SCIFOOD: ENGAGING STUDENTS WITH PRINCIPLES OF BIOLOGY THROUGH COOKING AND FOOD

A POSTER PRESENTATION

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EXTENDED ABSTRACT

Principles of biology (BIO 110) is a course for non-biology majors to meet the general education requirement for life sciences at Freed-Hardeman University (FHU). The goal of this project was to expose students in the BIO 110 course to biological topics such as metabolism, pH, plant biology, muscle structure, blood viscosity, lipid transport, biomolecules, water, the scientific method, and G protein coupled receptors in a novel, relevant way. Engaging students in the liberal arts core continues to provide challenges for faculty at FHU. By using the kitchen as a laboratory, the instructor sought to challenge traditional perceptions of biological topics and instead make them applicable and interesting.

This poster will summarize the experience of the students and instructor after two semesters of implementation. Biological concepts were organized using a theme for the week. Typically, a short lecture was followed by activities in the kitchen designed to allow students to experience various principles of biology. Students performed experiments and completed lab reports answering questions about their results. Questions and prompts in the lab report sought to challenge students to reflect on learning that was done in the lab; however, improvements could be made in this aspect of the course and feedback is welcomed. For the final project, students assumed the role of food scientists and used the scientific method to "dissect a recipe." This involved using the scientific method to make a favorite recipe and test two different variables with appropriate controls. Students then reported their findings to the class.

Student learning was positively impacted by this approach. This poster will summarize student-learning gains as reported by students using a Student Assessment of their Learning Gains (SALG) instrument. Students reported making "moderate, "good," or "great" gains in all of the major concepts covered in the class on the assessment of learning gains in the fall of 2016. This format of instruction was repeated in the fall of 2017 and student-learning gains will be reported for this semester as well.

In summary, this poster presents the initial launch of transformative learning work in an introductory biology course. It also presents assessment data of student-reported learning gains. This work demonstrates the power of engagement to impact student learning and improve perceptions about content that students find difficult or uninteresting. It is the presenter's desire to continue implementation of this approach and further refine the reflection component and help students draw more connections among course topics.

SELECT REFERENCES

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