Intentional Use of Digital Technology in Graduate Epidemiology Education

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EXECUTIVE SUMMARY

Public health education is continuously changing. Several papers have been written on the need to update epidemiology education in public health to match the needs of the "real world" as well as keep up with the digital age, yet few papers have been published on how to make this happen. Utilizing a blended learning framework, a graduate-level course was revised to improve student learning and teaching practice. By considering and implementing various pedagogical practices and tools, students learned more, were able to utilize this information in class and in other settings, and were able to take more control of their learning. Improvements were made to teaching practice, specifically by being more student-centered and providing better planned integration of technology for the advantage of the student and instructor. Using well-designed pedagogical tools and spending the time to plan out the course methodology based on expectations at the conclusion is a best practice that should be used by instructors in various fields but especially those in public health.

INTRODUCTION

In 2016, I applied to be an Inaugural Fellow in the Florida Agricultural and Mechanical University Digital Learning Initiative. My goals were few – I wanted learn how to better incorporate technology into my classroom and I wanted to improve how I was teaching a particular course that was extremely important but had become a dreaded challenge for graduate students in the program. Students needed to attain and retain knowledge and I needed to do better in making this happen. As a self-professed technology geek, I had tried (and sometimes failed) in incorporating technology tools I loved into my interactions with students both in and out of the classroom. I regularly sought out tool after tool and asked friends in the professoriate for suggestions of what they used. As a professor without formal education in education, I knew there had to be some kind of connection between my teaching methodology and the outcomes for students in my courses. While the field I work and teach in – epidemiology – is very quantitative, the Digital Learning Initiative offered the opportunity to learn from others in different fields, be challenged to think outside the box, and to focus on exactly what was frustrating me as a professor. This chapter will describe in detail my learning process, alterations to the course I selected to update, student reactions, outcomes of the transformation, and lessons learned during my time as a Digital Learning Initiative Fellow.

BACKGROUND

Public health education is continuously changing. The field of public health has traditionally been divided into five core areas – biostatistics, environmental health, social and behavioral health/health education, epidemiology, and health policy and management. As defined by the World Health Organization, epidemiology is "the study of the distribution and determinants of health-related states or events (including disease), and the application of this study to the control of diseases and other health problems" (World Health Organization, 2018). It is widely recognized as the foundational science of public health. Mathematics and statistics are among the areas of knowledge important for using epidemiology or being an epidemiologist. Numerous public health academicians and practitioners have discussed the shortcomings