

ABSTRAK

Thalita Ardedia, NIM 4181151018 (2023). Pengaruh Implementasi Model Learning Cycle Berbasis Phet Colorado Terhadap Kemampuan Berpikir Kritis Siswa Materi Energi Dalam Sistem Kehidupan Di SMP Cerdas Murni.

Penelitian ini bertujuan untuk mengetahui apakah peningkatan kemampuan berpikir kritis siswa melalui model pembelajaran Learning Cycle 7E berbasis media PhET Colorado pada materi energi dalam sistem kehidupan memenuhi kriteria tinggi dan aspek berpikir kritis apakah yang berkembang melalui model pembelajaran Learning Cycle 7E berbasis media PhET Colorado pada materi energi dalam sistem kehidupan. Jenis penelitian ini menggunakan metode *Pre-Experimental Design* dengan desain penelitian *One Group Pretest-Posttest Design*. Sampel dalam penelitian ini terdiri dari satu kelas yang berjumlah 21 siswa yaitu kelas VII-2 SMP Cerdas Murni yang dipilih secara *random sampling*. Instrumen yang digunakan berupa tes kemampuan berpikir kritis yang telah divalidasi dalam bentuk essay sebanyak 10 soal dan memenuhi syarat reliabilitas sebesar 0,634. Dari hasil penelitian diperoleh rata-rata *pretest* 19,33 dan *posttest* sebesar 81,23, yang menyatakan data bersifat homogen. Pada uji normalitas diperoleh nilai Chi-Kuadrat *pretest* sebesar 23,026 dan *posttest* sebesar 7,126 yang menyatakan data berdistribusi normal. Berdasarkan hasil analisis uji hipotesis (*one sample t-test*) diperoleh $t_{hitung} > t_{tabel}$ yaitu $5,084 > 1,725$. Pada pengujian gain ternormalisasi diperoleh n-gain sebesar 0,764 (76%) yang menyatakan bahwa kemampuan berpikir kritis siswa dengan model pembelajaran learning Cycle 7E berbasis media PhET Colorado pada materi energi dalam sistem kehidupan memenuhi kriteria tinggi. Hasil penelitian menunjukkan bahwa kemampuan berpikir kritis siswa untuk aspek 1 memberikan penjelasan sederhana sebesar 67%, aspek 2 membangun keterampilan dasar sebesar 89%, aspek 3 menyimpulkan sebesar 99%, aspek 4 membuat penjelasan lebih lanjut sebesar 66% dan aspek 5 mengatur strategi dan taktik sebesar 60%. Sehingga dapat disimpulkan bahwa aspek berpikir kritis yang berkembang adalah aspek menyimpulkan.

Kata Kunci: Model pembelajaran learning cycle 7E, kemampuan berpikir kritis, PhET, energi dalam sistem kehidupan.

ABSTRACT

Thalita Ardelia, NIM 4181151018 (2023). The Effect of Implementation of Phet Colorado-Based Learning Cycle Model on Students' Critical Thinking Skill in Energy Materials in Life Systems at SMP Cerdas Murni.

This study aimed to determine whether the improvement of students' critical thinking skill through the Learning Cycle 7E learning model based on Phet Colorado media on energy material in living systems meet the high criteria and what aspects of critical thinking are developed through the Learning Cycle 7E learning model based on Phet Colorado media energy in living systems material. This type of research used the *Pre-Experimental Design* method with the *One Group Pretest-Posttest Design* research design. The sample in this study consisted of one class with a total of 21 students, namely class VII-2 of SMP Cerdas Murni, which were selected by *random sampling*. The instrument used was a critical thinking skill test which has been validated in the form of an essay with 10 questions and fulfills the reliability requirement of 0.634. From the research results obtained an average *pretest* of 19.33 and a *posttest* of 81.23, which stated that the data was homogeneous. In the normality test, it was obtained that the Chi-Square *pretest* was 23.026 and the *posttest* was 7.126 which stated that the data was normally distributed. Based on the results of the analysis of hypothesis testing (*one sample t-test*) obtained $t_{\text{count}} > t_{\text{table}}$, namely $5.084 > 1.725$. In testing the normalized gain obtained n-gain of 0.764 (76%) which states that the students' critical thinking skills with the Learning Cycle 7E learning model based on PhET Colorado media on energy material in living systems met high criteria. The results showed that students' critical thinking skill for aspect 1 providing simple explanations was 67%, aspect 2 building basic skills was 89%, aspect 3 concluding was 99%, aspect 4 making further explanations was 66% and aspect 5 organizing strategies and tactics was 60%. So it can be concluded that the developed critical thinking aspect is the concluding aspect.

Keywords: learning cycle 7E learning model, critical thinking skills, PhET, energy in living systems.

