

Physical Simulators for Training Clinical Palpation Skills

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Abstract

The goal of the proposed research is to design and build two physical simulators to teach palpation skills to medical and nursing students. These skills are important for clinical assessment and detection of prostate and thyroid cancers, among others. Our premise is that simulators, to be useful, must assess and train practitioners in particular disease cases by monitoring and providing feedback on trainee technique, facilitating the training experience via augmented feedback, and utilizing a range of graded practice scenarios that accurately reflect disease progression. Most importantly, the skills learned through simulation must transfer to actual clinical exams. The proposed work will expand upon past work with a breast cancer simulator. We will test each simulator design and training protocol with medical and nursing students at each stage of development. A set of one-day experiments and one longitudinal study will test each simulator's effectiveness by evaluating trainee competency, the consistency of training across trainee groups, and transfer of training. A tight collaboration between researchers in medicine, nursing, and engineering will ensure the successful integration of this work into the existing training programs at the University of Virginia.