

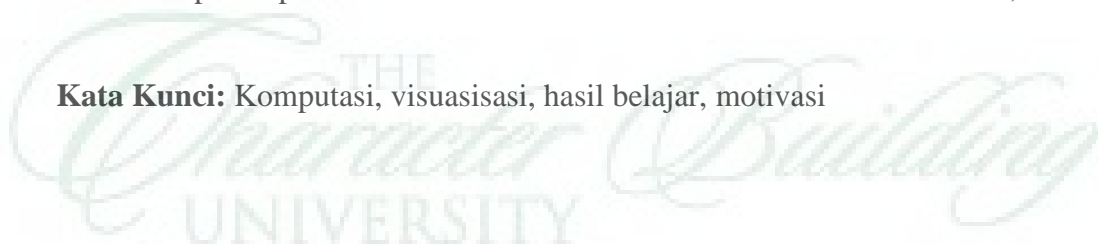
**PENGEMBANGAN MEDIA PEMBELAJARAN MATERI LARUTAN
ELEKTROLIT DAN NON-ELEKTROLIT BERBASIS VISUALISASI
HASIL PERHITUNGAN KIMIA KOMPUTASI**

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Abstrak

Penelitian ini adalah untuk mengetahui hasil analisis kebutuhan dan pemakaian media pembelajaran materi larutan elektrolit dan nonelektrolit; mengembangkan media pembelajaran berbasis visualisasi hasil perhitungan kimia komputasi materi larutan elektrolit dan nonelektrolit berdasarkan BSNP; mengetahui peningkatan hasil belajar siswa setelah dibelajarkan menggunakan media berbasis visualisasi hasil perhitungan kimia komputasi; mengetahui motivasi belajar siswa setelah penerapan media; dan mengetahui hubungan antara motivasi terhadap hasil belajar siswa. Jenis penelitian ini menggunakan pemodelan ADDIE (*Analysis, Design, Development, Implementation, and Evaluation*). Populasi penelitian ini adalah seluruh siswa kelas X semester genap tahun ajaran 2021/2022 MAN 2 Padangsidempuan. Sampel penelitian ini adalah kelas X MIA-3 sebanyak 30 siswa dengan menggunakan teknik *purposive sampling*. Instrumen penelitian ini berupa angket berdasarkan BSNP, tes objektif yang valid dan reliabel, dan angket motivasi belajar siswa. Analisis data yang digunakan adalah dengan bantuan program *SPSS 22 for windows* dengan tingkat signifikansi 5%. Hasil penelitian menunjukkan bahwa: dibutuhkan media pembelajaran yang dapat mengatasi kesulitan belajar siswa; media pembelajaran materi larutan elektrolit dan nonelektrolit berbasis visualisasi hasil perhitungan kimia komputasi berdasarkan hasil validasi diperoleh 95%; terdapat peningkatan hasil belajar siswa setelah dibelajarkan dengan media berbasis visualisasi hasil perhitungan kimia komputasi sebesar 85,64%; motivasi belajar siswa setelah menggunakan media pembelajaran berbasis visualisasi hasil perhitungan kimia komputasi diperoleh sebesar 87,97; dan terdapat hubungan motivasi terhadap hasil belajar secara signifikan ($\alpha=5\%$) pada siswa yang dibelajarkan dengan media berbasis visualisasi hasil perhitungan kimia komputasi pada materi larutan elektrolit dan non elektrolit sebesar 0,595.

Kata Kunci: Komputasi, visualisasi, hasil belajar, motivasi



DEVELOPMENT OF LEARNING MEDIA MATERIALS FOR ELECTROLYTE AND NON-ELECTROLYTE SOLUTIONS BASED ON VISUALIZATION OF COMPUTATIONAL CHEMICAL CALCULATION RESULTS

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Abstract

This research is to find out the results of the analysis of the needs and use of learning media for electrolyte and non-electrolyte solution materials; developing learning media based on visualization of the results of computational chemical calculations on electrolyte and non-electrolyte solution materials based on BSNP; knowing the increase in student learning outcomes after being taught using visualization-based media on the results of computational chemical calculations; knowing students' learning motivation after the application of media; and knowing the relationship between motivation on student learning outcomes. This type of research uses ADDIE modeling (Analysis, Design, Development, Implementation, and Evaluation). The population of this study were all class X students in the even semester of the 2021/2022 academic year MAN 2 Padangsidempuan. The sample of this research is class X MIA-3 as many as 30 students using purposive sampling technique. The research instrument was a questionnaire based on the BSNP, valid and reliable objective tests, and a student learning motivation questionnaire. The data analysis used was with the help of the SPSS 22 for windows program with a significant level of 5%. The results of the study show that: learning media are needed that can overcome students' learning difficulties; learning media for electrolyte and non-electrolyte solutions based on visualization of the results of computational chemical calculations based on validation results obtained 95%; there is an increase in student learning outcomes after being taught with visualization-based media on the results of computational chemical calculations of 85.64%; students' learning motivation after using learning media based on visualization of the results of computational chemical calculations was obtained at 87.97; and there is a significant relationship between motivation and learning outcomes ($\alpha = 5\%$) in students who are taught with visualization-based media on the results of computational chemical calculations on electrolyte and non-electrolyte solutions of 0.595.

Keywords: Computation, visualization, learning outcomes, motivation