

Illuminance Level Measurement at Lower Working Plane Height in Islamic Religious School

Raja Nur Syaheeza Raja Mohd Yazit^{1*}, Elina Mohd Husini², Mohd Khedzir Khamis³, Megat Faridullah Zolkefli⁴, Yakubu Aminu Dodo⁵

¹Faculty of Engineering and Built Environment, Universiti Sains Islam Malaysia, Bandar Baru Nilai, 71800 Nilai, Negeri Sembilan, Malaysia
rajanursyaheeza@gmail.com

²Faculty of Engineering and Built Environment, Universiti Sains Islam Malaysia, Bandar Baru Nilai, 71800 Nilai, Negeri Sembilan, Malaysia
elina@usim.edu.my

³Interior Design Programme, Raffles University, Menara Kotaraya, Level 9, #09, 01, Jalan Trus, Bandar Johor Bahru, 80000 Johor Bahru, Johor, Malaysia
MohdKhedzir@raffles-university.edu.my

⁴Faculty of Architecture, Planning and Survey, Universiti Teknologi MARA Sarawak Kampus Samarahan 2, 94300 Kota Samarahan, Sarawak
megat692@uitm.edu.my

⁵Faculty of Engineering and Built Environment, Universiti Sains Islam Malaysia, Bandar Baru Nilai, 71800 Nilai, Negeri Sembilan, Malaysia
drdodo@usim.edu.my

*Corresponding Author

<http://doi.org/10.24191/ajue.v16i3.11076>

Received: 2 April 2020

Accepted: 15 August 2020

Date of Online Publication: 20 October 2020

Published: 20 October 2020

Abstract: Islamic religious school is an institution that integrates Quran *hafazan* (memorization) in the curriculum. Between 2011 to 2017, estimated that 900 new Islamic religious schools were established in Malaysia due to high demands. Designing a classroom layout that receives sufficient daylight is important because it influences the students' task performance such as reading and writing. The standards recommend that any classrooms require an illuminance level between 300 lx to 500 lx when measured at working plane height between 800mm to 900mm, although the working plane height of *rehal* used for *hafazan* is between 250mm to 300mm. This study focused on the illuminance level measured at *rehal* working plane height for Arabic handwriting as a *hafazan* learning task in two selected standardised classrooms at Kolej Genius Insan. The students were required to rewrite the modified Balsam Alabdulkader-Leat (BAL) Arabic eye chart, where the students' Arabic handwriting performance were evaluated based on their word per minute (wpm) scores. Both classrooms' average illuminance level were 507 lx to 603 lx, which were too high based on standards and guidelines. The average Arabic handwriting scores for both classrooms were 9.4 and 12.6 wpm, which shows that the inefficient average illuminance level has caused the students' performance to be very low. It can be concluded that the existing standardised classroom layout design was not suitable for *hafazan* learning tasks at *rehal* working plane height. Thus, the classroom layout design for Islamic religious schools needed further studies, which implicated the unsatisfied built environment of the classrooms and the school education for Islamic religious schools in Malaysia.

Keywords: Arabic handwriting, Daylighting, Illuminance level, *rehal*, working plane