

INTISARI

Pekerja penyandang disabilitas di lingkungan pendidikan vokasional seperti Sekolah Luar Biasa (SLB) memiliki tantangan tersendiri dalam proses produksi kriya kayu, khususnya dari sisi ergonomi dan keselamatan kerja (K3). Minimnya penelitian yang mengevaluasi kondisi kerja mereka menimbulkan potensi risiko cedera dan ketidaknyamanan dalam aktivitas kerja. Oleh karena itu, penelitian ini bertujuan untuk mengevaluasi kondisi ergonomi, lingkungan kerja, serta risiko keselamatan kerja pada aktivitas produksi kayu di SLB Negeri 1 Bantul Yogyakarta, serta memberikan rekomendasi perbaikan berbasis hasil temuan.

Metode yang digunakan mencakup pendekatan observasional deskriptif dengan teknik penilaian ergonomi melalui metode REBA dan QEC, penilaian risiko kerja menggunakan HIRARC, evaluasi kondisi lingkungan (kebisingan, pencahayaan, dan iklim kerja), serta analisis penerapan prinsip 5S (Seiri, Seiton, Seiso, Seiketsu, Shitsuke). Data dikumpulkan melalui observasi langsung terhadap aktivitas kerja siswa disabilitas dan pengukuran lingkungan kerja menggunakan instrumen standar.

Hasil penelitian menunjukkan bahwa dari 11 aktivitas kerja kriya kayu, dua aktivitas berisiko tinggi terutama pada pemotongan menggunakan *table saw* dan pemotongan dengan skor REBA mencapai 10 dan skor QEC sebesar 62 serta skor HIRARC 20 dalam kategori tinggi. Evaluasi lingkungan kerja mengungkapkan bahwa intensitas pencahayaan di area pemasangan pola, penghalusan dan pembuatan lubang hanya sebesar 248,4 lux, 151,2 lux dan 156,5 lux, jauh di bawah standar 300 lux untuk pekerjaan permesinan. Selain itu, tingkat kebisingan di area pemotongan dan penghalusan mencapai 110,7 dB(A) dan 112 dB(A) dengan durasi lebih dari ambang batas paparan 110 dB(A) dengan durasi maksimum hanya 0,94 menit berdasarkan aturan Permenaker. Penerapan prinsip 5S juga masih rendah, terutama pada aspek standarisasi (20%) dan kedisiplinan (33%). Rekomendasi perbaikan meliputi penggunaan alat pelindung diri (APD) yang sesuai seperti *earmuff* dengan kemampuan reduksi kebisingan hingga 50 dB(A), *spectacles*, masker KN95, serta sarung tangan berbahan *canvas* atau kulit untuk melindungi tangan dari luka dan panas. Penataan ulang tata letak kerja, penambahan pencahayaan buatan seperti lampu LED 16 watt, dan penyediaan meja untuk workstation pembuatan lubang diusulkan untuk menurunkan risiko cedera serta menciptakan lingkungan kerja yang lebih aman bagi siswa.

Kata Kunci: Ergonomi, Disabilitas, Keselamatan Kerja, REBA, QEC, HIRARC, SLB, Kriya Kayu, Metode 5S

ABSTRACT

Workers with disabilities in vocational education settings, such as Special Schools (*Sekolah Luar Biasa* or SLB), face unique challenges in woodcraft production, particularly concerning ergonomics and occupational health and safety (OHS). The limited number of studies evaluating their working conditions poses potential risks of injury and discomfort during work activities. Therefore, this study aims to evaluate ergonomic conditions, the work environment, and occupational safety risks in wood production activities at SLB Negeri 1 Bantul, Yogyakarta, as well as to provide recommendations for improvement based on the findings.

The method used is a descriptive observational approach with ergonomic assessment techniques through the REBA and QEC methods, risk evaluation using HIRARC, environmental condition assessments (noise, lighting, and thermal comfort), and analysis of 5S implementation (Seiri, Seiton, Seiso, Seiketsu, Shitsuke). Data were collected through direct observation of work activities conducted by students with disabilities and environmental measurements using standard instruments.

The results show that out of 11 woodcraft activities, two were categorized as high risk, particularly those involving the use of a table saw, with a REBA score of 10, QEC score of 62, and a HIRARC score of 20 (high category). Environmental evaluations revealed that lighting intensity in the pattern assembly sanding and drilling areas was only 248,4 lux, 151.2 lux and 156.5 lux, far below the 300 lux standard for machine work. Additionally, noise levels in the cutting and sanding areas reached 110.7 dB(A) and 112 dB(A), exceeding the 110 dB(A) exposure threshold with a maximum permissible duration of just 0.94 minutes according to Ministry of Manpower regulations. The application of the 5S principles also remained low, particularly in standardization (20%) and discipline (33%). Recommended improvements include the use of appropriate personal protective equipment (PPE) such as earmuffs with a noise reduction capability of up to 50 dB(A), safety spectacles, KN95 masks, and gloves made of canvas or leather to protect hands from injury and heat. Reorganizing the workspace layout, adding artificial lighting such as 16-watt LED lamps, and providing tables for drilling workstations are proposed to reduce injury risks and create a safer and more ergonomic work environment for students.

Keywords: Ergonomics, Disability, Occupational Safety, REBA, QEC, HIRARC, Special School, Woodcraft, 5S Method