

ABSTRAK

Inna Fareza. 2026. Pengaruh *Problem Based Learning* Berbantuan Media *PhET Simulation* terhadap Hasil Belajar Matematika ditinjau dari Motivasi Belajar Siswa Kelas II SDN Sirapan 01 Kabupaten Madiun. Skripsi. Program Studi Pendidikan Guru Sekolah Dasar, FKIP, Universitas PGRI Madiun. Pembimbing (I) Dr. Dahlia Novarianing Asri, M.Si., (II) Dr. Liya Atika Anggrasari, S.Pd., M.Pd.

Rendahnya hasil belajar matematika pada materi pecahan di sekolah dasar masih menjadi permasalahan akibat pembelajaran yang berpusat pada guru serta minimnya penggunaan media yang mampu mengonkretkan konsep abstrak bagi siswa yang berada pada tahap berpikir operasional konkret. Penelitian ini bertujuan menguji pengaruh model *Problem Based Learning* (PBL) berbantuan *PhET Simulation* terhadap hasil belajar matematika ditinjau dari motivasi belajar siswa kelas II sekolah dasar. Penelitian menggunakan metode eksperimen semu (quasi-experimental design) dengan rancangan *posttest only control design*. Sampel ditentukan melalui teknik sampel jenuh yang melibatkan 20 siswa SDN Sirapan 01 sebagai kelompok eksperimen dan 18 siswa SDN Sirapan 02 sebagai kelompok kontrol. Data dikumpulkan menggunakan tes hasil belajar berbentuk pilihan ganda dan kuesioner motivasi belajar, kemudian dianalisis menggunakan uji *Two Way ANOVA* dengan bantuan *SPSS versi 25*. Hasil analisis menunjukkan bahwa model pembelajaran dan motivasi belajar berpengaruh signifikan terhadap hasil belajar kedua hasil pengujian menunjukkan nilai signifikansi yang berada di bawah taraf signifikansi. Sebaliknya, interaksi antara model pembelajaran dan motivasi belajar tidak menunjukkan pengaruh yang signifikan, hal ini dibuktikan dengan taraf signifikansi yang berada di atas batas signifikansi yang ditetapkan. dengan demikian, model *Problem Based Learning* (PBL) berbantuan *PhET Simulation* terbukti efektif meningkatkan hasil belajar matematika siswa, dan efektivitas tersebut tetap konsisten pada siswa dengan motivasi belajar tinggi maupun rendah. **Kata kunci:** Hasil Belajar, Matematika, Motivasi Belajar, *PhET Simulation*, *Problem Based Learning*.

ABSTRACT

Inna Fareza The Effect of *Problem Based Learning* Assisted by PhET *Simulation* Media on Mathematics Learning Outcomes is reviewed from the Learning Motivation of Class II Students of SDN Sirapan 01 Madiun Regency. Primary School Teacher Education Study Program, FKIP, Universitas PGRI Madiun. Supervisor (I) Dr. Dahlia Novarianing Asri, M.Si., (II) Dr. Liya Atika Anggrasari, S.Pd., M.Pd.

The low results of mathematics learning on fractional subjects in elementary school are still a problem due to teacher-centered learning and the lack of use of media that is able to concrete abstract concepts for students who are in the concrete operational thinking stage. This research aims to test the influence of the *Problem Based Learning* (PBL) model with the help of PhET *Simulation* on the math learning outcomes reviewed from the learning motivation of primary school grade II students. The research uses a pseudo-experimental design (quasi-experimental design) with a posttest only control design. The sample was determined through a saturated sample technique involving 20 SDN Sirapan 01 students as an experimental group and 18 SDN Sirapan 02 students as a control group. Data was collected using a learning outcome test in the form of multiple choice and a learning motivation questionnaire, then analyzed using the Two Way ANOVA test with the help of SPSS version 25. The results of the analysis show that the learning model and learning motivation have a significant effect on learning outcomes because both test results show a significance value that is below the significance level. On the other hand, the interaction between the learning model and learning motivation does not show a significant effect, this is evidenced by the level of significance that is above the specified significance limit. Thus, the *Problem Based Learning* (PBL) model with the help of PhET *Simulation* is proven to be effective in improving students' mathematical learning outcomes, and the effectiveness remains consistent in students with high and low learning motivation.

Keywords: Learning Outcomes, Mathematics, Learning Motivation, Phet *Simulation*, *Problem Based Learning*