

Work in Progress: Self-Advocacy as a Framework for Supporting Academic Success of Minoritized Graduate Students

Introduction

This work in progress paper outlines the initial evaluation results for a professional development program that is focused on strengthening self-advocacy among historically minoritized graduate students in science, engineering, technology and math (STEM). The program's framework for self-advocacy is adapted from existing frameworks developed by the American Counseling Association and the Learning Disabilities communities to educate students on skills that support academic success. The American Counseling Association (ACA) published the Advocacy Competencies between the three areas of client/student, school/community, and public arena advocacy as part of their guidelines for effective counseling of minoritized students [1, 2] and is based on a social justice framework [3].

The three skills with self-advocacy are: **empowerment or a sense of agency** (having control over decisions and life events), strong **self-awareness** (knowing what is right for oneself and setting goals based on this criteria), and **social justice** (knowing how to identify and challenge negative social climates and systems of oppression) [4]. Within the different forms of practicing and teaching advocacy, working with students by teaching them the skills within a counselor and student or mentor and student group structure was found to help minoritized students reach academic success [3, 5, 6].

About the GREATS program

The *GRaduate Education for Academically Talented Students (GREATS)* program is a professional development initiative aimed at supporting historically minoritized students within STEM doctoral (PhD) programs at the University of Illinois at Chicago. The GREATS program is framed on the three educational pillars of self-advocacy: (i) Empowerment, (ii) Promoting self-awareness and (iii) Social Justice. For the first pillar of empowerment, minoritized STEM graduate students learn leadership skills to help them experience social integration and increase their sense of belonging in their peer-groups. For the second pillar, the students build community within the group. We also mentor and promote self-care to increase awareness of mental and physical well-being. For the third, social justice pillar, we integrate teaching policies and social and historical contexts of STEM higher education. The research aim of this project is to study whether developing skills in self-advocacy of historically minoritized students will support their academic success and would be demonstrated by strong sense of belonging and self-efficacy in a chosen field of PhD study, increased motivation in help-seeking and health or wellbeing, and increased motivation to advocate for themselves or others and take on leader roles within their research groups, departments or in service work on and off campus.

Programming

Because of the pandemic, all events and outreach were pivoted to virtual platforms during year 1 (2021-22) of the program. Planning for events and outreach were virtual based on the

continuously changing status of campus closures due to the pandemic last year into summer 2021. During the first year, 5 events here hosted in the program during the Spring and four event and one group activity were hosted in Fall 2022. To date, programs have included professional and peer presentations, group readings and discussions, workshops and expert panels focused on the three pillars of self-advocacy. A more detailed description of the programming and supports in the program can be found in Reference [7].

Discussion

For this work in progress, we present the survey developed to evaluate the program's impact on supporting the student's skills in self-advocacy and whether it had an impact on their pursuit of a PhD degree. The survey was given to the students in Cohort 1 and 2 with the aim of obtaining an initial measure for sense of belonging and engineering/science identity, participation in leadership, and knowledge on policies. We also included open ended questions on whether students have applied any of the skills they have developed to self-advocate within their graduate programs and research groups. Thus, we present the survey that was used and proposed focus group questions which were revised based on the formative assessment report. As mentioned above, students' skills in self-advocacy would result in increased self-efficacy, sense of belonging and increased self-care. In general, having a strong sense of belonging and self-efficacy within STEM is strongly linked to academic success [8] and increases motivation to pursue STEM education [9].

The researchers adapted measures from the Prematriculation Inventory (PMI) developed at and for the University of Illinois at Chicago. The PMI measures noncognitive assets that have been found to correlate to academic success for first year undergraduate students [10]. The PMI is administered at UIC to first year students prior to starting their first semester (i.e. pre-matriculation). The PMI includes a battery of items focused on what it terms noncognitive assets. Noncognitive assets include skills, strategies, attitudes, and behaviors of students that impact their academic success. Noncognitive factors can include academic behaviors, academic perseverance, academic mindsets, learning strategies, and social skills [11]. We adapted questions related to Time Management, Self-Efficacy, Sense of Belonging, Help Seeking and Managing Stress. In addition, mentoring by the academic supervisor is also important for PhD graduate students. In this case, measures in effective mentoring of faculty were adapted to ask about the mentoring and effectiveness by academic supervisors [12]. We also wanted to know if students had any prior leadership, advocacy or social justice efforts, and so open-ended questions have been developed and will also be asked at focus group interviews at the end of the academic year's formative assessment by the program evaluator. The questions in the survey are in Appendix A.

Ongoing research and evaluation: Refining qualitative protocols and framework

We are currently processing initial evaluative feedback and participant data from our external evaluator—including responses to PMI-adapted survey items—but our preliminary reviews of the report and data indicate that the internal community-building activities and experiences are positive elements among the GREATS participants. Additionally, the report points to other potential levers for additional research related to the project's framework for self-

advocacy: (a) The concept of “sense of belonging” for graduate level students is more complex than our initial thinking and framing reflect; (b) The role of the doctoral supervisor/advisor is emerging as something more salient than we initially anticipated, as evinced by responses to survey items; (c) How complex is “sense of belonging” across settings, could there be a mismatch for participants?

