

Erlis Ratna Dewi. 2024. *Penerapan Model Pembelajaran SOLE Berbantuan PhET untuk Meningkatkan Kemampuan Berpikir Kritis Siswa SMP Kelas VIII*. Skripsi, Program Studi Pendidikan IPA, Fakultas Ilmu Pendidikan, Universitas Trunojoyo Madura. Pembimbing: Nur Qomaria

ABSTRAK

Penelitian ini bertujuan untuk mengetahui bagaimana peningkatan kemampuan berpikir kritis siswa melalui penerapan model pembelajaran *SOLE* Berbantuan *PhET Simulation*. Penelitian ini menggunakan *quasi eksperimental design* dan dilaksanakan di MTs Darul Ulum Al-Cholily Bojonegoro dengan populasi semua siswa kelas VIII Tahun Ajaran 2023/2024. Teknik pengambilan sampel menggunakan *cluster random sampling*. Sampel penelitian sebanyak 2 kelas yaitu kelas VIII A & VIII B. Pengumpulan data menggunakan tes, observasi, angket dan dokumentasi. Berdasarkan hasil penelitian dapat disimpulkan bahwa: (1) ada perbedaan kemampuan berpikir kritis siswa pada kelas eksperimen dan kelas kontrol, (2) peningkatan kemampuan berpikir kritis siswa pada kelas eksperimen lebih baik dibandingkan dengan kelas kontrol, (3) penerapan model pembelajaran *SOLE* berbantuan *PhET Simulation* pada saat pembelajaran terlaksana dengan sangat baik, (4) respons siswa terhadap penerapan model pembelajaran *SOLE* berbantuan *PhET simulation* sangat baik.

Kata kunci : Kemampuan berpikir kritis, *PhET simulation*, *SOLE*

Erlis Ratna Dewi. 2024. *Application of the PhET-Assisted SOLE Learning Model to Improve Critical Thinking Ability of Class VIII Middle School Students*. Thesis, Science Education Study Programme, Faculty of Education, Trunojoyo University Madura. Advision: Nur Qomaria

ABSTRACT

This research aims to find out how to improve students' critical thinking skills through the application of the SOLE learning model assisted by PhET simulation. This research used a quasi-experimental design and was carried out at MTs Darul Ulum Al-Cholily Bojonegoro with a population of all class VIII students for the 2023–2024 academic year. The sampling technique uses cluster random sampling. The research sample consisted of 2 classes, namely classes VIII A and VIII B. Data collection used tests, observation, questionnaires, and documentation. Based on the research results, it can be concluded that: (1) there are differences in students' critical thinking abilities in the experimental class and control class; (2) the increase in students' critical thinking abilities in the experimental class is better compared to the control class; (3) the application of the SOLE learning model assisted by PhET simulation during learning was carried out very well; and (4) students' responses to the application of the SOLE learning model assisted by PhET simulation were very good.

Keywords: Critical thinking skills, *PhET simulation*, SOLE