

THE PROFILE OF STUDENTS' CRITICAL THINKING SKILL MEASURED BY SCIENCE VIRTUAL TEST ON LIVING THINGS AND ENVIRONMENTAL SUSTAINABILITY THEME

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ABSTRACT

The aims of this study are: (1) to investigate the level of students' critical thinking skill generally and based on science topics embodied on living things and environmental sustainability theme, (2) to examine the critical thinking difference among different gender, academic achievement, and cognitive development level of the students, and (3) to investigate the correlation between critical thinking skill with students' academic achievement and logical thinking skill. This research was conducted due to the importance of critical thinking evaluation or measurement to get the current skill description as the basic consideration for further critical thinking skill improvement in lower secondary science. The method used in this study was descriptive research method. 331 seventh grade students taken from five lower secondary schools in Cirebon were tested to get the critical thinking and logical thinking scores data, by using Science Virtual Test for critical thinking skill measurement based on Inch, and Test of Logical Thinking (TOLT). Generally, the mean scores on eight Inch' critical thinking elements and the overall score from statistical descriptive shows a moderate attainments level, with the range $43.74 \leq \text{score} < 74.59$. The students also achieve moderate overall critical thinking skill level on each science topics embodied on living things and environmental sustainability theme. In another side, at significance level 0.05 there is no significant difference between male and female critical thinking skill, while significant difference is founded on three different academic achievement level (Low, Middle, and High) and three cognitive development level (Concrete, Transitional, and Formal) groups on their critical thinking skill. Supporting those tendency, it is also founded that there is moderate positive correlation ($r = 0.400$) between students' critical thinking skill with students' academic achievement and weak positive correlation ($r = 0.295$) between students' critical thinking skill and logical thinking skill. At the end, the holistic analysis presents that there is relationship between logical thinking and critical thinking skills, which eventually also related to students' academic achievement.

Keywords: critical thinking, logical thinking skill, science virtual test, students' academic achievement,

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PROFIL TINGKAT KEMAMPUAN BERPIKIR KRITIS SISWA YANG DIUKUR DENGAN *SCIENCE VIRTUAL TEST* DALAM TEMA KELESTARIAN LINGKUNGAN DAN MAHLUK HIDUP

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ABSTRAK

Penelitian ini bertujuan untuk; (1) menelusuri tingkat kemampuan berpikir kritis siswa, baik secara umum maupun berdasarkan topik-topik sains yang terkandung dalam ranah tema pelestarian lingkungan dan mahluk hidup, (2) untuk menguji perbedaan kemampuan berpikir kritis siswa berdasarkan jenis kelamin, tingkat prestasi academic siswa, dan tingkat pengembangan kognitif siswa, (3) untuk menguji hubungan antara kemampuan berpikir kritis siswa dengan prestasi akademik siswa dan tingkat pengembangan kognitif siswa. Penelitian ini dilakukan berdasarkan pentingnya evaluasi atau pengukuran kemampuan berpikir kritis siswa untuk mencapai deskripsi kemampuan terkini sebagai dasar pengembangan tingkat lanjut kemampuan berpikir kritis siswa Sekolah Menengah Pertama (SMP). Metode dalam penelitian ini adalah metode deskriptif. Sebanyak 331 siswa SMP kelas VII di Cirebon telah melakukan tes kemampuan berpikir kritis dan berpikir logis dengan menggunakan *Science Virtual Test* dan *Test of Logical Thinking (TOLT)*, untuk mendapatkan data penelitian. Secara umum, nilai rata-rata siswa dalam delapan elemen berpikir kritis Inch menunjukan tingkat pencapaian kemampuan berpikir kritis “sedang”, dengan nilai nilai antara $43.74 \leq \text{nilai} < 74.59$. Hal yang sama juga ditunjukan pada tingkat pencapaian kemampuan berpikir kritis siswa pada topik-topik sains dalam ranah tema kelestarian lingkungan dan mahluk hidup. Disisi lain, ditemukan tidak terdapat perbedaan yang signifikan antara kemampuan berpikir siswa laki-laki dan perempuan pada tingkat signifikansi 0.05, sedangkan perbedaan yang signifikan ditemukan antara tiga kelompok siswa yang memiliki tingkat prestasi akademik yang berbeda (prestasi rendah, sedang, dan tinggi) dan tingkat perkembangan kognitif yang berbeda (konkret, transisi, dan formal). Untuk mendukung kecenderungan tersebut, ditemukan pula terdapat korelasi positif ($r = 0.400$) antara kemampuan berpikir kritis dan prestasi akademik siswa, dan korelasi positif ($r = 0.295$) antara kemampuan berpikir kritis dan kemampuan berpikir logis siswa. Dengan demikian, berdasarkan analisis secara holistik, ditemukan hubungan antara kemampuan berpikir logis dan berpikir kritis, yang pada akhirnya akan mempengaruhi prestasi akademik siswa.

Kata Kunci: Berpikir kritis, berpikir logis, *science virtual test*, prestasi akademik siswa.

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