

ABSTRAK

Penelitian ini menganalisis pengaruh suhu, pencahayaan, dan jenis musik terhadap tingkat konsentrasi dan memori jangka pendek mahasiswa. Kajian penelitian juga, membandingkan kemampuan kognitif mahasiswa Teknik Industri dan Psikologi. Metode yang digunakan adalah *Post-Test Only Control Group Design* dengan delapan kombinasi perlakuan (suhu 24°C & 30°C, pencahayaan 200 & 600 lux, jenis musik nature therapy & instrumental). Pengukuran dilakukan menggunakan *stroop test* dan *short term memory span test* menggunakan aplikasi *Design Tools 4.1.1*. Hasil uji *Two-Way ANOVA* menunjukkan bahwa ketiga faktor dan interaksinya berpengaruh signifikan terhadap konsentrasi dan memori ($p < 0,05$), dengan kombinasi optimal berupa suhu 24°C, pencahayaan 600 lux, dan jenis musik nature therapy. Hasil uji T menunjukkan adanya perbedaan tingkat kognitif diantara mahasiswa Teknik Industri dan Psikologi, di mana Teknik Industri memiliki performa kognitif lebih tinggi. Rekomendasi disusun untuk desain lingkungan belajar yang optimal berbasis ergonomi kognitif.

Kata kunci: Konsentrasi, Memori Jangka Pendek, Suhu, Pencahayaan, Musik.

ABSTRACT

This study analyzes the effect of temperature, lighting, and type of music on the level of concentration and short-term memory of students. The study also compares the cognitive abilities of Industrial Engineering and Psychology students. The method used is Post-Test Only Control Group Design with eight treatment combinations (temperature 24°C & 30°C, lighting 200 & 600 lux, nature therapy & instrumental music types). Measurements were made using the stroop test and short-term memory span test using the Design Tools 4.1.1 application. The results of the Two-Way ANOVA showed that the three factors and their interactions had a significant effect on concentration and memory ($p < 0.05$), with the optimal combination being temperature 24°C, lighting 600 lux, and nature therapy music types. T-test results showed differences in cognitive levels between Industrial Engineering and Psychology students, where Industrial Engineering had higher cognitive performance. Recommendations were made for the design of an optimal learning environment based on cognitive ergonomics.

Keywords: *Concentration, Short-term Memory, Temperature, Lighting, Music.*