

**Final Report**  
**CTE Flipped Teaching Grant – EPID 410 – 2015-2016**  
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Our team was awarded a Flipped Teaching Grant in December 2014. Our goals were as follows:

1. To develop, implement and evaluate flipped content for course topics that are best taught via problem-solving, case examples, and discussion; and
2. To develop, implement and evaluate interactive online lessons that support and reinforce independent and asynchronous student learning.

To accomplish the goals listed above, we completed our work in the three phases:

<b>Phase</b>	<b>Scope of Work</b>	<b>Status</b>
Phase 1	Systematic review of unit-level objectives	Completed Summer 2015
	Planning for redesign of teaching materials using backward design process	Completed Summer 2015
	Redesign of materials & building of Blackboard site for course	Completed Summer 2015-Fall 2015
Phase 2	Deliver redesigned flipped & hybrid course with ~260 students across 4 sections	Completed Fall 2015 with staffing changes
	Refine course design based on Fall 2015 experiences	Completed Fall 2015 with staffing changes
Phase 3	Deliver refined course with ~250 students across 4 sections	Completed Spring 2016

Assessment of Effectiveness of Flipped Teaching for EPID 410

Our experiences with using flipped teaching to deliver EPID 410 have stimulated a more in-depth and systematic review of unit-level learning objectives and their alignment with content and assessments than likely would have occurred without the CTE grant. In carrying out this process, we have prioritized content and strengthened our emphasis on the concepts and skills deemed most important for our students.

Based on informal and formal feedback from students and our own observations of the day-to-day dynamics of the course, we have drawn the following conclusions about our initial implementation of the course redesign:

1. In general, students were not well prepared for a course that centers on active learning, as opposed to the more passive and traditional lecture-based approach. We experienced student resistance to the shift toward a more active student role in terms of expectations for out of class work. For example, in the early weeks of each semester, approximately half of students cited keeping up with task deadlines and time management as their chief challenges for success in the course. In general, the longer students struggled in this area,

thereby missing credit for low stakes tasks, the lower their overall semester grades were. Also, some students expressed significant anxiety related to the uncertainty of “knowing” what was expected. They perceived that a lecture-based format provided more explicit indicators of expectations, typically in the form of points to be memorized. Even late in the semester, we observed that students did not seem to fully appreciate the significance of the learning objectives displayed prominently for each unit.

2. In both informal and formal observations and assessments, we saw tremendous heterogeneity among students in their overall reactions to flipped teaching. Whereas some students raved about the extent to which they enjoyed the course and learned important skills, others expressed significant discontent about the expectations that they actively participate in class and stay abreast of tasks outside of class time. To some extent, this heterogeneity of student reactions is typical for this course, regardless of format. Nonetheless, the distribution of student reaction appeared to be more strongly bimodal for the students exposed to the redesigned course. In terms of student scores on exams, we observed that mean scores were comparable to those from traditional versions of the course; however, the range of scores tended to be broader. Similarly, student ratings of the course via end of semester course evaluations reflected mean scores that were very similar to those from traditional versions of the course, with slightly broader range of responses across students. We must consider whether offering students a choice of formats might be a logical way to proceed in the short term, at least until active learning becomes a more normative experience for undergraduates at this institution.

With respect to the process of carrying out the course redesign and implementing it over two semesters, these considerations should be noted:

1. We initially proposed to have three faculty members involved in implementing the course in Fall 2015. However, when one faculty member was approved for modified duties due to family medical leave, the work load originally intended for three was shouldered by the remaining two faculty members. This meant that building of course content in Blackboard was occurring in parallel to actual teaching of the course, a dynamic which certainly increased stress levels for our instructional team.
2. As we navigated the process of implementing the resigned course in Fall 2015, we discovered considerable heterogeneity in our instructors’ comfort with delivering the course as planned and enjoyment of the process, both with respect to the flipped teaching elements and with respect to the online portion of the course. In light of these factors, the extent to which the Department continues to offer the course in a flipped format will likely depend upon the preferences and strengths of individual faculty assigned to teach the course in the future.

Overall, we have found the opportunity for support from CTE invaluable in this process. Participation in meetings with other teams from the same grant cohort was very productive as were our individual interactions with CTE faculty specialists and instructional design staff.

Given the conclusions summarized above, we recommend that future consideration of flipped teaching approaches include even more attention to informing student expectations for work load as quickly as possible and to individual faculty strengths, limitations and preferences so that instructor-level stress can also be managed proactively. Regardless of whether EPID 410 is offered in a flipped format in the future, the emphasis on using backward design principles to prioritize learning objectives and then align assessment and content with those objectives has undoubtedly led to lasting improvements in the course.