

**UNIVERSITI TEKNOLOGI MARA**

**ENVIRONMENTAL ERGONOMICS  
AFFECTING STUDENTS COMFORT IN A  
VOCATIONAL COLLEGE**

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Project submitted in fulfillment of the requirements for the  
degree of  
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## ABSTRACT

Environmental ergonomics is defined a scientific study of the effects of ambient environmental conditions on human comfort, performance and health. Knowledge on ergonomics, importance of safety, and environmental ergonomic conditions are the essential factors that ensure comfort during practical work in the workshop. This study aims to assess environmental ergonomic conditions regarding lighting, noise and temperature that affect students' comfort during practical session in a vocational college. There is a significant difference of environmental ergonomic conditions between Welding and Electronic Technology students ( $0.01 = p < 0.05$ ). There is no significant difference in comfort level between Welding and Electronic Technology students ( $0.39 = p > 0.05$ ). There is association between environmental ergonomics and students' comfort level ( $0.04, 0.02, 0.01 = p < 0.05$ ). The interaction between students and their surrounding environment is one of the key important issues in workshops. A number of 79.6% students agreed that the noise of the machine interrupts their emotionally when doing practical work. Majority of the environmental ergonomics measurement level in the workshop did not comply with the established standards. The environmental ergonomics is helpful to contribute ideas for improvements in the design of the workplace to enhance students comfort.

Keyword: Environmental ergonomics, students' comfort, vocational college, workshop

# **CHAPTER I**

## **INTRODUCTION**

### **1.1 Background**

Environmental ergonomics is a scientific study of the effects of ambient environmental conditions on human comfort, performance and health (Hedge, 2000). Knowledge on ergonomics, importance of safety, and environmental ergonomic conditions are the essential factors that ensure comfort during practical work in the workshop (Mohd Rizal, 2010). People in systems operate within an environmental ergonomics is concerned with how they interact with the environment from the perspective of ergonomics. In principle, environmental ergonomics encompasses social, psychological, cultural, and organisational environments of system; however, to date environmental ergonomics is only concerned with the individual components related to physical environment.

In a work environment, the continuous and dynamic interaction between people and their surroundings that causes physiological and psychological strain which consequently affects their comfort, performance, productivity, safety and health (Parsons, 2000). To ensure reliability in the assessment of the environmental ergonomic conditions in each working environment, it has been suggested that both objective measurements such as physical measurements of lighting, noise, and temperature along with subjective assessments should both be taken into account. Subjective assessments should include comfort, satisfaction, perceived job performance, and health and safety consequence (Dianat, 2013).