As we continue to review the report, our aim is to refine upcoming programmatic activities as well as to inform the external evaluation process and collection of additional evaluative data from participants and program activities. Additionally, we are continuing to develop and refine the working conceptual framework for self-advocacy. Based on both the evaluation report and ongoing discussions within the project team, we are developing a visual representation of that framework that we hope to continue to refine based on additional data and evaluative feedback.

Toward developing additional research objectives and activity, we have also developed an understanding with our external evaluator that will allow for us to collaboratively generate and refine questions and other research prompts (some of which we share below) that can be used by both groups (project personnel and evaluators) to inform both evaluation reporting as well as provide data that is informed by our investigative questions and research interests. Also based on the external evaluation report, the focus group interview questions have been developed and are shown in Appendix B.

Summary

In summary, we outline the mixed-methods survey items and planned focus group questions to measure sense of belonging, self-efficacy, advocacy, and other non-cognitive factors that affect academic success. We also included measures on the faculty mentoring by the student’s research advisor to screen for effects due to advising by research supervisor. As we continue to develop programmatic activity for participants and collect additional data, we will refine both the conceptual framework and develop additional research objectives.

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Appendix A

Demographics that were asked of students:

Q1. What is your name?

Q2. What is your UIC email?

Q3. Are you a first generation college student?

Q4. Were you born in the U.S.?

Q5. How many children do you have?

Q6. What is your gender identity?

Q7 What is your race/ethnicity identity?

Academic progress of students in their PhD program:

Q8 - Have you taken your prelim exam?

Q9 - Have you completed your coursework?

Q10 - What major and degree are you working to complete?

Effectiveness of the academic supervisor

Q11. To what extent do you agree to the following: (Disagree, Neither, Agree)

- a. My research supervisor really motivates me to do well.
- b. I am disappointed in the quality of mentoring my research supervisor provides me.
- c. I am doing poorly in my research because my research supervisor's guidance is not effective.
- d. What I learn I learn on my own.
- e. I would do better if my research supervision was better.

Measuring Self-Efficacy

Q12. How confident are you that you could complete the following tasks? Use the following scale: 0 is not at all confident and 100 is extremely confident.

1. Research literature in your field
2. Write for publications (conferences, journals, etc.)
3. Do well on your preliminary thesis exams
4. Perform well in your research project
5. Keep up to date with your research goals
6. Manage time effectively
7. Understand what your research supervisor expects of you

Sense of Belonging by the PhD student in their research group and program

Q13 How often do you agree with the following statements? (Never-Always- 5pt scale)

1. I feel a sense of belonging in my research/lab group.
2. I feel like a member of the graduate student community.
3. I would choose the same graduate program over again.
4. I would choose the same graduate supervisor over again.
5. My research supervisor is supportive of me.

Measuring leadership and advocacy experience of the students

Q14. How well does each of these statements describe you? (Not well at all-Extremely well 5 pt scale)

1. I have been active in on campus student societies or student organizations as an undergraduate or graduate student.
2. I have been active in organizations outside my campus as an undergraduate or graduate student
3. I have served in leadership positions for a society, organization, or at my university/college.
4. I have been part of leadership development programs.
5. I have wanted to take on leadership roles in the past but have hesitated to take on these responsibilities.

Measuring help seeking efforts of a PhD student

Q14. Please indicate your agreement with each item. (Strongly Disagree-Strongly Agree 5 pt scale)

1. Sometimes I feel overwhelmed at the size of the graduate research program.
2. I have a hard time knowing who to go to for help in my department.
3. I have found it easy to navigate my department.
4. If I have a question about my academic progress in my graduate program, I know who to talk to for help.

Formative feedback by the program participants on professional development activities.

Q15. To date in the GREATS program, what aspects of the processes we use have been helpful to you (Gatherings (in person/zoom), SLACK channel, emails, reminders, etc.)

Q16 - Think of a current issue you are facing (could be an interaction with someone or a personal challenge). How are you problem solving around the issue? Are there knowledge or skills you have learned from the program that are helping you to solve the issue? Where might you need program support?

Q17 - Is there anything that we are missing the mark on? Anything you think we should know? Do you have ideas of how we could improve the program?

Appendix B

Skills development by the students on the three pillars of self-advocacy:

1. Tell me about the professional development activities you participated in this year and how these activities have impacted you.
 - a. Additional probes for effectiveness in developing skills, dispositions, and leadership, or developing changes in self-awareness or agency.
 - b. How has this program helped you to advocate for social justice?
 - c. In what ways has this program influenced your academic record, perseverance, or ambitions?

Self-Awareness of the student

2. How do you describe yourself or vision yourself within your profession? In academia or industry?
3. In what ways have you learned to take care of yourself from this program?

Identifying how sense of belonging has been impacted by the program.

4. In what ways has your involvement in GREATS lead to greater belonging at UIC, in your field of study, in your lab?
5. Has the program helped you increase your sense of belonging in your field of study through community building?
6. What doors or networks have opened to you as a result of this program?
7. What are your experiences within your field while outside your support system? For example, what is your sense of belonging when at a research conferences, onsite at internships, with job seeking, within classrooms as the teaching assistant or instructor?
8. How are you using self advocacy skills to create a sense of belonging outside of your supports structures? How are you leveraging these skills when they are challenged in their sense of belonging?

Formative questions on the program:

1. How could the program have supported you better this past year? In what ways could they better support you for the next academic year?
2. Anything I didn't ask you about that I should have?