Anthropometric Consideration for Designing Class Room Furniture in Rural Schools

G. C. Khaspuri, S. K. Sau and P. C. Dhara*

Ergonomics and Sports Physiology Division, Department of Human Physiology with Community Health, Vidyasagar University, Midnapore 721102, West Bengal, India

KEYWORDS School Children. Anthropometric Dimensions. Classroom Furniture

ABSTRACT In today’s educational environment a student is required to do class work with the school furniture (benches and desks) for at least four to six hours per day. The existing furniture designs have been in use in most of the classrooms of rural school in the state of West Bengal for the last few decades or so. But it is noticed that in most of the cases, anthropometric dimensions of the body of the user were not considered during designing of this school furniture. So, school furniture becomes ill fitted for the children. It is well known fact that body dimensions of the children varies from age, region etc. So the dimensions of furniture should also be different in different cases. The present investigation was carried out on 621 Bengalee (Indian) schoolboys having the age range of 10-15 years. Different anthropometric data were collected from these boys. It is observed from the results that all anthropometric dimensions of the school children increase with their age. Moreover, there exists a little difference between mean values of different anthropometric dimensions between the boys of 10 years and 11 years (ranges from 2.9% to 8.8%), between 12 years and 13 years (ranges from 1.3% to 9.9%), and between 14 years and 15 years (ranges from 1.4% to 5.5%). But the said differences become much higher (16.2% to 42.4%) when the same were compared between the children of 10 years and 15 years. So, it can be said that the design of furniture for the children of 10 years will not match the anthropometric dimensions of the children of 15 years. If single furniture is designed by considering anthropometric dimensions of the children from 10 years to 15 years, it will also not suit the children of all age groups. So, in the present investigation, all the students have been divided into three combined age groups, e.g., 10-11 years, 12-13 years, and 14-15 years, and the percentile values (5th, 50th and 95th) of anthropometric measures, which will be helpful for designing of the classroom furniture and layout of furniture in the classroom, were computed for these three groups separately.