

ABSTRAK

Dila Trianasari: Pengaruh Pembelajaran Fisika Berbantuan *Zep Quiz* terhadap Motivasi dan Hasil Belajar Siswa Kelas X SMA/MA pada Materi Sumber Energi. **Program Studi Pendidikan Fisika FKIP Universitas Malikussaleh, 2026.**

Fisika sering dianggap sulit karena konsepnya yang abstrak dan hitungan matematis yang rumit. Evaluasi konvensional berbasis kertas secara berulang memicu kejenuhan siswa, sehingga berdampak pada rendahnya motivasi dan hasil belajar kognitif. Penelitian kuantitatif kuasi eksperimen dengan *nonequivalent control group design* ini bertujuan untuk menganalisis pengaruh pembelajaran fisika berbantuan *Zep Quiz* terhadap motivasi dan hasil belajar kognitif siswa kelas X SMA/MA pada materi Sumber Energi di MAN Kota Lhokseumawe dengan mengontrol kemampuan awal mereka. Sampel dipilih melalui *purposive sampling*, terdiri dari kelas X-1 sebagai kelas eksperimen (32 siswa) menggunakan platform *Zep Quiz* dan kelas X-4 sebagai kelas kontrol (24 siswa) menggunakan pembelajaran konvensional. Instrumen penelitian menggunakan angket motivasi belajar dan tes pilihan ganda hasil belajar kognitif (C1–C4) yang valid dan reliabel. Data dianalisis menggunakan *Multivariate Analysis of Covariance* (MANCOVA) dengan nilai *pretest* sebagai kovariat. Hasil uji hipotesis menunjukkan nilai Wilks' Lambda sebesar 0,157 dengan nilai F_{hitung} sebesar 136,461 dan signifikansi 0,000 ($p < 0,05$), sehingga H_0 ditolak dan H_a diterima. Dapat disimpulkan bahwa pembelajaran fisika berbantuan media *Zep Quiz* berpengaruh secara signifikan dalam meningkatkan motivasi belajar (rata-rata 29,16) dan hasil belajar kognitif (rata-rata *posttest* 86,88) siswa kelas X pada materi Sumber Energi dengan kontribusi murni sebesar 84,3%, khususnya pada kemampuan berpikir tingkat tinggi. Fitur gamifikasi seperti papan peringkat (*leaderboard*) dan umpan balik langsung (*real-time feedback*) efektif menciptakan kompetisi sehat serta keterlibatan aktif siswa dalam proses pembelajaran.

Kata kunci: *Zep Quiz*, MANCOVA, gamifikasi, motivasi belajar, hasil belajar kognitif.

ABSTRACT

Dila Trianasari: The Effect of *Zep Quiz*-Assisted Physics Instruction on the Motivation and Learning Outcomes of 10th-Grade High School/MA Students on the Topic of Energy Sources. **Physics Education Program, Faculty of Teacher Training and Education, Malikussaleh University, 2026.**

Physics is often perceived as difficult due to its abstract concepts and complex mathematical calculations. Conventional paper-based assessments frequently lead to student fatigue, resulting in low motivation and poor cognitive learning outcomes. This quasi-experimental study, employing a non-equivalent control group design, aimed to analyze the impact of *Zep Quiz*-assisted physics instruction on the motivation and cognitive learning outcomes of 10th-grade students (SMA/MA) regarding the topic of Energy Sources at MAN Lhokseumawe City, while controlling for their prior knowledge. A purposive sampling method was used to select the sample: class X-1 served as the experimental group (32 students) using the *Zep Quiz* platform, while class X-4 served as the control group (24 students) receiving conventional instruction. Research instruments included a learning motivation questionnaire and a valid, reliable multiple-choice test covering cognitive learning outcomes (levels C1–C4). Data were analyzed using Multivariate Analysis of Covariance (MANCOVA), with pretest scores serving as the covariate. Hypothesis testing results showed a Wilks' Lambda value of 0.157, an F-calculated value of 136.461, and a significance level of 0.000 ($p < 0.05$); consequently, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_a) was accepted. It can be concluded that *Zep Quiz*-assisted physics instruction significantly improved learning motivation (mean score of 29.16) and cognitive learning outcomes (posttest mean of 86.88) for 10th-grade students studying Energy Sources, with a net contribution of 84.3%, particularly regarding higher-order thinking skills. Gamification features, such as leaderboards and real-time feedback, were effective in fostering healthy competition and active student engagement throughout the learning process.

Keywords: *Zep Quiz*, MANCOVA, gamification, learning motivation, cognitive learning outcomes.