
Study on Ergonomic Applications to Design Suitable Furniture for Higher Education Institute

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Lecture room furniture in a higher education institute is considered as an important element for improving comfort and it helps to achieve better study environment. An ergonomic furniture design and its application are very important for its usability and comfort point of views for the students. Ergonomic furniture ensures better comfort and confidence for the students in a classroom environment. This study focused to evaluate the design of lecture hall chairs, drawing room chairs and drawing tables which comply with human dimensions of the selected population and desires in accordance with principles of ergonomics. The study was conducted for Civil engineering students in Institute of Engineering Technology, Katunayake, Sri Lanka. These ergonomically suitable designs were evaluated based on anthropometric measurements of the students with satisfying basic needs in the classroom environment. The 60 students were selected randomly from total 180 first year Civil Engineering students for data collection as it represents anthropometric dimension of undergraduate. In order to design ergonomically suitable furniture, relevant data was collected from the prospective students through face-to face interview and off-line questionnaires surveys during 2019. The 5th and 95th percentile adjustable range of the anthropometric data were used for the relevant measurement. Data were analysed using descriptive statistics. There were more than 30% of mismatches observed with available furniture measurements which leading to physical discomforts to the students during the long lecture hours. So, the proposed furniture needs to implement and feedbacks need to collect for future improvements. This study is concluded with study limitations and future research directions as for the design of ergonomically suitable classroom furniture for all the institutions of higher learning in Sri Lanka.

Keywords: Anthropometric measurements, Ergonomics, Furniture, Higher Education, Study Environment