

ABSTRAK

Safitri, Firda Julia. 2026. Efektivitas *Learning Cycle 5E* Model Berbantuan Media *GeoGebra* Pada *Penalaran Spasial* Sekolah Dasar. Skripsi. Program Studi Pendidikan Guru Sekolah Dasar, Fakultas Keguruan dan Ilmu Pendidikan, Universitas PGRI Madiun. Pembimbing (I) Dr. Lingga Nico Pradana, M.Pd., (II) Dr. Liya Atika Anggrasari, M.Pd.

Penalaran spasial merupakan kemampuan kognitif yang berkaitan dengan proses memahami, memvisualisasikan, dan memanipulasi objek beserta hubungan keruangannya secara mental. Akan tetapi, kemampuan siswa pada aspek visualisasi spasial, rotasi mental, dan orientasi spasial masih tergolong rendah dan belum berkembang secara optimal. Penelitian ini bertujuan untuk mengetahui efektivitas model *Learning Cycle 5E* berbantuan media *GeoGebra* terhadap penalaran spasial siswa sekolah dasar. Penelitian ini menggunakan pendekatan kuantitatif dengan jenis penelitian *quasi experiment* dan desain *pre-test and post-test control group design*. Populasi penelitian adalah seluruh siswa kelas IV SDN Teguhan 02 Kabupaten Madiun yang berjumlah 43 siswa. Teknik pengambilan sampel menggunakan sampel jenuh, sehingga seluruh populasi dijadikan sampel penelitian. Kelas IVA sebagai kelompok eksperimen memperoleh pembelajaran menggunakan model *Learning Cycle 5E* berbantuan media *GeoGebra*, sedangkan kelas IVB sebagai kelompok kontrol menggunakan model *Problem Based Learning* (PBL). Teknik pengumpulan data menggunakan tes penalaran spasial berupa soal pilihan ganda sebanyak 20 butir. Data dianalisis menggunakan uji normalitas, uji keseimbangan, dan uji hipotesis. Hasil penelitian menunjukkan bahwa rata-rata nilai *pre-test* kelompok eksperimen sebesar 78,80 dan meningkat menjadi 87,80 pada *post-test*. Sementara itu, rata-rata nilai *pre-test* kelompok kontrol sebesar 70,28 dan meningkat menjadi 80,27 pada *post-test*. Hasil tersebut menunjukkan bahwa peningkatan kemampuan penalaran spasial siswa pada kelompok eksperimen lebih tinggi dibandingkan kelompok kontrol. Dengan demikian, dapat disimpulkan bahwa model pembelajaran *Learning Cycle 5E* berbantuan media *GeoGebra* efektif digunakan untuk meningkatkan *penalaran spasial* siswa sekolah dasar.

Kata kunci: Learning Cycle 5E, GeoGebra, Penalaran Spasial

ABSTRAC

Safitri, Firda Julia. 2026. The Effectiveness of *Learning Cycle 5E* Model Assisted by *GeoGebra* Media on *Spatial Reasoning* in Elementary Schools. Thesis. Elementary School Teacher Education Study Program, Faculty of Teacher Training and Education, Universitas PGRI Madiun. Supervisors (I) Dr. Lingga Nico Pradana, M.Pd., (II) Dr. Liya Atika Anggrasari, M.Pd.

Spatial reasoning is a cognitive ability related to the process of understanding, visualizing, and mentally manipulating objects and their spatial relationships. However, students' abilities in the aspects of spatial visualization, mental rotation, and spatial orientation are still relatively low and have not developed optimally. This study aims to determine the effectiveness of the Learning Cycle 5E model assisted by GeoGebra media on the spatial reasoning of elementary school students. This study uses a quantitative approach with a quasi-experimental research type and a pre-test and post-test control group design. The study population was all 43 fourth-grade students of SDN Teguhan 02, Madiun Regency. The sampling technique used saturated sampling, so that the entire population was used as the research sample. Class IVA as the experimental group received learning using the Learning Cycle 5E model assisted by GeoGebra media, while class IVB as the control group used the Problem Based Learning (PBL) model. The data collection technique used a spatial reasoning test in the form of 20 multiple-choice questions. Data were analyzed using normality tests, balance tests, and hypothesis tests. The results showed that the average pre-test score for the experimental group was 78.80 and increased to 87.80 in the post-test. Meanwhile, the average pre-test score for the control group was 70,28 and increased to 80.27 in the post-test. These results indicate that the improvement in students' spatial reasoning abilities in the experimental group was higher than in the control group. Therefore, it can be concluded that the Learning Cycle 5E learning model assisted by GeoGebra media is effective in improving elementary school students' spatial reasoning.

Keywords: *Learning Cycle 5E, GeoGebra, Spatial Reasoning*