

**Capstone Project Scholarly Paper**

Olivia Nguyen

Texas Woman's University

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Dr. Supriya Sen

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## Introduction

Due to the COVID-19 pandemic, the nature of schooling changed drastically. In an effort to reduce exposure to infection, social distancing policies were put in place. As a result, students are spending an increasing amount of time online to participate in their education. When they use devices such as computers, tablets, or smartphones to engage in school-related activities, they are at risk of developing musculoskeletal discomfort and disorders (MSDs). Their role as a student can be negatively impacted by pain and discomfort. Research shows that students may experience decreased work efficiency and decreased time spent studying because of MSDs (Calik et al., 2014). A site-specific needs assessment revealed that students can also experience decreased engagement in class, increased fatigue, and increased feelings of anxiety.

Ergonomics was the specialty topic for this capstone project. It is an applied science concerned with injury prevention through evaluation and design of the physical environment, including postures, manual tasks, and repetitive movements. Through an occupational therapy (OT) lens, occupational performance is shaped by interactions between the person, their environment, and their occupation. Since ergonomics can reduce the risk of MSDs and increase comfort and productivity, whether students practice ergonomics can influence their occupational performance. However, there is not enough emphasis on ergonomics in schools (Noack-Cooper et al., 2009). Multiple authors from evidence-based literature have discussed students' lack of awareness regarding the importance of ergonomics and the risks of MSDs. The focused area of study for this project was education, to increase awareness, knowledge, and practice of ergonomics in students who attend Texas Woman's University.

### **Process/Methodology**

The capstone project began with a literature review to better understand the relationship between students' patterns of engagement with their study devices, ergonomic practice, and MSDs. This was followed by a site-specific needs assessment. A survey was sent out to all TWU students. 51.5% of respondents stated their knowledge of ergonomics as poor to average. The students reported experience of pain and discomfort in multiple regions of their body, and every respondent listed at least one way it negatively affected their participation in education.

The goals and objectives of the MOU focused on increasing students' knowledge and awareness of ergonomics to reduce their risk of MSDs. To achieve the goals and objectives, the deliverables of the capstone project were educational resources that would be provided to the Health and Wellbeing Initiative of TWU, the capstone agency. Evidence-based resources pertaining to physical ergonomics and the Person-Environment-Occupation Model (PEO) were used to guide the development of an educational pamphlet, brochure, and training video.

Handouts were passed out to students at TWU on the Houston campus and will be sent via email periodically by the Health and Wellbeing Initiative. The video is available on the OTD Student's YouTube channel. The student also made a post about ergonomics on social media and disseminated information about ergonomics and the Rapid Office Strain Assessment to a class of 1st year OTD students.

### **Outcomes**

Achievement of the goals and objectives resulted in an increase in knowledge, awareness, and practice of ergonomics in students who attend TWU. Furthermore, the capstone agency now has educational resources available digitally and physically to spread awareness of ergonomics and promote health and wellness in TWU students. The OTD student demonstrated that

occupational therapy has a place in ergonomics and gained in-depth knowledge of the topic throughout the capstone project. OTs can promote awareness and educate others about the importance of posture, workstation set-up, and healthy device-use habits. They can also use ergonomics tools to assess work environments and ensure a good fit between the individual, their workstation, and their environment to reduce the risk of MSDs. Finally, as a result of the capstone experience, the OTD student developed educational skills and enhanced professional reasoning skills necessary for future clinical practice.

### **Conclusion**

A need was identified to address students' risk of developing MSDs. Therefore, ergonomics-based educational resources were developed for the capstone agency, the Health and Wellbeing Initiative of TWU, due to concerns of there not being enough emphasis on ergonomics in schools. The overarching purpose of the project was to facilitate continued participation in the role of a student. The deliverables were an educational pamphlet, brochure, and an ergonomics training video. These resources increase knowledge, awareness, and practice of ergonomics in TWU students and play an important role in promoting their health and well-being. As a future occupational therapist, the OTD student can continue to spread awareness of ergonomic principles to improve quality of life in others.

### References

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