

ABSTRAK

Putri, Yoana Avinka. 2026. *Pengembangan Media Pembelajaran Fisika Berscaffolding Berbasis Fisigreen untuk Meningkatkan Kemampuan Pemecahan Masalah Siswa SMA*. Skripsi. Program Studi Pendidikan Fisika, Fakultas Keguruan dan Ilmu Pendidikan, Universitas PGRI Madiun.

Penelitian ini bertujuan mengembangkan media pembelajaran fisika berscaffolding berbasis website Fisigreen pada materi Pemanasan Global untuk meningkatkan kemampuan pemecahan masalah (KPM) siswa kelas X SMA Negeri 1 Nglames, sekaligus menguji kevalidan, respon siswa, dan keefektifan produk yang dikembangkan. Penelitian menggunakan metode Research and Development (R&D) dengan model ADDIE (Analysis, Design, Development, Implementation, Evaluation), melibatkan 71 siswa dari kelas X-A (n=36) dan X-C (n=35) sebagai subjek uji coba. Hasil validasi ahli menunjukkan media Fisigreen memperoleh rata-rata skor 86,67% dari ahli media dan 89,20% dari ahli materi, keduanya berkategori Sangat Baik (Sangat Layak). Instrumen soal tes KPM dinyatakan valid secara isi dengan nilai CVI berkisar 0,808–0,840, serta valid secara empiris dengan koefisien korelasi item-total 0,289–0,515 dan reliabilitas tinggi (Cronbach's Alpha = 0,823). Angket respons siswa memperoleh rata-rata 88,61% (kategori Sangat Praktis) dengan reliabilitas 0,826. Uji prasyarat analisis menunjukkan data pretest–posttest berdistribusi normal (Shapiro-Wilk, $p>0,05$) dan homogen antar kelas (Levene, $p>0,05$). Rata-rata skor KPM meningkat dari 62,47 menjadi 81,81 pada kelas X-A dan dari 62,37 menjadi 81,71 pada kelas X-C. Hasil paired sample t-test menunjukkan peningkatan yang signifikan pada kedua kelas ($p=0,000$) dengan effect size Cohen's d sangat besar (4,79 dan 5,15), didukung oleh analisis N-Gain berkategori tinggi (0,707 dan 0,710). Berdasarkan keseluruhan hasil uji tersebut, dapat disimpulkan bahwa media pembelajaran Fisigreen valid, mendapat respon positif, dan efektif digunakan untuk meningkatkan kemampuan pemecahan masalah siswa SMA pada materi Pemanasan Global.

Kata kunci: *scaffolding, kemampuan pemecahan masalah, media pembelajaran fisika, Pemanasan Global*

ABSTRACT

Putri, Yoana Avinka. 2026. *Development of Scaffolding-Based Physics Learning Media Using Fisigreen to Improve Senior High School Students' Problem-Solving Skills*. Undergraduate Thesis. Physics Education Study Program, Faculty of Teacher Training and Education, Universitas PGRI Madiun.

This study aimed to develop scaffolding-based physics learning media using the Fisigreen website on the topic of Global Warming to improve the problem-solving skills (PSS) of tenth-grade students at SMA Negeri 1 Nglames, as well as to examine the validity, student responses, and effectiveness of the developed product. The study employed the Research and Development (R&D) method with the ADDIE model (Analysis, Design, Development, Implementation, Evaluation), involving 71 students from classes X-A (n=36) and X-C (n=35) as trial subjects. Expert validation results showed that the Fisigreen media obtained average scores of 86.67% from the media expert and 89.20% from the subject matter expert, both categorized as Very Good (Highly Feasible). The PSS test instrument was declared content-valid with CVI values ranging from 0.808 to 0.840, and empirically valid with item-total correlation coefficients of 0.289–0.515 and high reliability (Cronbach's Alpha = 0.823). The student response questionnaire obtained an average of 88.61% (Highly Practical category) with a reliability of 0.826. Prerequisite analysis tests showed that the pretest–posttest data were normally distributed (Shapiro-Wilk, $p > 0.05$) and homogeneous across classes (Levene, $p > 0.05$). The average PSS score increased from 62.47 to 81.81 in class X-A and from 62.37 to 81.71 in class X-C. The paired sample t-test showed a significant improvement in both classes ($p = 0.000$) with very large Cohen's d effect sizes (4.79 and 5.15), supported by N-Gain analysis in the high category (0.707 and 0.710). Based on these overall results, it can be concluded that the Fisigreen learning media is valid, receives positive responses, and is effective in improving senior high school students' problem-solving skills on the topic of Global Warming.

Keywords: *scaffolding, problem-solving skills, physics learning media, Global Warming*