**Title:**

Using Cross-Sections to Improve the Spatial Abilities Skills of Radiological Diagnostic Image Interpretation of First-Year Dental Students

**Abstract:**

This project intends to develop an integrated cross-sectional anatomy curriculum within the first-year anatomy course at UCSF to prime dental students with spatial ability skills and improve diagnostic imaging interpretation capabilities. Annotations on large cross-sectional foam boards will allow learners to collaborate as they understand anatomical structures in different dimensions and planes, leveraging the advantages of visuospatial modalities that cross-sections provide to bridge the gap between anatomical knowledge and clinical practice. Assessments will determine the intervention's strengths regarding diagnostic interpretation capabilities and surveys will underscore self-reported confidence in preparation for clinical exercises.

**Methods:**

A needs assessment survey will be offered to dental students to understand their level of preparedness for interpreting diagnostic images following the anatomy and radiology courses they took. During the lab, first-year dental students annotate unlabeled posterboards, working with their lab groups. The students then rotate around the other group’s posterboards to fill in or correct labels before answers are revealed. Participants are randomly split into 2 groups: one experimental group that will be asked to identify structures on radiological images only and one control group that will take a similar test to the pretest. Lastly, a posttest survey is intended at gauging student satisfaction and feedback regarding the cross-sectional curriculum, as well as the experimental test’s ability in measuring knowledge acquisition.

**Pitfalls/Alternatives:**

One pitfall that I am anticipating is that because the assessments will be given during the same lab period as the cross-section annotations, students are more likely to answer a certain way because of memorization and not knowledge acquisition. Ideally, the exams would be given at least one week or so after the experimental lab trial, however due to time constraints within the course, as well as a lower predicted response rate, the tests will be given during the same period.

In addition, for future courses and subsequent years, the cross-section curriculum would be more evenly distributed throughout the year, where during weeks 1-3 of the course, students would be exposed to one set of cross-sections (ie neck anatomy), then the following 4-6 weeks another set of cross-sections, and the same with weeks 7-9, etc. The more spread out structure would ideally be better than one lab period with all cross-sections given out at the same lab period.