

ABSTRAK

PENGARUH PENGGUNAAN MULTIMEDIA *ADOBE FLASH* DAN SIMULASI PhET TERHADAP MATERI PERSAMAAN KEADAAN GAS IDEAL KELAS XI IPA SMAS KATOLIK REGINA PACIS BAJAWA

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Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan multimedia *adobe flash* dan simulasi PhET dalam materi persamaan keadaan gas ideal terhadap keterlibatan siswa dan hasil belajar siswa.

Subyek dari penelitian ini berjumlah 29 orang dari siswa kelas XI IPA 2 SMAS Katolik Regina Pacis Bajawa. Pembelajaran dilakukan di laboratorium komputer saat siswa menggunakan simulasi PhET dan di kelas saat menggunakan *adobe flash*. Instrumen yang digunakan dalam pengambilan data, yaitu: tes pilihan benar-salah beralasan (*Pretest* dan *posttest*), LKS, penilaian kerja kelompok, dan wawancara. Peningkatan hasil belajar siswa berdasarkan hasil *pretest* dan *posttest* dianalisis secara statistik menggunakan program SPSS 23, sedangkan keterlibatan siswa dianalisis dari observasi.

Hasil penelitian menunjukkan bahwa: (1) Penggunaan simulasi PhET dan *adobe flash* dapat meningkatkan hasil belajar siswa mengenai materi persamaan keadaan gas ideal; (2) Berdasarkan hasil wawancara siswa setuju dengan adanya pembelajaran menggunakan simulasi PhET dan multimedia *adobe flash*.

Kata Kunci: Simulasi PhET, *adobe flash*, keterlibatan siswa, hasil belajar.

ABSTRACT

THE INFLUENCE OF USING ADOBE FLASH MULTIMEDIA AND PhET SIMULATION IN THE LEARNING OF THE STATE OF IDEAL GAS EQUATION IN SCIENCE XI CLASS OF CATHOLIC PRIVATE HIGH SCHOOL REGINA PACIS BAJAWA

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This study aims to determine the effect of the use adobe flash multimedia and PhET simulate in the learning of the state of ideal gas equation for student engagement and learning outcomes.

The subjects of this study were 29 students from XI science 2 class Catholic private students Regina Pacis high school Bajawa. The learning is done in a computer laboratory where students used PhET simulations and in classroom where student used adobe flash. The instruments that used in the data collection were: correct reasoned choice tests (Pretest and posttest), LKS, group work assessment, and interviews. The student learning improvement outcomes is based on the results of the pretest and post-test that were statistically analyzed using the SPSS 23 program, while student involvement was analyzed from the assessment of group work.

The results of the study show that: (1) The use of PhET simulations and adobe flash can improve student learning outcomes regarding the state of ideal gas equation; (2) Based on the results of interviews students agree with the existence of learning using PhET simulation and adobe flash multimedia.

Keywords: *PhET simulation, adobe flash, student engagement, learning outcomes.*