

**PENGEMBANGAN PUZZLE AR BERBASIS *UNPLUGGED CODING*  
UNTUK MENINGKATKAN KEMAMPUAN *CRITICAL THINKING* SISWA  
KELAS VI SEKOLAH DASAR**

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**ABSTRAK**

Penelitian ini dilatarbelakangi oleh rendahnya kemampuan *critical thinking* siswa kelas VI SD pada pembelajaran IPAS, khususnya muatan IPA materi sistem tata surya yang bersifat abstrak dan sulit divisualisasikan secara langsung. Kondisi ini menyebabkan siswa kurang terlibat aktif dalam proses pembelajaran serta kesulitan memahami konsep secara mendalam. Penelitian ini bertujuan untuk: (1) menghasilkan media puzzle AR berbasis *unplugged coding*, (2) mengkaji kevalidan dari media puzzle AR berbasis *unplugged coding*, (3) mengkaji kepraktisan dari penggunaan media puzzle AR berbasis *unplugged coding*, dan (4) mengkaji efektivitas dari implementasi media puzzle AR berbasis *unplugged coding*. Penelitian ini menggunakan metode *Research and Development* (R&D) dengan model ADDIE yang mencakup tahap analisis, perancangan, pengembangan, implementasi, dan evaluasi. Metode pengumpulan data penelitian menggunakan kuesioner validasi ahli media dan materi serta kuesioner respons guru dan respons siswa dan *esssay* kemampuan *critical thinking* siswa. Data dianalisis menggunakan analisis deskriptif kualitatif, deskriptif kuantitatif, dan uji-t untuk menguji efektivitas produk. Hasil penelitian menunjukkan bahwa media puzzle AR berbasis *unplugged coding* dinyatakan sangat valid oleh ahli media dan ahli materi sehingga layak digunakan dalam pembelajaran. Hasil uji kepraktisan berdasarkan respons guru dan respons siswa menunjukkan bahwa media puzzle AR berbasis *unplugged coding* sangat praktis digunakan dalam pembelajaran. Selanjutnya, hasil uji efektivitas menunjukkan adanya perbedaan yang signifikan antara kemampuan *critical thinking* siswa sebelum dan sesudah menggunakan media puzzle AR berbasis *unplugged coding* dengan nilai signifikansi uji *paired sample t-test* sebesar 0,000 ( $p < 0,05$ ). Dengan demikian media puzzle AR berbasis *unplugged coding* yang dikembangkan dinyatakan efektif dalam meningkatkan kemampuan *critical thinking* siswa kelas VI SD.

**Kata kunci:** Puzzle AR, *Unplugged Coding*, *Critical Thinking*, Media Pembelajaran, IPAS

**DEVELOPMENT OF AN AR PUZZLE BASED ON UNPLUGGED CODING  
TO IMPROVE THE CRITICAL THINKING SKILLS OF GRADE VI  
ELEMENTARY SCHOOL STUDENTS**

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**ABSTRACT**

*This research is motivated by the low critical thinking ability of grade VI elementary school students in science learning, especially the content of science material on the solar system which is abstract and difficult to visualize directly. This condition causes students to be less actively involved in the learning process and have difficulty understanding concepts in depth. This study aims to: (1) produce unplugged coding-based AR puzzle media, (2) examine the validity of unplugged coding-based AR puzzle media, (3) examine the practicality of using unplugged coding-based AR puzzle media, and (4) examine the effectiveness of the implementation of unplugged coding-based AR puzzle media. This research uses the Research and Development (R&D) method with the ADDIE model which includes the stages of analysis, design, development, implementation, and evaluation. The research data collection method used validation questionnaires of media and material experts as well as questionnaires on teacher responses and student responses and essays on students' critical thinking skills. The data was analyzed using qualitative descriptive analysis, quantitative descriptive, and t-test to test the effectiveness of the product. The results of the study show that AR puzzle media based on unplugged coding is stated to be very valid by media experts and material experts so that it is suitable for use in learning. The results of the practicality test based on teacher responses and student responses showed that AR puzzle media based on unplugged coding was very practical to use in learning. Furthermore, the results of the effectiveness test showed a significant difference between students' critical thinking skills before and after using the AR puzzle media based on unplugged coding and the significance value of the paired sample t-test of 0.000 ( $p < 0.05$ ). Thus, the AR puzzle media based on unplugged coding developed was declared effective in improving the critical thinking skills of grade VI elementary school students.*

**Keywords:** *AR Puzzle, Unplugged Coding, Critical Thinking, Learning Media, IPAS*