

**DEVELOPMENT OF ANDROID-BASED INTERACTIVE
MULTIMEDIA TO ENHANCE CRITICAL THINKING
SKILLS IN LEARNING MATTER**

RESEARCH PAPER

Submitted as Requirement to Obtain Degree of *Sarjana Pendidikan* in
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Skripsi ini diajukan untuk memenuhi salah satu syarat memperoleh gelar Sarjana Pendidikan pada Program Studi International Program on Science Education (IPSE) Fakultas Pendidikan Matematika dan Ilmu Pengetahuan Alam

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DECLARATION

I do hereby declare that every aspect was written in this research paper entitled “Development of Android-Based Interactive Multimedia to Enhance Critical Thinking Skills in Learning Matter” genuinely results of my original idea, efforts, and works. The theories, finding of experts, opinions, and others contained in this paper have been quoted or referenced based on scientific code from UPI and following scientific ethics that applies in scholarly society. This declaration is created truthfully and consciously. When an infringement towards scientific ethics subsequently is found or if there is a claim of any others towards the authenticity of this research paper, hence I am willing to be responsible and accept academic sanctions correspond to the rules.

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ABSTRACT

The development of science and technology in the 21st Century requires students to develop critical thinking skills. However, according to the PISA test, the scores obtained by Indonesian students are relatively low. It indirectly indicates that students' critical thinking skills are still in the low category. Interactive multimedia is one of the learning media that can enhance critical thinking skills because it facilitates student-centered learning. This research aims to develop android-based interactive multimedia to enhance critical thinking skills in learning matter. This study used a developmental research method consisting of analysis, design, development, implementation, validation, evaluation, and one group pretest-posttest to analyze the impact of the interactive multimedia on students' critical thinking skills. The subject was 30 students of Private Junior High School in Bandung Barat. The instruments used were expert's judgment rubric, students' questionnaire, and objective test used for pretest and posttest. The average score of experts' validations using the V index is 0.863, which is classified as valid. And then, there are 89.23% of students gave a positive response toward the application. Based on the analysis result, the N-Gain score is 0.52 which is categorized as a medium improvement. It means that there is a significant difference in students' critical thinking skills with medium improvement. The indicator with the highest improvement is an explanation with 0.55. This result shows that the application is valid and ready to be used in the learning process.

Keywords: *Students' Critical Thinking Skills, Android, Interactive Multimedia, Matter.*

PENGEMBANGAN MULTIMEDIA INTERAKTIF BERBASIS ANDROID UNTUK MENINGKATKAN KETERAMPILAN BERPIKIR KRITIS DALAM PEMBELAJARAN ZAT

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ABSTRAK

Perkembangan sains dan teknologi pada abad ke 21 menuntut siswa untuk mengembangkan keterampilan berpikir kritis. Namun, mengacu pada tes yang dilakukan oleh PISA, skor pada kategori sains yang didapat oleh siswa Indonesia tergolong rendah. Hal tersebut secara tidak langsung menunjukkan bahwa keterampilan berpikir siswa Indonesia masih dalam kategori rendah. Multimedia interaktif merupakan salah satu media pembelajaran yang dapat digunakan untuk meningkatkan keterampilan berpikir kritis karena memfasilitasi pembelajaran yang berpusat pada siswa. Penelitian ini bertujuan untuk mengembangkan multimedia interaktif berbasis Android untuk meningkatkan keterampilan berpikir kritis dalam pembelajaran zat. Penelitian ini menggunakan metode pengembangan yang terdiri dari analisis, desain, pengembangan, implementasi, validasi, evaluasi, dan pretest-posttest satu kelompok untuk menganalisis pengaruh aplikasi terhadap keterampilan berpikir kritis siswa. Subjek penelitian ini adalah 30 siswa SMP di Bandung Barat. Instrumen yang digunakan adalah rubrik penilaian ahli, angket siswa, dan tes objektif yang digunakan untuk pretest dan posttest. Hasil rata-rata validasi ahli dengan menggunakan indeks V adalah 0.863 dan tergolong valid. Kemudian, ada 89.23% siswa yang memberikan respon positif terhadap aplikasi tersebut. Berdasarkan hasil analisis diperoleh, nilai N-Gain sebesar 0.52 yang dikategorikan sebagai peningkatan sedang. Hal itu menunjukkan terdapat perbedaan yang signifikan pada kemampuan berpikir kritis siswa dengan peningkatan sedang. Indikator berpikir kritis dengan peningkatan paling tinggi adalah penjelasan dengan nilai sebesar 0.55. Hasil ini menunjukkan bahwa aplikasi sudah valid dan siap digunakan dalam proses pembelajaran.

Kata Kunci: *Keterampilan Berpikir Kritis Siswa, Multimedia berbasis Android, Zat.*

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