

**ENHANCING STUDENTS' CRITICAL THINKING THROUGH  
NASA SCIENCE AS INTERACTIVE MULTIMEDIA IN  
LEARNING SOLAR SYSTEM**

**RESEARCH PAPER**

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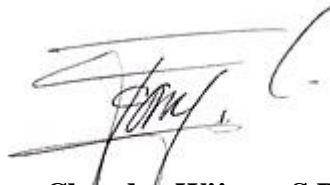
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# ENHANCING STUDENTS' CRITICAL THINKING THROUGH NASA SCIENCE AS INTERACTIVE MULTIMEDIA IN LEARNING SOLAR SYSTEM

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## ABSTRACT

Science and technology advancement in the 21<sup>st</sup> Century requires several life skills that everyone must learn, one of which is Critical Thinking. Critical thinking skill is often defined as a process of metacognitive which consists of several sub-skills (e.g., analysis, inference, and evaluation) that increase the chances of solving a problem or producing a logical conclusion to an argument. This research attempted to implement NASA Science as Interactive Multimedia to enhance students' critical thinking in learning Solar System. Interactive Multimedia is student-centered, allowing students to play an active role in deciding how to learn to promote the critical thinking skills of students. This study used a pre-experimental method with one group pretest-posttest design. The sampling used was convenience sampling, which participated in 42 7<sup>th</sup> grade students of a private school in Bandung. The Objective Test was used as a research instrument for both pretest and posttest. These test items were designed according to Facione's indicators of Critical Thinking Skills. Based on the analysis result, the value of  $\langle g \rangle$  is 0.48. According to the Wilcoxon Signed Rank Test, the hypothesis in this research was accepted. The value of Asymp. sig. (2-tailed) is 0.00, with a sig.  $\alpha = 0.05$ . Thus, the result of this research shows that: There is an enhancement of students' critical thinking after using NASA Science in learning Solar System.

**Keywords:** *Students' Critical Thinking Skills, NASA Science, Interactive Multimedia, Solar System.*

**MENINGKATKAN KETERAMPILAN BERPIKIR KRITIS SISWA  
MELALUI NASA SCIENCE SEBAGAI MULTIMEDIA INTERAKTIF  
DALAM PEMBELAJARAN TATA SURYA**

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**ABSTRAK**

Kemajuan sains dan teknologi di abad 21 membutuhkan beberapa keterampilan hidup yang harus dipelajari oleh setiap orang, salah satu di antaranya adalah Berpikir Kritis. Keterampilan berpikir kritis cenderung didefinisikan sebagai proses metakognitif yang terdiri dari beberapa sub-keterampilan (seperti analisis, inferensi, dan evaluasi) yang meningkatkan peluang suatu individu dalam memecahkan suatu masalah atau menghasilkan kesimpulan logis terhadap suatu argumen. Penelitian ini mengimplementasikan *NASA Science* sebagai Multimedia Interaktif untuk meningkatkan pemikiran kritis siswa dalam mempelajari Tata Surya. Multimedia Interaktif berpusat pada siswa, memungkinkan siswa untuk memainkan peran aktif dalam memutuskan bagaimana belajar untuk mendorong keterampilan berpikir kritis siswa. Penelitian ini menggunakan metode *pre-experimental* dengan *one group pretest-posttest design*. Pengambilan sampel yang digunakan adalah *convenience sampling* dengan partisipan 42 siswa kelas 7 dari salah satu sekolah swasta di Bandung. Tes Objektif digunakan sebagai instrumen penelitian untuk pre-test dan post-test. Item-item tes ini dirancang sesuai dengan indikator Kemampuan Berpikir Kritis Facione. Berdasarkan hasil analisis, nilai  $\langle g \rangle$  yang didapat adalah 0.48. Menurut *Wilcoxon Signed Rank Test*, hipotesis dalam penelitian ini diterima berdasarkan nilai *Asymp. sig. (2-tailed)* yang menunjukkan 0,00 dengan sig.  $\alpha = 0.05$ . Dengan demikian, hasil penelitian ini menunjukkan bahwa: Adanya peningkatan berpikir kritis siswa setelah menggunakan *NASA Science* dalam mempelajari Tata Surya.

***Kata Kunci:*** Keterampilan Berpikir Kritis Siswa, *NASA Science*, *Multimedia Interaktif*, *Tata Surya*.

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