

**UNIVERSITI TEKNOLOGI MARA**

**COMPARISON OF READING  
PERFORMANCE BETWEEN  
CONTEXTUAL SENTENCES AND  
RANDOM WORDS IN FOUR  
DIFFERENT AGE GROUPS**

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Thesis submitted in fulfillment  
of the requirements for the degree of  
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## AUTHOR'S DECLARATION

I declare that the work in this thesis 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 thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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## ABSTRACT

Reading is essential in most daily activities to extract text information. Reading performance is an indication of near vision function and functional vision. There were two possible arrangements of sentence structure in designing the reading charts; continuous text and unrelated words. However, the effect of sentence structures on reading performance in different age groups were remained inconclusive. This study was carried out to compare the reading performance between contextual sentences and random words reading charts in four different age groups. One hundred and sixty subjects with normal vision participated in this study [40 children (8 to 12 years old), 40 teenagers (13 to 19 years old), 40 young adults (20 to 39 years old), and 40 adults ( $\geq 40$  years old)]. The reading performance was investigated in terms of acuity, rate, and error. The Buari-Chen Malay Reading Chart (BCMRC) was used as the reading tool for this study because it is Malay language and it contained both contextual sentences (CS) and random words (RW) features. The reading distance was set at 40 cm with illumination ranging between 250 to 330 lux. Subjects were asked to read the CS set and RW set of BCMRC aloud at random. The whole reading session was audio taped for data extraction and analysis purposes. The comparison of reading performance between contextual sentences and random words showed a statistically significant difference in all quantified reading parameters: acuity [reading acuity ( $t_{(318)} = -5.17, p < 0.01$ ) and critical print size ( $t_{(318)} = -4.75, p < 0.01$ )], rate [reading speed ( $t_{(318)} = 14.06, p < 0.01$ ) and maximum reading speed ( $t_{(318)} = 15.16, p < 0.01$ )], and error [reading error ( $t_{(318)} = -7.91, p < 0.01$ )]. In relation to a different age groups, the results showed a statistically significant difference of reading performance among four different age groups for acuity [reading acuity ( $F_{(6, 310)} = 6.92, p < 0.01$ ; Wilks'  $\Lambda = 0.78$ ; partial  $\eta^2 = 0.12$ ) and critical print size ( $F_{(6, 310)} = 8.27, p < 0.01$ ; Wilks'  $\Lambda = 0.74$ ; partial  $\eta^2 = 0.14$ )], rate [reading speed ( $F_{(6, 310)} = 13.89, p < 0.01$ ; Wilks'  $\Lambda = 0.62$ ; partial  $\eta^2 = 0.21$ ) and maximum reading speed ( $F_{(6, 310)} = 14.15, p < 0.01$ ; Wilks'  $\Lambda = 0.62$ ; partial  $\eta^2 = 0.22$ )], and error [reading error ( $F_{(6, 310)} = 2.88, p = 0.01$ ; Wilks'  $\Lambda = 0.90$ ; partial  $\eta^2 = 0.05$ )]. This study concluded that CS set provided a significantly better reading performance compared to RW set for all age groups. The reading performance was improved from children to teenagers, plateau towards young adults, and slowly deteriorated in adults' age.

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