

Honing Communication and Organizational Skills through Community-based Engaged Learning

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Author Biography

Dr. Hasitha Mahabaduge is an Assistant Professor of Physics at Georgia College and State University. He was one of ten 2017-2018 USG SoTL Fellows, a 2019-2020 Governor's Teaching Fellow and received the Felton Jenkins, Jr. Hall of Fame Faculty Award for Excellence in Teaching in 2020. Dr. Mahabaduge was also named a Fellow of the International Society for the Scholarship of Teaching and Learning in 2020. Dr. Mahabaduge teaches both introductory and upper level physics courses. His research interests include fabrication and characterization of solar cells and Physics Education Research.

Introduction

High-impact practices have been shown to increase college students' chances of getting career-oriented jobs upon graduation. Service Learning or Community-based Engaged Learning (C-bEL) is considered one of the high-impact practices (Kuh, 2008). Learning experiences that meet the criteria of (i) students integrating theory and practice, (ii) having direct interactions in community settings, (iii) participating in mutually beneficial partnerships with community organizations and (iv) critically reflecting on their community-based learning activities are designated as C-bEL.

C-bEL projects were introduced to upper level physics courses where physics students were guided to write reflections on the lessons learned. Most physics undergraduates were unfamiliar with writing reflections. They perceived both C-bEL experiences as well as reflections as equally important as the course content to be successful in the workforce. One C-bEL activity offered for upperclassmen was to conduct workshops for elementary school students. Physics students who participated in the activity reflected on how Community-based Engaged Learning prepared them to be better communicators and collaborators.

Goal of Activity

The goal of the activity is to provide upperclassmen a capstone experience by engaging them in an opportunity to practice and hone their communication and organizational skills in a real-world setting. Physics students' feedback following the activity reflected the recognition by them of the value of essential skills. Another goal of this activity is to support elementary school curriculum with engaging and interactive workshops. Elementary school students who participate in the event also benefit immensely from these types of experiences as it helps to instill a passion for STEM fields in these students at a young age.

Description of the Activity

Undergraduate students are responsible for developing, coordinating and executing a workshop on renewable energy for local area elementary school students. The workshop is offered annually in the Fall semester and hosted at the University. The instructor of the course makes the initial connection with the local area elementary school teacher to determine the date. The elementary school teacher is responsible for the logistics for the elementary school students including transportation. Each undergraduate student is assigned a topic and a demonstration related to renewable energy. For example, for the topic solar energy, *ride on a retrofitted solar powered golf cart* and *making solar cells with berries* are the most popular demonstrations among the elementary school students.

Once the date is confirmed for the workshop, undergraduate students reserve the respective facilities and order necessary parts for the demonstrations. They are responsible for organizing the event and setting up

the agenda. Internal funding is available to cover the expenses. One key feature of this experience is physics students need to prepare presentations at two different levels: elementary school students' level and undergraduate level. Physics students do preliminary presentations and receive feedback from the instructor and peers. Their presentations are evaluated using Toastmasters International speech evaluation criteria (Toastmasters.org). This particular workshop started in 2016 as a one-hour workshop for twenty-five students and has grown since then. In 2019 this particular workshop was hosted as a "Renewable Energy Day", for five hours and seventy-five elementary school students participated in the event. More information including photos of this particular activity can be found in local area news outlets (O'Donnell, 2018; Vann, 2019).

Student Feedback

Once the workshop is completed, physics students were guided to reflect on the experience using prompts similar to the following.

- How did you apply ideas, theories or methods you've learned in class to addressing the identified social need? Provide examples to illustrate your explanation.
- How have your own attitudes changed as a result of this assignment or activity?

A study on the effect of C-bEL on student attitudes and behaviors was also conducted and the results were shared elsewhere (Mahabaduge, 2019). As part of the study, physics students completed pre- and post-surveys compiled by the office of ENGAGE at Georgia College (GC). C-bEL was GC's official Quality Enhancement Program (QEP) from 2014-2019 (Georgia College, 2019). Given below are selected comments from the post survey provided by the undergraduate students who participated in the activity.

...Another unique perspective I learned to value was that of a mother. One of the members of the prep team is a mother of two children while also a full-time physics student. Her tenacity for education shone through her efforts during the community engagement event. Her perspective helped optimize the event's schedule and layout to minimize interruptions, interferences and delays.

People from different backgrounds look at problems differently and can solve them in a way that you may not have thought of. While working with kids, I noticed that people with younger siblings worked better with them than I did.

As we introduced students to new topics related to renewable energy, listening to their interpretations helped me value their young minds as highly creative and absorbent. This event helped me revalue the intuition, creativity and intelligence of young children.

Many skills needed for this project were leadership skills and collaboration. Core classes need to focus on increasing these skills so people can survive in the real world.

Conclusion

As the undergraduate students' feedback suggests, conducting the workshop for elementary school students helped them to understand the importance of soft skills. Introducing a peer evaluation system based on Toastmasters International added more excitement and participation from students, as it was fun and exciting to note any overused words or filler sounds used as a crutch by the presenter. Inappropriate interjections such as *and, well, but, so* and *you know* as well as sounds *ah, um* or *er* were noted for each presenter and a significant decrease in the use of these filler words observed during the second iteration of the presentations.

This activity equally benefits the elementary school students. As shared by one of the elementary school teachers, "Both the big kids and the little ones benefit from this experience, my students are always so excited to be able to learn from college students. Some of them have never actually been on campus before, and

their reactions are priceless—full of wonder and awe” (O'Donnell, 2018). Considering the feedback from both undergraduate students who organized the activity and elementary school students and their teachers who participated, it can be concluded that this particular community-based engaged learning activity is a win-win situation for everyone.

References

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