Final Report for Redesign of Learning Objectives in BIOL 1110

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a. Describe what you learned.

The first part of the project was reviewing current course level and module level learning objectives. We learned that we were often asking our students to read and interpret data in the form of tables and graphs as course activities but these skills were not reflected in the course or module level learning objectives. While we first thought that we would rewrite all our objectives and incorporate skills, we soon realized that we needed to maintain our some of the content objectives and add skills based objectives. Throughout the course of the project, we improved our ability to write clear and measurable learning objectives.

We also realized that we have some gaps in our course content. For example, we cover health disparities in the course as they tie in to other topics like cancer and disease. It would be helpful for our students to reorganize the topics so that we have a lesson introducing the concept before we begin incorporating it into other topics. We now have a Science and Health topic planned for our first course module.

b. Describe how this will be incorporated into your instructional practice or curriculum.

The redesigned course level learning objectives are as follows:

> By the end of this course, students should be able to:
> I.   Recall the fundamental concepts of biology
> II.   Apply the scientific process
> III.   Critique sources
> IV.   Interpret scientific data
> V.   Apply biological knowledge to real world situations
> VI.   Contribute equally to a group discussion
>
> *Each of the five modules also has redesigned module level learning objectives; there are typically between 10-15 objectives. We cover three topics per module.*

After we created the new course level and module level learning objectives, we redesigned the entire BIOL 1110 course to ensure that what our students were learning and the activities they were completing mapped to these learning objectives. We created a course matrix to assist with the restructuring of the course to align our new learning objectives with the activities, assignments, and assessments.

WIthin our BIOL 1110 Canvas course, the learning objectives are used as a study guide for each topic we cover and can be found within the Background section of each module. For each of our topics, the questions on the assessments are mapped to the module learning objectives as well.

c. Describe the student impact (good, bad, or indifferent).

At this point our semester has drastically changed as we were forced to offer BIOL 1110 online asynchronously rather than in the traditional face to face synchronous course offering. We planned to obtain data through course surveys, Poll Everywhere questions, mid-semester evaluations, and embedded questions in exams. At this point, we only have qualitative data from the reflective course surveys and final course evaluations from summer.

Please see the selected student comments below:

Comments from summer qualitative course evaluations:
- "Seriously X was amazing and really was helpful in her lectures that she posted about the material, gave really good examples, and having us do class activities basically three times a week was good, I felt like it really helped us all engage in the class and also know how to apply it to life in general."
- "For an online class, I felt very engaged in this class. The professor went out of her way to make herself accessible and always answered my questions quickly. She does a great job delivering the material and made me enjoy a subject that I knew nothing about!"

Summary comments from fall weekly reflections:
- "I loved learning how to use the database on the CDC website. I enjoy the group work assignments. It allows us to work with others during this unusual semester."
- The most important thing I learned was "how to find and interpret data (specifically from the CDC website and using the different categories of classification like age and year)"
- I learned about "ways to prevent heart disease! Very important to me, as this runs on both sides of my family."
- The most important thing I learned was "about how heart attacks are treated and the trends in North Carolina that contribute to the increase of them."
- "I learned more about cardiovascular disease, and have a better understanding as to why general inactivity and unhealthy behavior in society can directly lead to a higher disease and mortality rate."
- "The layout has been so easy to navigate and adjust to and I absolutely love how learning focused this class is!"
- "The most important thing that I have learned from this assignment is to make sure the articles, news and information that I read or hear are from credible sources and to research whether it is true or not."
- "I think the most important thing I learned from this assignment is how valuable group work is. Not only can I help others when they do not understand, but others can help me which is a very nice thing to have."

These student comments demonstrate that students see the value in our course level objectives. The other piece that we did not anticipate was the value of the groups in making the semester feel more "normal" and engaged.

d. Describe what you plan to do differently, if anything.

We will continue to refine our student groups such that maximum engagement with other students and the University is reached.

We would like to assess the impact of the learning objectives on student success, from both the instructor and student perspectives.