

ABSTRAK

PENGARUH MODEL *GUIDED INQUIRY LEARNING* BERBASIS *PhET SIMULATIONS* TERHADAP KEMAMPUAN LITERASI SAINS PESERTA DIDIK KELAS V SD MATA PELAJARAN IPAS

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Rendahnya kemampuan literasi sains peserta didik menjadi pokok permasalahan penelitian ini. Tujuan penelitian adalah: (1) mengetahui pengaruh model *guided inquiry learning* berbasis *PhET Simulations* terhadap kemampuan literasi sains; (2) perbedaan penerapan model *guided inquiry learning* berbasis *PhET Simulations* dengan model *guided inquiry learning* terhadap kemampuan literasi sains. Jenis penelitian adalah *quasi-experiment* dengan desain penelitian *non-equivalent control group*. Populasi penelitian adalah peserta didik SD Negeri 2 Bulurejo dengan sampel kelas VA sebagai kelompok eksperimen dan kelas VB sebagai kelompok kontrol. Teknik pengambilan sampel menggunakan *purposive sampling*, total sampel 41 peserta didik. Hasil analisis data menunjukkan: (1) rerata nilai *posttest* eksperimen lebih tinggi dibandingkan kontrol, yaitu $75,00 > 64,73$; (2) adanya pengaruh signifikan model *guided inquiry learning* berbasis *PhET Simulations* terhadap kemampuan literasi sains peserta didik dengan $F_{hitung} > F_{tabel}$, yaitu $13,01 > 4,41$; (3) persentase kenaikan kemampuan literasi sains *R square* sebesar 42%; dan (4) adanya perbedaan signifikan pembelajaran menggunakan model *guided inquiry learning* berbasis *PhET Simulations* terhadap literasi sains dibandingkan pembelajaran yang hanya menggunakan model *guided inquiry learning* saja, dengan $t_{hitung} > t_{tabel}$, yaitu $2,634 > 2,093$ (uji-t *posttest*) dan $4,327 > 2,093$ (uji-t nilai *N-Gain*). Selain itu, terdapat indikasi penurunan aktivitas peserta didik apabila menggunakan model *guided inquiry learning* saja tanpa adanya integrasi *PhET Simulations* dalam pembelajaran.

Kata kunci: kemampuan literasi sains, model *guided inquiry learning*, *PhET Simulations*, kelas V, sekolah dasar

ABSTRACT

THE EFFECT OF GUIDED INQUIRY LEARNING MODEL BASED ON PhET SIMULATIONS ON THE SCIENCE LITERACY SKILLS OF GRADE V ELEMENTARY SCHOOL STUDENTS IN THE SUBJECT MATTER OF IPAS

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The low science literacy skills of students are the main problem. The research objectives are to know: (1) the effect of guided inquiry learning model based on PhET Simulations on science literacy skills; (2) the difference between utilizing guided inquiry learning model based on PhET Simulations and the only guided inquiry learning model on science literacy skills. The type of research is quasi-experiment with non-equivalent control group design. The research population is students of SD Negeri 2 Bulurejo, with samples of class VA as the experimental group and class VB as the non-experimental group. The sampling technique uses purposive sampling, a total sample of 41 students. The results of data analysis shows: (1) the average experimental posttest is higher than the non-experimental = $75.00 > 64.73$; (2) there is a significant effect of guided inquiry learning model based on PhET Simulations on students' science literacy skills with $F_{\text{count}} > F_{\text{table}} = 13.01 > 4.41$; (3) percentage increase in science literacy skills R square of 42%; and (4) there is a significant difference between utilizing guided inquiry learning model based on PhET Simulations on science literacy and engaging the only guided inquiry learning model, with $t_{\text{count}} > t_{\text{table}} = 2.634 > 2.093$ (posttest t-test) and $4.327 > 2.093$ (N-Gain value t-test). In addition, there is evidence of a decrease in learner activity when using the guided inquiry without integrating PhET Simulations into the learning.

Keywords: science literacy skills, guided inquiry learning model, PhET Simulations, grade V, elementary school