

UNIVERSITI TEKNOLOGI MARA

**COMPARISON OF VERGENCE STATUS
FOLLOWING READING ON COMPUTER
SCREEN AND PRINTED TEXT**

NURUL HUSNA BINTI ISMAIL

BACHELOR OF OPTOMETRY (HONS)

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Name of Candidate : Nurul Husna Binti Ismail

Candidate ID No. : 2011835852

Programme : Bachelor in Optometry (Hons)

Faculty : Health Sciences

Thesis Title : Comparison of Vergence Status Following
Reading on Computer Screen And Printed Text

Signature of Candidate :

July 2015

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ABSTRACT

Purpose: This study was conducted to assess difference in vergence status following reading on computer screen and printed text and to determine the visual comfort with two different format of novel display. **Method:** Thirty subjects were selected among young adults in UITM Puncak Alam, aged 19 to 25years old. The subjects were screened prior to the data collection which included visual acuity, refractive error, stereopsis and baseline for vergence tests such as near point of convergence (NPC), vergence facility, horizontal and vertical phoria and AC/A ratio. The subjects first need to answer the questionnaire regarding any visual status or discomfort. After that, the subjects need to do baseline vergence test. Then, reading novel via printed text for 10 minutes and answer a questionnaire again after reading the novel regarding their visual status or any related discomfort. Lastly, the subjects need to do the vergence test. Same procedures were repeated for reading on computer screen on the third phase (third day). **Results:** Significant differences were shown in mean of vergence status following reading on computer screen ($t = -0.350$; $p = 0.0072$) and printed text ($t = -0.210$; $p = 0.027$). 16 out of 30 subjects were reported to have poor vergence status following reading on computer screen. Thus, on visual discomfort there were significant differences when comparing between this two media. In both situations, symptoms were reported higher after reading on computer screen. **Conclusion:** There are significant difference in comparison of vergence status following reading on computer screen and printed text. As expected, reading on computer screen will give bad effects on the vergence status and can cause eyestrain thus, increase the visual discomfort of subjects on reading performance.

Keywords: vergence, near point of convergence, vergence facility, AC/A ratio, computer screen, printed text.