ABSTRAK

REGITA AZRA AFIFAH: Pengaruh Model *Project Based Learning* Berbantuan PPT Interaktif Terhadap Kemampuan Komunikasi Matematis dan Kolaborasi Siswa. **Program Studi Pendidikan Matematika FKIP Universitas Malikussaleh, 2026.**

Rendahnya kemampuan komunikasi matematis dan kolaborasi siswa dalam pembelajaran matematika disebabkan oleh proses pembelajaran yang masih berpusat pada guru sehingga siswa kurang memperoleh kesempatan untuk berdiskusi, mengemukakan ide, dan bekerja sama dalam menyelesaikan permasalahan. Oleh karena itu, diperlukan model pembelajaran yang berpusat pada siswa, salah satunya *Project Based Learning* (PjBL) berbantuan *PowerPoint* (PPT) interaktif, yang mampu mendorong keterlibatan aktif siswa dalam proses pembelajaran. Penelitian ini bertujuan untuk mengetahui pengaruh model *Project Based Learning* (PjBL) berbantuan PPT interaktif terhadap kemampuan komunikasi matematis dan kolaborasi siswa. Penelitian ini menggunakan pendekatan kuantitatif dengan desain penelitian *Quasi Experimental Design* dengan jenis desain *Nonequivalent Pretest-Posttest Control Group Design.* Populasi penelitian ini adalah seluruh siswa kelas X MAN 5 Bireuen. Teknik pengambilan sampel yaitu *Purposive Sampling*, dengan kelas yang terpilih yaitu kelas X-2 sebagai kelas eksperimen dan kelas X-1 sebagai kelas kontrol. Teknik pengumpulan data yang digunakan melalui instrumen tes kemampuan komunikasi matematis dan instrumen non-tes angket kolaborasi siswa. Pengujian hipotesis pertama menggunakan uji normalitas dan dilanjutkan dengan uji *Mann-Whitney U* diperoleh nilai signifikan sebesar 0,001 < 0,05, yang menunjukkan terdapat pengaruh model pembelajaran *Project Based Learning* berbantuan PPT Interaktif terhadap kemampuan komunikasi matematis siswa. Sedangkan pengujian hipotesis kedua menggunakan uji normalitas, homogenitas dan dilanjutkan dengan uji *Independent Sample T-Test* dengan *equal variance not assumed* diperoleh nilai signifikan sebesar 0,019 < 0,05, yang menunjukkan terdapat pengaruh model *Project Based Learning* berbantuan PPT Interaktif terhadap kolaborasi siswa.

Kata Kunci: Model Project Based Learning, Kemampuan komunikasi matematis, Kemampuan kolaborasi matematis.

ABSTRACT

REGITA AZRA AFIFAH: *The Effect of the Project-Based Learning Model Assisted by Interactive PowerPoint on Students' Mathematical Communication and Collaboration Skills.* ***University Malikussaleh FKIP Mathematics Education Study Program, 2026.***

The low level of students' mathematical communication and collaboration skills in mathematics learning is caused by teacher-centered learning, which provides limited opportunities for students to discuss, express ideas, and collaborate in solving problems. Therefore, a student-centered learning model is needed, one of which is Project Based Learning (PjBL) assisted by Interactive PowerPoint (PPT), which encourages students' active involvement in the learning process. This study aimed to determine the effect of the Project Based Learning (PjBL) model assisted by Interactive PowerPoint on students' mathematical communication and collaboration skills. This research employed a quantitative approach using a Quasi-Experimental Design, specifically the Nonequivalent Pretest–Posttest Control Group Design. The population of this study consisted of all tenth-grade students at MAN 5 Bireuen. The sampling technique used was purposive sampling, with class X-2 selected as the experimental class and class X-1 as the control class. The data were collected using a mathematical communication skills test and a non-test questionnaire to measure students' collaboration skills. The first hypothesis was tested using a normality test followed by the Mann–Whitney U test, which yielded a significance value of 0.001 < 0.05, indicating that the Project Based Learning model assisted by Interactive PowerPoint had a significant effect on students' mathematical communication skills. Meanwhile, the second hypothesis was tested using normality and homogeneity tests followed by the Independent Samples t-test (equal variances not assumed), which also produced a significance value of 0.019 < 0.05, indicating that the Project Based Learning model assisted by Interactive PowerPoint had a significant effect on students' collaboration skills.

Kata Kunci: *Project Based Learning Model, Mathematical Communication Skills, Students' Collaboration Skills.*