

Dr. Haave has been developing his ability to use Team-Based Learning (TBL) as an instructional strategy for the past few years. In this highly structured version of the flipped classroom, students do the majority of their learning outside of class before the material is applied inside the classroom. In these TBL courses students are provided with reading guides to focus their reading of the assigned chapters, after which they write a short quiz in class to hold them accountable for their pre-class learning. Following this, the students complete in-class activities (Apps) with their groups in an attempt to get the students to actively engage with the material they have learned, in a way that allows them to make meaningful connections between different concepts and even courses. Effective Apps follow the 4S framework: all students attempt a significant problem at the same time and are required to make a specific choice which all teams report simultaneously to the class.

With the generous support of the University of Alberta's Centre for Teaching & Learning's summer student award, I had the opportunity to develop 4S Apps for AUBIO/AUCHE 280 and 381. This was done in an attempt to provide the students in these courses with the same active learning environment already in place in Dr. Haave's AUBIO 230 molecular cell biology course. Because a significant portion of AUBIO/AUCHE 280 and the entirety of AUBIO/AUCHE 381 had not yet been converted to the TBL format, I was required to develop these Apps from scratch, using various online and text resources. My first task was to edit the reading guides for each of these courses, to ensure that the objectives were clear and concise and would effectively aid the students in their independent learning. Following this, I began to research material I could use to develop Apps according to the 4S model of effective TBL Apps. The material that I found to be the most interesting was passages that contained clinical correlations- as a student, I found this to be an excellent way to make connections between concepts and apply the material to real world examples. At the end of the summer, I created a total of 8 modules for each course, and within these developed a series of Apps for each course section that covered a wide range of topics that I believe will adequately challenge the students' knowledge of these concepts. The number of modules in each course was condensed in order to create a more manageable and less overwhelming workload for the students.

This experience allowed me to expand my research skills beyond what my undergraduate degree program often required, and gave me the unique opportunity to approach material that I had become very familiar with as a student from the perspective of an instructor. I gained a new level of appreciation for the work that goes into developing the many courses I have taken and will continue to take, while also improving my own ability to research and communicate my findings in a format that was initially unfamiliar. It is my hope that the questions I have developed will aid the learning of the students who will take these courses in the future, and provide them with a positive team-based learning experience.