Adaptive eLearning & Pulmonary/Lung Cytopathology
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Goal: demonstrate that an adaptive tutorial can demonstrating pedagogical ownership, learner improvement and satisfaction

Introduction

Smart Sparrow is a web-based software platform that allows one to create adaptive lessons and develop interactive and adaptive courseware. An individualized curriculum on pulmonary/lung cytopathology, created using Smart Sparrow (https://www.smartsparrow.com) will be piloted for pathologist residents of the Hospital of the University of Pennsylvania (HOP). The module will be able to adapt content and feedback to the specific needs of the learner. The main goal/hypotheses is to demonstrate that: 1.) an adaptive tutorial can be used to individualize learning for trainees across different levels of experience. 2.) An adaptive tutorial is as effective as or more effective than traditional textbook or lecture formats. 3.) Trainees find that an adaptive tutorial is a helpful adjunct to traditional learning methods and may even prefer the tutorial to texts and lectures (like scale and open ended questions about the tutorial experience as compared to texts and lectures).

Learning Experience

I have definitely grown as a student, learned to be assertive with what I want to pursue and to be independent with my research. I gained a lot of interest in the field of pathology and adaptive eLearning since I started. My involvement with Dr. Wu involved doing a lot of case studies on patients and making medical diagnosis under the microscope. These case studies challenged me in a good way and pushed me to work harder. Working with Dr. Wu has definitely opened up my eyes to the medical field and Bioinformatics. Having Dr. Douglas Blank as my faculty advisor at Bryn Mawr has provided me with new perspectives that I never considered before when it comes to A/B Testing. A/B testing is the comparison between different versions of a web page to see which one performs better. User interface design and user experience also falls under A/B testing. This perspective is important in my research because user friendliness is important in eLearning.

Future Plans

1. Completed module ready to be launched to pathology residents by Summer of 2016
2. Co-author a cytopathology article on using the Smart Sparrow learning platform
3. First author of an abstract on the findings of my study

Method and Design

Crossover study with assigned reading or lecture slides compared to the tutorial, showing that the assessment scores are equal to or better than the group doing the tutorial versus those doing the reading or lecture slides. Short and long term recall could be incorporated by giving an assessment a few months later.

Adaptive eLearning

Adaptive eLearning makes it possible for each student to have an individualized curriculum based on their varying levels of knowledge and learning abilities. There are three levels of adaptivity in Smart Sparrow: (1) instant adaptive feedback based on student responses is given at the end of every question, (2) adaptive pathways that guide students into varying sequences of content based on what the student does and knows, and (3) adapt student's teaching by analyzing the progress of the student's results and scores.

References