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They Flipped summary

Example: Stanford School of Medicine, biochemistry course

URLs: (Overview)

http://www.stanforddaily.com/2012/10/22/medical-school-experiments-with-flipped-classroom-teaching-model/

(Journal article) http://www.um.es/c/document_library/get_file?uuid=c538d7e7-52a4-4f9a-93c7-92ac04c80b06&groupId=115466

Educational level: Graduate (medical school)

Curriculum: Biochemistry class as part of an overall initiative at the school called SMILI (Stanford Medical Interactive Learning Initiative)

Learning Goals (resulting from flipping):
-Make content "stickier" by utilizing more interactive methods of educating medical students (see Prober & Heath, 2012). According to Heath and Heath (2007), sticky ideas are those that survive the test of time because they are understandable, memorable, and effective in changing thought or behavior. Prober and Heath (2012) highlight the understandable and memorable aspects of sticky ideas and apply them to medical education.

-Use digital media to make learning opportunities flexible and make more class time available to focus on small-group activities and application of knowledge.

-Utilize student feedback and other data collected during the biochemistry pilot study to guide future implementation of flipped learning.

-Allow teachers to better track individual progress and plan for focused instructional interactions.

Learning Goals of the Biochemistry Course (lecture based format):
-Encounter biochemistry content through a standard lecture-based model of instruction with student attendance optional.

Learning Processes:
-This initial application of FILT at Stanford Medical was championed by Dr. Charles Prober as a way to make in-class learning more meaningful, understandable, and applicable, or "stickier." Stickier learning elicits emotion and makes knowledge more compelling through communicating effective ideas, or ideas that lead to change in thought or behavior. According to Prober and Heath (2012), the modern era of technological capabilities, including digital media and communication, provides the perfect opportunity to deliver lectures outside of the classroom via digital video delivery platforms such as YouTube and Khan Academy. In the biochemistry course discussed, lectures were recorded and delivered asynchronously so class time could emphasize case-based and team studies in class. Beyond enhancing student interest and

engagement, Prober and Heath (2012) posited that flipping class in this way will increase motivation as well.

Students in the pilot study described in the article were given access to class lectures (described as "short presentations") to watch before class. Class time was dedicated to medical cases and other applications of biochemistry in diagnosis and care in the medical field. Specifically, students worked in small groups to analyze medical case studies in lieu of attending traditional in-class lectures. Class discussion and application of learned material was an ongoing focus of the class. The data collected were positive. Student interest levels increased from the previous year (when the traditional lecture method was used), according to data from student feedback surveys, and class attendance rose dramatically from 30 percent to 80 percent, even though class attendance continued to be optional.

Digital Tools and Resources:
-While not mentioned specifically as having been used in the pilot study, several references to Khan Academy were made in the description of the flipped format that was tested. Further, the SMILI webpage and the Stanford Daily article about this class discuss the ongoing use of Khan as a partnership in the development and distribution of video lecture materials. Those materials are online at: https://www.khanacademy.org/partner-content/stanford-medicine. This partnership with Khan Academy seeks to provide free health and medical content to anyone who wishes to access it.

Similarities/Differences:
-From my perspective, this FILT example aligns closely with the content of our readings and discussions to date. The basic idea of video lectures utilized outside of the classroom and small group/application activities inside is readily observed in this example. Two particulars that offer some differing perspectives include the references to student motivation and participation. Prober contends that student motivation is linked to higher interest and engagement in the learning process. Similarly, he references the increase in class attendance as evidence of greater interest and motivation. Both of these points make sense from a teacher's perspective, but there are obviously causation and correlation questions that come to mind (e.g., Could there be other reasons for increased attendance?)

Reflection:

The FILT example was very interesting to me. Particularly, I found the higher education aspect of particular interest due to the way these medical instructors described their pedagogy and student interactions. Specifically, Prober and Heath's reference to the stagnation of medical school pedagogy over the last hundred years was poignant, and should be well received by higher education faculty. They note that the traditional pedagogical method, lecture-based instruction, has been used since the last major reform in medical student education in 1910. This article and FILT example is timely and offers a convincing and succinct glimpse of FILT possibilities in higher education.

Still, I would have valued a more detailed description of the pilot study with more attention paid to student feedback and results. However, I do not think that the article, or the pilot study at Stanford, was meant to be about the study's design. I believe the authors wanted to communicate the possibilities of FILT in medical school and the obvious potential benefits therein. Overall, this is a valuable example of FILT's potential that could be an impetus for similar undertakings at other medical and graduate institutions.

Reference

Heath, C., & Heath, D. (2007). *Made to stick: Why some ideas survive and other die.* New York: Random House.

Prober, C.G., & Heath, C. (2012). Lecture halls without lecture- A proposal for medical education. *The New England Journal of Medicine, 366*(18), 1657-1659. doi:10.1056/NEJMp1202451