Tested Studies for Laboratory Teaching
Proceedings of the Association for Biology Laboratory Education
Vol. 34, 407-408, 2013

Using Podcasts and In-Class Assignments in a Large-Enrollment Introductory Biochemistry Class to Promote Deep Learning

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Traditional lecture-based teaching in large enrollment introductory biochemistry classes generally tends to encourage superficial learning. There is pressure to teach a large number of basic concepts in a short amount of time, and there are few opportunities for a single instructor to interact with hundreds of students in a meaningful and personal manner.

In an attempt to overcome some of these limitations, I have introduced two new, interrelated components to the introductory biochemistry course at the University of Calgary. First, podcasts were developed to present a more in-depth treatment of topics previously taught exclusively through lectures. These podcasts provided students with a resource that allows students to learn at their own pace and to repeat portions when necessary, thus facilitating a deeper and more integrated learning process. Second, in-class case-studies and assignments provided interactive follow-up to the material presented during previous lectures and the podcasts.

The effects of the podcasts and in-class assignments on student learning were assessed using two different measures: (1) voluntary self-assessment surveys; and (2) performance on exams. In the voluntary self-assessment surveys, 77% of students reported that listening to podcasts improved their learning, and 72% of students reported that the variety of teaching approaches used the class improved student success. Performance on exams was also improved, with only 10% of students incorrectly answering questions that related to topics covered in the in-class assignments and case studies, as opposed to 50% of students before these new components were introduced to the class.

Link to Original Poster

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Citing This Article

Barrette-Ng, I.H. 2013. Using Podcasts and In-Class Assignments in a Large-Enrollment Introductory Biochemistry Class to Promote Deep Learning. Pages 407-408 in *Tested Studies for Laboratory Teaching,* Volume 34 (K. McMahon, Editor). Proceedings of the 34th Conference of the Association for Biology Laboratory Education (ABLE), 499 pages.
http://www. ableweb.org/volumes/vol-34/?art=44