

Leadership development in co-curricular student groups: a phenomenographic study

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Work-in-progress: Exploring Diverse and Inclusive Engineering Student Leadership Development

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Abstract

Engineering co-curricular activities are a significant part of the educational experience at many institutions. This study explores perspectives of a variety of students on their experiences in co-curricular spaces with a particular focus on diversity, inclusion and leadership development. Eight students involved in a variety of co-curricular organizations and from a range of backgrounds are interviewed. These students present a variety of perspectives on their experiences. Challenges around creating inclusive spaces are highlighted. Suggestions for improving the climate in co-curricular groups include expanding existing training around inclusion to encompass all group members rather than only group leaders as well as continual training.

Keywords

Diversity, inclusion, engineering leadership, safe space

Introduction

Leadership development has long been a topic of educational interest [1]. Specifically in engineering there have been calls to supplement technical skill development with social, organizational, and professional skill development [2]. Intercultural and equity driven competencies are an important part of this development [3]. Giving students an ability to recognize the different ways they can be leaders allows them to engage more deeply in experiential learning and leadership opportunities, as well as achieve better outcomes after graduation [4]. This study seeks to understand student experiences in co-curricular spaces where many of these skills may be developed. The study focuses in particular on diversity and inclusivity in order to ensure access to these development opportunities. This work presents the perspectives of a variety of individuals on their experiences in co-curricular engineering spaces.

Methodology

This study seeks to understand the experiences of a variety of students. Given this, an interpretivist paradigm is used in framing the study [5]. The experiences shared by participants may naturally be different and perhaps contrary. This focus on differing views and experiences led to the selection of phenomenography as a framework for this study, as phenomenography seeks to describe differing understandings of reality [6], [7]. There have been critiques of phenomenography and questions raised about its relations to phenomenology. The authors acknowledge these important discussions and refer readers to literature sources for an exploration of these questions [8], [9].

Methods

A common method used in phenomenography is the individual interview [10]. Guidance around interviews in phenomenography is that questions should remain open-ended and that there should not be too many questions in an interview. This is done to allow a fulsome exploration of the experienced phenomenon. This guidance has been used in developing a semi-structured interview script which can be found in appendix A. The interview script contains four relatively short background questions (1-4) followed by five open-ended questions (5-9) focusing on diversity, inclusion and leadership. These open-ended questions seek to: gain a participant's perspectives on their own experiences in engineering student teams; understand if and how a participant's identities played a role in their engagement in teams; and investigate what steps their respective teams could take to create more inclusive spaces for current and future members alike.

Prior to contacting participants, the research study received approval from the Behavioral Research Ethics Board at the University of British Columbia (UBC). Participants were recruited through professional networks. Recruitment was aimed at participants of diverse genders and ethnicities. Participants were selected in their 3rd or 4th year of study as they would likely have had more opportunities to participate in co-curricular student groups. Participants were offered a \$30 gift card as compensation for the time taken to complete the study. Eight participants were interviewed in total. Following interviews, transcripts were produced and analyzed using thematic coding.

Results and Discussion

Among the eight student leaders interviewed, three identified as male, four as female, and one as transgender. Of the three domestic students, one student identified as having South Asian background, one student had a mix of East Asian and White backgrounds, and the other student identified as White. Of the five international students, three students came from Latin countries while 2 students came from African Black communities. There were 3 representatives from engineering design teams, 2 from undergraduate societies, and 3 from other engineering co-curricular organizations.

Analysis for each of the five open-ended questions is presented with a focus on themes as well as differing views among participants.

1. Motivation to take up Leadership Position

Most students were found to have stayed in teams they had initially joined upon entering UBC Engineering. They started off as general members, working in sub-teams. The general trend for members of engineering design teams is to initially work in sub-teams and rise in responsibilities over time. For half of the participants, this was the case. They had joined their particular teams early in their degree, and as they progressed, they were interested and had garnered skills to lead small groups of people, eventually taking up full leadership roles towards the end of their undergraduate. In addition, many of the participants saw the need to improve the management systems within their teams and wanted to step up as a leader to help shape their teams, having

participated under previous team management. One student who identifies as trans described being an advocate for the queer community in a lot of spaces. When asked what their motivation to take up their role was, they said, *“There's a sense of like who else if not me, because if I'm not doing it, I always feel that, maybe no one else is going to”* and *“I feel a certain level of responsibility to provide advocacy and to not necessarily defend but to, like, increase inclusivity and defend equity.”* Another student identifying as a Black female, expressed that she did not feel welcome in many engineering spaces and so mostly sought opportunities outside of engineering. However, her perspective had changed when her mother had said, *“if I can't find a space where I belong, why don't I create that space?”* That led her to collaborate with her peers from similar backgrounds and to launch a student group that focused on enhancing Black engineering students' experiences at the undergraduate level, while also welcoming those of other races and ethnicities to work together in educating themselves about the Black diaspora.

