

PENGEMBANGAN MEDIA INTERAKTIF BERBASIS SOSIOSCIENTIFIC ISSUES BERBANTUAN AR UNTUK MENINGKATKAN KEMAMPUAN BERPIKIR KRITIS DAN REGULASI DIRI SISWA PADA MUATAN IPA SD

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ABSTRAK

Penguasaan Kemampuan berpikir kritis dan regulasi diri peserta didik dalam pembelajaran IPA sekolah dasar masih memerlukan penguatan. Realitas tersebut mengisyaratkan perlunya media pembelajaran berciri interaktif dan kontekstual. Kajian ini diarahkan menghasilkan media berbasis *Socioscientific Issues* berbantuan *Augmented Reality* guna memperkuat kemampuan berpikir kritis dan regulasi diri peserta didik kelas V sekolah dasar. Kerangka *Research and Development* diimplementasikan melalui ADDIE. Hasil validasi oleh ahli materi, ahli media, dan ahli pembelajaran memperlihatkan bahwa produk hasil pengembangan terqualifikasi sangat layak. Kepraktisan produk tercermin dari rerata guru 4,00 dan respons peserta didik 3,73 berkategori sangat praktis. Uji-t menghasilkan signifikansi $p < 0,001$. Efektivitas media terefleksi melalui kenaikan rerata skor peserta didik dari pretest 52,50 menjadi posttest 80,59 dengan indeks N-Gain 0,59 berkategori sedang. Regulasi diri peserta didik turut mengalami peningkatan dari 46,06 menjadi 53,82. Berdasarkan keseluruhan pengujian, produk memenuhi kriteria valid, praktis, dan efektif diterapkan.

Kata kunci: berpikir kritis, regulasi diri, media interaktif, *socioscientific issues*, *augmented reality*

DEVELOPMENT OF INTERACTIVE MEDIA BASED ON SOCIOSCIENTIFIC ISSUES ASSISTED WITH AR TO IMPROVE STUDENTS' CRITICAL THINKING ABILITIES AND SELF-REGULATION IN ELEMENTARY SCIENCE CONTENT

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ABSTRACT

The enhancement of elementary school students' critical thinking skills and self-regulation in science learning remains a significant educational concern. This condition highlights the need for learning media characterized by interactive and contextual features. Accordingly, this study was conducted to develop a Socioscientific Issues (SSI)-based learning media integrated with Augmented Reality (AR) to strengthen the critical thinking skills and self-regulation of fifth-grade elementary school students. The study adopted the Research and Development approach using the ADDIE model. Validation conducted by subject matter experts, media experts, and instructional experts confirmed that the developed product achieved a highly valid classification. The practicality evaluation yielded a mean score of 4.00 from the teacher and 3.73 from the students, indicating that the media was highly practical. The independent sample t-test revealed a statistically significant result ($p < 0.001$). The effectiveness of the developed media was reflected in the increase of students' mean scores from 52.50 in the pretest to 80.59 in the posttest, with an N-Gain index of 0.59, indicating a moderate improvement. Students' self-regulation also improved, increasing from 46.06 to 53.82. Overall, the findings confirmed that the developed learning media fulfilled the criteria of validity, practicality, and effectiveness for implementation in elementary science learning.

Keywords: *critical thinking, self-regulation, interactive media, socioscientific issues, augmented reality.*