

ABSTRAK

Santri Angelia Damanik : **Pengembangan Media *Mobile Augmented Reality* untuk Siswa Kelas XII SMA Pada Materi Senyawa Turunan Alkana**. Tesis. Medan: Program Studi Kimia, Pascasarjana Universitas Negeri Medan, 2024.

Penelitian ini bertujuan untuk mengembangkan media *mobile Augmented Reality* (AR) sebagai media belajar pada materi senyawa turunan alkana; menganalisis perbedaan peningkatan hasil belajar siswa ditinjau dari media pembelajaran yang digunakan; menganalisis perbedaan hasil belajar antara siswa yang memiliki motivasi belajar tinggi dan rendah; menganalisis hubungan motivasi dan media belajar ditinjau dari peningkatan hasil belajar siswa; menganalisis kemampuan literasi digital siswa melalui penggunaan media yang dikembangkan; dan menganalisis respon siswa terhadap media yang dikembangkan. Metode penelitian menggunakan model ADDIE (*Analysis, Development, Design, Implementation and Evaluation*). Populasi dalam implementasi media yang dikembangkan adalah seluruh siswa kelas XII IPA SMA Negeri 18 Medan T.A 2023/2024. Sampel penelitian adalah kelas XII IPA 1 (eksperimen 1) dan kelas XII IPA 2 (eksperimen 2) masing-masing berjumlah 26 orang. Instrumen penelitian berupa lembar wawancara, angket berdasarkan BSNP yang dimodifikasi, tes objektif hasil belajar yang valid dan reliabel, lembar angket motivasi belajar, lembar angket kemampuan literasi digital dan lembar angket respon siswa terhadap media. Teknik analisis data yang digunakan *Two Way ANOVA* dengan uji *General Linear Model* pada program *SPSS 26*. Hasil penelitian menunjukkan bahwa: ¹guru dan siswa membutuhkan media belajar berbasis digital yang dapat menampilkan bentuk 3D dari molekul; ²media *mobile Augmented Reality* (AR) pada materi senyawa turunan alkana yang telah dikembangkan memperoleh hasil validasi dengan nilai rata-rata 4,59 tergolong dalam kategori sangat layak; ³ada perbedaan peningkatan hasil belajar siswa yaitu, siswa yang diajarkan dengan media *mobile Augmented Reality* (AR) (rata-rata N-gain = 78,63) dan siswa yang diajarkan dengan media *power point iSpring free* (rata-rata N-gain = 60,05); ⁴peningkatan hasil belajar siswa yang memiliki motivasi tinggi diperoleh dengan nilai rata-rata sebesar 71,67, sedangkan siswa yang memiliki motivasi belajar rendah memperoleh nilai rata-rata peningkatan hasil belajar sebesar 65,37; ⁵ada interaksi antara media pembelajaran dengan tingkat motivasi ditinjau dari peningkatan hasil belajar siswa dengan nilai koefisien korelasi (r) sebesar 0,841; ⁶kemampuan literasi digital siswa kelas eksperimen 1 berada pada kategori *baik* kemampuan literasi digital siswa kelas eksperimen 2 berada pada kategori sedang; dan ⁷respon siswa terhadap media yang dikembangkan diperoleh pada nilai sebesar 86,80% termasuk kategori sangat baik.

Kata kunci : *Augmented Reality*, hasil belajar, literasi digital, senyawa turunan alkana.

ABSTRACT

Santri Angelia Damanik : **Media Development Mobile Augmented Reality for Grade XII Senior High School Students on Alkane Derivative Compounds.** Thesis. Medan: Chemistry Study Program, State university of Medan Postgraduate, 2024.

This research was aimed at developing media mobile Augmented Reality (AR) as a learning media on alkane derivative compounds; analyzing the differences in improvement of students' learning outcomes in terms of the learning media used; analyzing the differences in learning outcomes among students who had high and low learning motivation; analyzing the relationship between motivation and learning media in terms of improving students' learning outcomes; analyzing students' digital literacy skills through the use of developed media; and analyzing students' responses to the developed media. The research method used the ADDIE model (Analysis, Development, Design, Implementation and Evaluation). The population in implementing the media being developed was all students in grade XII Science at SMA Negeri 18 Medan academic year 2023/2024. The research samples were grade XII IPA 1 (experiment 1) and grade XII IPA2 (experiment 2), each consisted of 26 people. The research instruments included interview sheets, questionnaires based on modified BSNP, objective tests of validity and reliable learning outcomes, learning motivation questionnaire sheets, digital literacy ability questionnaire and students' response questionnaire sheets to the media. Data analysis techniques used Two Way ANOVA with test General Linear Model's on the program SPSS 26. The research shows that:¹teachers and students need digital-based learning media that can display the 3D shape of molecules; ²media mobile Augmented Reality (AR) on the alkane derivative compound material that has been developed obtained validation results with an average value of 4.59, classified in the very feasible category; ³there is a difference in the increase in students' learning outcomes, namely, students who were taught with media mobile Augmented Reality (AR) (average N-gain = 78.63) and students were taught with media iSpring power point free (average N-gain = 60.05);⁴an increase in the learning outcomes of students who had high motivation was obtained with an average score of 71.67, while students who had low motivation to learn obtained an average score of increased learning outcomes of 65.37; ⁵there is an interaction between learning media and the level of motivation in terms of increasing student learning outcomes with a correlation coefficient (r) of 0.841; ⁶the digital literacy abilities of experimental class 1 students are in the good category, the digital literacy skills of experimental class 2 students are in the medium category; and ⁷students' responses to the media developed are obtained at a score of 86.80%, included in the excellent category.

Keywords :Augmented Reality, learning outcomes, digital literacy, alkane derivative compounds.