2. Finding a Team and Role to Fit into

A common response from international student participants in terms of finding a team and role was that they wanted to get involved on campus and build networks in order to set up connections for their futures. Domestic students did not have as strong of a focus on networking – they were more interested in finding opportunities to learn and develop new skills. A couple of students noted they had trouble finding roles that fit their interests at first. A female Black student said, *“I did have some challenges. I haven't really seen people like me taking on roles in like on council or student design teams. There's little to no representation of people of my color in such leadership positions on campus, or in the department.”* The participant identifying as queer talked about how they had been *“shadow banned”* from joining the Engineering Society in their first year, they then looked for more finance-based roles and thrived in them. Being the only person who identified as queer and trans, they were always asked by other binary folks to speak to the community about queer experiences. The participant recalled, *“I was peer pressured to get more into EDI because I would get comments like, ‘Oh, you're the first trans person I've ever met,’ and it kind of chued me into the fact that I could probably contribute to the conversation we're having about this”*.

3. Challenges faced in their Roles

All male students reported that they had not faced any discrimination when they were selected for their positions and they generally thought their teams and organizations were diverse and inclusive. One of the black students mentioned that she had been taught before coming to UBC that in order to gain the same respect as her peers from other identities, she would have to work twice as hard. As she had not seen examples of other students of her similar identity in leadership positions, especially in the engineering community, she did not want to venture in by herself as it would likely entail emotional labor. The student who self-identified as queer talked about often being the only trans and queer person in different spaces, hence experiencing the pressure of being the only representative of their community. They were also faced with hostile behaviours,

not just from their peers but also in academic settings often involving professors and teaching assistants.

4. Diversity within the Teams

Some of the teams had good diversity in terms of gender but not necessarily race/ethnicity. Some teams were noted to be too small to reach a diversity goal. Participants noted the hiring processes never emphasized focusing on students' backgrounds and did not explicitly focus on inclusive recruitment practices. As the only female Black student graduating in her class, one of the student leaders mentioned that sometimes her and her peers identifying as Black would only be invited to certain spaces to look more inclusive, but without the actual intention of inclusion in the community. She recalled being told, *““You need to do this because we need to add a little bit of spice”, but then others are subtle, you wouldn't notice unless you were actually paying attention.”* Another participant said, *“So, no matter what race we're from, we had a common struggle, for a lack of better words.”* For her it was relatively easy to bond with other executive members of the team as they had all been in different engineering departments and so had similar experiences as female-identifying students in a male-dominated field.

5. Role of Leaders in Creating Inclusive Spaces

Some of the common themes of leadership qualities and traits were empathy, openness to new perspectives, and the ability to have open communication with other executive members and students they led. Many mentioned creating a safe space for different types of voices to be heard being important in order to make other members feel welcome in the space. One student mentioned that a good way of leading is to talk to those who will be led and figuring out what their own leadership styles are and how others like to be managed within the team. An interesting point that came up from a couple of different interviewees was regular training of the leadership team on EDI topics and regular check-ins with members of the overall team to see how they feel about the direction of the team on topics like inclusivity and diversity. One interviewee thought this could help ensure more inclusive and less bias in recruitment and outreach.

There is training available for engineering design teams each year including a module on EDI. This EDI module is mandatory for team leads and captains. With this in mind, participants who have been leaders in these groups suggested expanding the scope of the workshops to more than just once at the beginning of the term. They would like to have continuous training in this area and also would like to include all members of their teams. They hoped this would lead to more well-rounded understanding of these issues and open conversations among all. One of the participants shared, *“I think that leadership starts from the regular members. And so, if you have a diverse pool from the beginning then I think it just builds up”*. Other suggestions were to have regular check-ins with everyone on the team to understand their backgrounds and keep a record of their identities in order to track hiring trends. The need for open communicating about EDI

issues was a common response from all participants. Many participants stated that as leaders they may not always have the answer, but working with the rest of the team to figure out equitable solutions was a quality that was desirable in such roles.

Further Discussion

Among the student leaders interviewed, all male students mentioned that there were no visible deficiencies in diversity that they had observed and that their teams were inclusive, or at least there were no measures taken to make the organizations exclusive to anyone. On the other hand, there were also students who had experienced been racialized and excluded from engineering communities due to their gender or ethnic backgrounds. These results are consistent with other studies in the engineering literature showing a difference in perception around inclusion in minority and majority groups [11], [12].

Conclusion

Responses from participants highlight continuing challenges for inclusion in engineering co-curricular spaces, which impact student participation in these spaces. This highlights the need for a particular focus in creating spaces where minority students, visible or otherwise, feel safe to share their experiences and are welcome to take part in leadership activities.

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Appendix A : Semi-structured interview format and questions

[Land acknowledgement, introduction, safe space acknowledgement, review of consent form and interview recording]

Demographic Question:

1. What is your gender identity?
2. How would you describe your background/race/ethnicity?

Interview Questions

3. Please describe your role in [STUDENT GROUP NAME].
4. Who influenced you to study engineering?
5. What motivated you to take up this leadership position?
6. Was it easy for you to find a position you fit in? If you didn't find a position right away, what did you do when looking for one?
7. Did you face any challenges in your position due to your identity?
8. What are your thoughts on your team's diversity?
9. What are some steps you can take (or do) as a leader to make everyone in your team feel included?

[Time for additional questions from participants and closing]