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### ILLUMINANCE LEVEL AND ARABIC HANDWRITING PERFORMANCE AT LOWER WORKING PLANE HEIGHT

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#### *Abstract*

Renewable energy such as natural daylight is an important element that influences students' task performance such as reading and writing in schools. Research shows daylight can improve the students' performance in classroom. Acceptable illuminance level recommended by guidelines in the world for learning space is between 300 lux to 500 lux. The illuminance level is measured at the working plane 800mm to 900mm table height, where the window sill height is at the similar height. However, Ulul Albab education traditionally uses a book rest or 'rehal' for Quran 'hafazan' (Quran memorization) that requires Arabic handwriting tasks at working plane height between 250mm to 300mm. Focus of the paper is the students' Arabic handwriting performance at lower working plane height in classroom. The classroom selected in Kolej Permata Insan can seat 24 students based on the ratio of 2.5m<sup>2</sup> floor area per student. The students using 'rehal' at working plane height of 300mm required to handwrite the modified Balsam Alabdulkader-Leat (BAL) eye chart to evaluate their performance based on word per minute (wpm). Results shows that students' Arabic handwriting performance in classrooms with average illuminance level of 603 lux and 494 lux measured at 300 mm working plane height were lower compared to the average of 13.7 wpm to 14.5 wpm. Thus, the average illuminance level measured at 'rehal' 300mm working plane height in existing classrooms were not suitable for Arabic handwriting task.

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**Keywords:** Illuminance level, daylighting, working plane height, 'hafazan' education, students' performance.



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