Work in Progress: The Impact of North Carolina State University's Student Council on the Grand Challenge Scholars Program

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Abstract

In the fall of 2017, XXXXX's Grand Challenge Scholars Program (GCSP) had 19 scholars in the program. To change the structure of the university's GCSP and increase the efficacy of the program, a student council was formed to allow students to take ownership and responsibility over the direction of their program. Today, the GCSP has grown by 332% due to this change. By pairing the unique programming of the GCSP with a student council that affects the day to day operation of the program, XXXXX significantly increases the number of engineers who graduate well equipped to address the Grand Challenges of Engineering.

This paper will examine both the implementation and outcome of creating a student council made to the GCSP at XXXXX and how this created an impactful transformation in students. It will document the effects this program has had on the scholars, specifically when it comes to student learning in the Grand Challenges as an outcome of students taking ownership within the organization. By using this program as a case study, this paper will illustrate the most important change made in XXXXX's GCSP, the impact due to this modification, and how other GCSP programs around the country could adopt this revision into their GCSP programs.

Introduction

Several analyses have shown that ownership from students is critical to their ability to succeed in the classroom [1,2]. In fact, developing a mentality of student ownership brings with it a plethora of positive benefits - making the job of teachers/administrators easier, allowing students to personalize their education, and allowing them to develop leadership and decision-making skills [3].

In universities, much of student learning comes from outside of the classroom. For the overwhelming majority of students, the impactfulness of their college experience is driven by their out of class experiences, such as clubs, service organizations, or other groups [4]. When student extracurriculars supplement their in-class learning, these out of class experiences significantly contribute to both student learning and personal development [5]. Developing roles in those extracurriculars allows the students to take responsibility within these organizations. Taking ownership over student organizations benefits extracurricular learning in a similar fashion to how taking ownership over classroom learning is critical to student success. We

applied these principles to the GCSP with the formation of the student council in order to create responsibility and thus drive student learning and efficacy of the program.

Methodology

Student Council Purpose & Implementation
Within the Grand Challenge Scholars (GCS) Program, we hypothesized that a lack of student ownership in the program led to underwhelming student participation within it. To overcome this, we looked for opportunities to allow students to make meaningful impacts on the direction of the program. To accomplish this, we created the first student council for GCS in fall 2017, giving students the ability to influence the direction of the program while building a community between Scholars. After a year, the student council formally designated roles, further allowing students to take ownership within the council on specific tasks.

Over the years, the council has varied from five to eight Scholars, based on size of the program and willingness of Scholar participation. As roles, the Council has a president, vice president, outreach chair (in charge of recruitment), communications chair (sends regular updates to GC Scholars about upcoming events, conferences, etc.), and partnership chair (in charge of developing partnerships with organizations that help Scholars fulfill their five competencies).

Student Council as a Case Study
We interviewed past and present Grand Challenge Scholars (both council and non-council members) to gather feedback on the changes brought by the implementation of the student council. Of the 90 Scholars surveyed, 50% responded. The survey questions listed in Table 1 were answered online, so that the responders could remain anonymous. We understand that this survey could be biased based on the individuals who chose to respond to these questions.

Table 1. Open-ended interview questions

Category	Questions
Prior to Changes	1. How was the Grand Challenge Scholars Program affecting you individually in 2017? 2. How would you describe the Grand Challenge Scholars in 2017 before the council was created as a whole? 3. What changes did you want to bring to the program through the council?
Results of Implementation of Changes	1. How would you say that the council affected you personally? 2. How would you say that the council affected the program as a whole?

	3. Did you feel that the council made a meaningful impact in the ways you originally intended?

Results and Discussion

This paper seeks to understand the ways in which the student has impacted past and present Grand Challenge Scholars. Additionally, we sought to understand ways in which the student council is falling short in its goal of positively impacting the Program. In this section, we share some of the common themes among participant answers, as well as an analysis of these answers.

Responses from Current and Present Council Members
The Council members that we interviewed who were in the program before there was a student council all remarked about how the program was small and lacked a real structure. Instead of being a true "program" with a set goal, one council member wrote, "the program wasn't very unified. It was more like a group of high achieving students who met occasionally to share about cool stuff they did." Another council member discussed how the shortcomings of the program inspired the creation of a student council. "We recognized the value of the NAE's programming and began to create strategies to increase the program size, add additional events and opportunities, and foster communication between the staff and the scholars."

In regards to the present structure of the program, council members have focused on the common goals of increasing the size of the program and developing a community of GC Scholars. One council member recalled, "we completely revamped the structure of the program, the application process, sent scholars to every single E102 class to talk about the program as well as several other on-campus events, and holistically reviewed the goals and outcomes the NAE has set and implemented them in a way that was more effective for students. These actions came in the form of council decisions and frequent interaction with the staff." As shown in Figure 1, our program size expanded from 19 to 82 Scholars between 2017 and 2019. When discussing the expansion, another council member stated, "without our work on the council that year, I'm not sure if this program ever would have grown past a handful of students."

Responses from Current (Non-Council) Members
The current non-council Scholars responded with two main themes in how the council has impacted them: regular engagement in the program and assistance in fulfilling the GCSP competencies.

Figure 1. Size of GCSP over 4 years
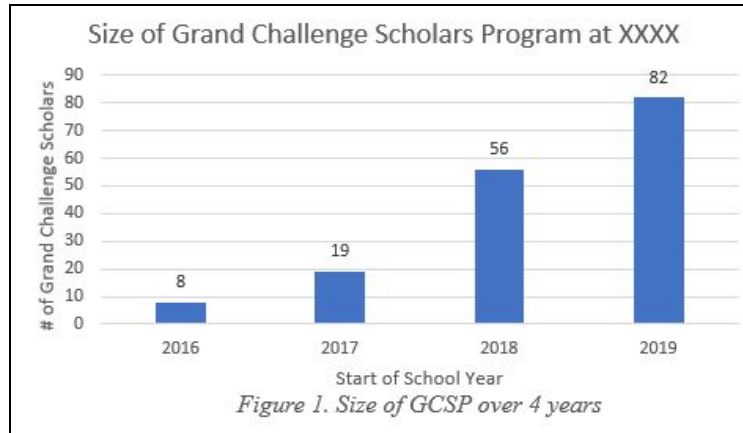
For engagement in the program, one GC Scholar said, "[The council] helps me stay engaged with the program in the middle of a busy semester." One of the actions the council has done is to send out a bi-weekly newsletter that shares opportunities to fulfil competencies, upcoming research conferences, and highlights the work of current GCSP Scholars. Approximately one third of Scholars mentioned the positive impact of the newsletter in their responses. As for the opportunities to fulfill competencies, one student wrote, "I believe the council helps the program run more smoothly and readily offers guidance to younger/less experienced scholars. They also help keep us updated."

Conclusion and Future Steps

This work-in-progress reveals that creating a student council within the GCSP increases the number of engineering students who participate in the program. Although this is a preliminary study, we hope to continue increasing the involvement within the program as the Council further develops the community of GC Scholars at XXXXX. For continuation of this study, we are interested in tracking the effect of the student council on the outcome and development of GC Scholars in the following key areas: the quantity and quality of applicants to the Program, engagement from Scholars in GC-specific activities, and post-graduation pursuit of careers in the Grand Challenges. Beginning in fall 2020, we will track these areas in order to monitor the effect of the student council on the success within the Program.

Although this is a qualitative study as opposed to an analysis across GCSPs at multiple universities, the implementation of a student council offers promising results for the growth and efficacy of the Program. For GCSPs with enough Scholars to create a council, this may be a viable path for increasing the success and continued growth of a GCSP.

References

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