

STUDI TINGKAT PENCAHAYAAN DAN KELELAHAN MATA SISWA DI RUANG KELAS SMAN 1 CANGKRINGAN

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ABSTRAK

Latar Belakang: Pencahayaan ruang kelas merupakan salah satu faktor lingkungan fisik yang berpengaruh terhadap kenyamanan visual siswa selama proses pembelajaran. Intensitas pencahayaan yang tidak sesuai standar dapat menyebabkan gangguan kenyamanan penglihatan dan berpotensi menimbulkan kelelahan mata pada siswa. Oleh karena itu, perlu dilakukan pengukuran pencahayaan ruang kelas serta identifikasi tingkat kelelahan mata siswa untuk mengetahui kondisi lingkungan belajar di sekolah.

Tujuan: Mengetahui tingkat pencahayaan ruang kelas dan kelelahan mata siswa di SMAN 1 Cangkringan.

Metode Penelitian: Penelitian ini merupakan penelitian deskriptif observasional dengan pendekatan cross sectional. Penelitian dilaksanakan di SMAN 1 Cangkringan dengan objek penelitian sebanyak 12 ruang kelas. Pengukuran pencahayaan dilakukan menggunakan lux meter pada 15 titik ukur di setiap kelas. Pengukuran kelelahan mata dilakukan menggunakan kuesioner terhadap 84 siswa yang dipilih menggunakan rumus Slovin dengan margin of error 10%, sehingga diperoleh 7 responden pada setiap kelas. Analisis data dilakukan secara deskriptif dan dibandingkan dengan standar Permenkes Republik Indonesia Nomor 48 Tahun 2016.

Kesimpulan: Sejumlah 75% ruang kelas di SMAN 1 Cangkringan telah memenuhi standar pencahayaan menurut Permenkes RI Nomor 48 Tahun 2016, dan mayoritas siswa tidak mengalami kelelahan mata. Namun juga terdapat 25% ruang kelas dengan pencahayaan di bawah standar serta 28,6% siswa yang mengalami kelelahan mata sehingga perlu dilakukan perbaikan kondisi pencahayaan dan peningkatan upaya menjaga kesehatan mata siswa.

Kata Kunci: pencahayaan ruang kelas, kelelahan mata, lux meter, kesehatan lingkungan sekolah

STUDY OF CLASSROOM LIGHTING LEVELS AND STUDENT EYE FATIGUE IN CLASSROOMS OF SMAN 1 CANGKRINGAN

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ABSTRACT

Background: Classroom lighting is one of the physical environmental factors that affects students' visual comfort during the learning process. Inadequate lighting intensity may cause visual discomfort and potentially lead to eye fatigue among students. Therefore, it is necessary to measure classroom lighting levels and identify students' eye fatigue to determine the condition of the learning environment at school.

Objective: To determine classroom lighting levels and student eye fatigue in SMAN 1 Cangkringan.

Methods: This study employed a descriptive observational design with a cross-sectional approach. The study was conducted at SMAN 1 Cangkringan involving 12 classrooms as research objects. Lighting measurements were carried out using a lux meter at 15 measurement points in each classroom. Eye fatigue assessment was conducted using questionnaires distributed to 84 students selected through the Slovin formula with a 10% margin of error, resulting in 7 respondents from each classroom. Data were analyzed descriptively and compared with the standards of the Regulation of the Minister of Health of the Republic of Indonesia Number 48 of 2016.

Results: The results showed that 9 classrooms (75%) met the minimum lighting standard of 250 lux according to the Regulation of the Minister of Health of the Republic of Indonesia Number 48 of 2016, while 3 classrooms (25%) did not meet the standard. The highest average lighting intensity was found in Class XII B at 326.6 lux, while the lowest was in Class X D at 234.46 lux. Eye fatigue measurement results showed that out of 84 respondents, 60 students (71.4%) were categorized as not fatigued and 24 students (28.6%) were categorized as fatigued, with no respondents classified as severely fatigued.

Conclusion: Seventy-five percent of classrooms at SMAN 1 Cangkringan met the lighting standards according to Indonesian Ministry of Health Regulation (Permenkes RI) Number 48 of 2016, and the majority of students did not experience eye fatigue. However, 25% of classrooms had lighting levels below the standard, and 28.6% of students experienced eye fatigue, indicating the need to improve lighting conditions and enhance efforts to maintain students' eye health.

Keywords: classroom lighting, eye fatigue, lux meter, school environmental health