Abstract

As each student learns differently, providing students with multiple methods of instruction is imperative. With technological advances, as well as financial and infrastructure restraints, educational practices in anatomy instruction are constantly evolving. Many studies have investigated online versus traditional learning methods, but few have considered the impact of these approaches in undergraduate anatomy courses. Study participants were students enrolled in Anatomy 2300 Human Anatomy during the spring semester of 2015 at The Ohio State University, Columbus Campus. The participating students’ exam scores for the 1) Back & Upper Limb, 2) Head & Neck, and 3) Thorax, Abdomen, & Pelvis units, along with their declared lecture delivery method for each unit and preferred learning style based on the Index of Learning Style (ILS) questionnaire, were collected. Statistical analyses were performed, including descriptive statistics, two-way contingency tables, multiple linear regression, and multinomial logistic regression, using SPSS Version 21 (IBM) for Windows. Results indicated that the most commonly chosen lecture delivery method for all units was the online only method. However, students using the face-to-face only lecture delivery method had statistically significant higher examination scores in comparison to those using either of the other methods. Results also suggested that the sensing/intuitive domain could predict student choice in lecture delivery method. As anatomy is a hands-on, concrete science, understanding the lecture delivery method options available and their effectiveness for student achievement is imperative when developing new courses. This study adds to the understanding of student choices in instructional method and the impact of those choices on academic achievement in an undergraduate gross anatomy course.

Methods

Students enrolled in Anatomy 2300 – Human Anatomy were given the opportunity to consent to participate in a study to investigate student preferred learning styles and lecture delivery method. Exam scores for Units II, III, and IV of participating students was obtained from the course director and entered into an Excel database. A survey question to determine a student’s primary lecture delivery method of choice was completed by participants at the end of each of the respective examinations. This data was coded and entered into the Excel database as listed:

• 1 = face-to-face only
• 2 = online only
• 3 = mixture of both

After coding and de-identifying, the data was transferred into SPSS and statistical analyses were conducted. In order to control for academic ability, ACT composite scores were obtained from the Office of Enrollment Services.

Summary

The results of this study indicated that for all three units the most commonly chosen lecture delivery method was the online only method. Figures 1 through 3 depict the lecture delivery method determined through descriptive statistics.

The results also indicated that the face-to-face only lecture delivery method was statistically significant for predicting academic achievement for Units II and III. Students who chose the face-to-face only method over either the online only or the mixture of both, for both Unit II and Unit III, had higher mean examination scores. Table 1 depicts the mean examination scores for the different lecture delivery methods for each of the respective units.

Conclusions

This research suggests that course criteria and content can impact student preference for lecture delivery method. As enrollment sizes increase and universities look to expand online course offerings (especially in regards to the anatomical sciences), it is imperative that course characteristics are taken into account. The findings can inform the activities of instructors, students, and administrators involved with anatomy curricula.

For anatomy students:

• If choosing online only lecture delivery methods be sure to manage your time and keep pace with the material.

For anatomy instructors:

• Be aware that students using online delivery methods may not perform as well as students using face-to-face delivery methods and take part in professional development courses to help develop MODIFY these three different lecture delivery methods.

References