

UNIVERSITI TEKNOLOGI MARA

**THE EFFECT OF LUMINANCE ON DISTANCE
VISUAL PERFORMANCE**

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Dissertation submitted in partial fulfillment of the requirements for the

Bachelor (Hons.) of Optometry

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AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This topic has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

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ABSTRACT

Reading under different luminance level has profound effects on reading performance. However, the effects on reading performance at distance reading were remains to be determined. To investigate this issue, the performance of reading rate at distance was assessed toward difference luminance. Twenty-two (22) normally sighted university students aged 18 to 25 years old were recruited in this research. The subjects were asked to read aloud four different texts with luminance of 25%, 50%, 75%, and 100% in random order at 6 m. The time taken to complete each text was recorded and any reading error made was noted. The reading speed was measured in words per minute (wpm). The reading rate was increased from L25% to L75% ($M = -12.83$, 95% CI $[-19.06, -6.60]$), from L50% to L75% ($M = -14.77$, 95% CI $[-23.37, -6.17]$), and from L100% to L75% ($M = -18.52$, 95% CI $[-28.15, -8.90]$). The peak was found at 75% luminance. These findings indicate that 75% luminance levels promote good reading performance in normally sighted university students.

Keywords: luminance, reading performance, distance, wpm.

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