilmu pengetahuan dan teknologi dapat memberikan dampak yang signifikan terhadap kualitas pendidikan di era revolusi industri. Penelitian ini bertujuan untuk menganalisis keefektifan model Model Pembelajaran model *Project Based Learning* (PjBL) berbasis TPACK dalam meningkatkan kompetensi profesional mahasiswa calon guru Sekolah Dasar pada materi IPA. Penelitian ini menggunakan metode Pengembangan (*Research and Development*) dengan model pengembangan Plomp, Subyek penelitian melibatkan 62 mahasiswa calon guru pada jurusan PGMI IAIN Lhokseumawe. Untuk pengembangan model pembelajaran *project-based learning* berbasis TPACK menghasilkan produk berupa Buku Model dan perangkat perkuliahan (RPS, Buku Dosen, Buku Mahasiswa dan Lembar Kerja Mahasiswa). Hasil Analisis hasil validasi ahli menunjukkan produk valid dengan nilai rata – rata 3,97, untuk perangkat didapatkan valid untuk digunakan dengan sedikit revisi yaitu rata – rata nilai untuk RPS sebesar 3,94, buku dosen 3,9, buku mahasiswa 3,94 dan LKM sebesar 3,86. Lebih lanjut hasil uji kepraktisan model didapatkan nilai 3,84 artinya model siap di implementasikan, didukung dengan nilai respon positif dari dosen mahasiswa sebesar 77,58. Untuk hasil uji keefektifan model pembelajaran *project-based learning* berbasis TPACK didapatkan nilai hasil tes uji kompetensi profesional dengan nilai rata – rata postes sebesar 91,6 dan nilai N-gain 0,77, keefektifan model juga didukung dengan hasil uji *one sample t test* didapatkan nilai t hitung $>$ t tabel ($22,908 > 1,670$) dan nilai Sig. (1-tailed) artinya model pembelajaran *Project based learning* berbasis TPACK efektif ditinjau dari kompetensi profesional mahasiswa calon guru serta efektif digunakan. Hasil uji kompetensi profesional mahasiswa calon guru sekolah dasar terbukti efektif dan termasuk ke dalam kategori tinggi dengan nilai rata – rata N-Gain sebesar 0,77 (77%) dan didukung hasil observasi 68% mahasiswa pada kategori baik. Studi ini memberikan kontribusi berharga peningkatan kualitas mahasiswa calon guru sekolah dasar dengan pengembangan pedagogi yang inovatif untuk mempersiapkan pendidik dalam menghadapi tantangan ruang kelas yang beragam dan dinamis saat ini dan masa mendatang.

Kata Kunci: *Project Based Learning, TPACK, Kompetensi Profesional, Mahasiswa Calon Guru.*

ABSTRACT

SARAH FAZILLA. Development of TPACK-Based *Project Based Learning* (PJBL) *Learning* Model to Improve Professional Competence of Prospective Elementary School Teacher Students. Medan: Postgraduate Program, State University of Medan. December 2024.

The presence of educators who are skilled and knowledgeable and have a deep understanding of science and technology subjects can have a significant impact on the quality of education in the era of the industrial revolution. This study aims to analyze the effectiveness of the TPACK-based *Project Based Learning* (PjBL) model in improving the professional competence of prospective elementary school teachers on science materials. This study used the Development method (Research and Development) with the Plomp development model, the research subjects involved 62 prospective teacher students at the IAIN Lhokseumawe PGMI department. For the development of a TPACK-based project-based learning model, the product is a Model Book and lecture tools (RPS, Lecturer Book, Student Book and Student Worksheet). Analysis of the results of expert validation showed that the product was valid with an average value of 3.97, for the device it was found valid for use with a slight revision, namely the average value for RPS of 3.94, lecturer's book 3.9, student book 3.94 and LKM of 3.86. Furthermore, the practicality test results of the model obtained a value of 3.84, meaning that the model is ready to be implemented, supported by a positive response value from student lecturers of 77.58. For the results of the effectiveness test of the TPACK-based project-based learning model, the value of the professional competency test results was obtained with an average post-test value of 91.6 and an N-gain value of 0.77, the effectiveness of the model was also supported by the results of the one sample t test obtained $t \text{ value} > t \text{ table}$ ($22.908 > 1.670$) and Sig. (1-tailed) means that the TPACK-based project-based learning model is effective in terms of professional competence of prospective teacher students and effective to use. The results of the professional competency test of prospective elementary school teachers proved to be effective and included in the high category with an average N-Gain value of 0.77 (77%) and supported by the observation results of 68% of students in the good category. This study provides a valuable contribution to improving the quality of prospective elementary school teacher students with the development of innovative pedagogy to prepare educators to face the challenges of diverse and dynamic classrooms today and in the future.

Keywords: *Project Based Learning, TPACK, Professional Competence, Prospective Teacher Students*