# ABSTRAK

**Nurhaliza:** Pengaruh Pendekatan STEM *(Sciens, Technologiy, Engineering, And Mathematic)* Berbasis Budaya Lokal Terhadap Kemampuan Komunikasi Matematis dan *Self Efficacy* Siswa. **Program Studi Pendidikan Matematika FKIP Universitas Malikussaleh, 2025.**

Rendahnya kemampuan komunikasi matematis dan *self efficacy* siswa menjadi fokus utama dalam penelitian ini. Sebagai solusi, diterapkan pendekatan STEM berbasis budaya lokal yang mendorong siswa mengaitkan konsep matematika dengan kehidupan sehari-hari dan budaya lokal. Tujuan penelitian ini adalah untuk mengetahui pengaruh pendekatan STEM berbasis budaya lokal terhadap kemampuan komunikasi matematis dan s*elf efficacy* siswa.

Pendekatan yang digunakan adalah kuantitatif dengan jenis *quasi experimental* dan desain *the nonequivalent posttest-only control group design*. Populasi dalam penelitian ini adalah seluruh siswa kelas VIII SMP Negeri 2 Dewantara. Teknik pengambilan sampel menggunakan *census sampling*, seluruh populasi dijadikan sampel, yaitu kelas VIII-A sebagai kelas eksperimen dan VIII-B sebagai kelas kontrol. Penelitian ini menggunkan instrument berupa *posttest* kemampuan komunikasi matematis, angket *self efficacy*. Analisis data dilakukan dengan menggunakan uji non-parametrik *Mann-Whitney U Test* dan uji t' (t-test).

Pengujian hipotesis pada tes kemampuan komunikasi matematis siswa menunjukkan nilai signifikan sebesar 0,000, dengan kriteria pengujian hipotesis nilai *Asymp. Sig. (2-tailed)* $< 0{,}05$ maka $H_0$ ditolak, artinya terdapat pengaruh pendekatan STEM berbasis budaya lokal terhadap kemampuan komunikasi matematis siswa. Sementara hipotesis pada angket *self efficacy* siswa menunjukkan nilai signifikan sebesar 0,000, dengan kriteria pengujian hipotesis nilai *Asymp. Sig. (2-tailed)* $< 0{,}05$ maka $H_0$ ditolak, artinya terdapat pengaruh pendekatan STEM berbasis budaya lokal terhadap *self efficacy* siswa



**Kata Kunci:** Pendekatan STEM, Budaya Lokal, Kemampuan Komunikasi Matematis Siswa, *Self Efficacy* Siswa

## *ABSTRACT*

**Nurhaliza**: *The Influence of Local Culture-Based STEM (Science, Technology, Engineering, and Mathematics) Approach on Students' Mathematical Communication Skills and Self-Efficacy.* ***Mathematics Education Study*** **program FKIP**, **universitas Malikussaleh**, *2025.*

*The low mathematical communication skills and self-efficacy of students are the main focus of this study. As a solution, a local culture-based STEM approach is applied which encourages students to relate mathematical concepts to everyday life and local culture. The purpose of this study was to determine the effect of a local culture-based STEM approach on students' mathematical communication skills and self-efficacy.*

*The approach used is quantitative with quasi-experimental type and nonequivalent posttest-only control group design. The population in this study were all students of class VIII of SMP Negeri 2 Dewantara. The sampling technique used census sampling, the entire population was used as a sample, namely class VIII-A as the experimental class and VIII-B as the control class. This study used instruments in the form of a posttest of mathematical communication skills, a self-efficacy questionnaire. Data analysis was carried out using the non-parametric Mann-Whitney U Test and the t 'test (t-test).*

*Hypothesis testing on students' mathematical communication skills tests showed a significant value of 0.000, in accordance with the hypothesis testing criteria for the Asymp. Sig. value. (2-tailed) <0.05 then* $H_0$ *is rejected, meaning that there is an influence of the local culture-based STEM approach on students' mathematical communication skills. Meanwhile, hypothesis testing on the student self-efficacy questionnaire shows a significant value of 0.000, in accordance with the hypothesis testing criteria for the Asymp. Sig. value. (2-tailed) <0.05 then* $H_0$ *is rejected, meaning that there is an influence of the local culture-based STEM approach on student self-efficacy.*



*Keywords: STEM Approach, Local Culture, Students' Mathematical Communication Skills, Students' Self Efficacy*