”Tricks of the Trade”: Sharing the Experiences of Queer and Trans Graduate Students

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Abstract

Engineering, STEM, and academia have taken strides towards diversity, equity, and inclusion in the past decade. While progress has been made there is still ways to go. This “Tricks of the Trade” research paper describes a student-led panel that examined the experiences of queer academics and graduate students within several STEM fields in a large public research institution in the Eastern United States. The panel was intended to be a space for graduate students in the 2SLGBTQIA community to share with administrators, faculty, and staff their experiences and those of fellow graduate students in the college/institution. The panelists discussed whether they have faced issues navigating multiple identities within academic spaces. To make queer and trans students feel more welcome, they also discussed the changes that would make them feel more welcome and included within academia and their department(s) (cultural and/or infrastructural changes). They also provided advice and recommendations to future queer and trans graduate students. The panel received overwhelmingly positive feedback, and the audience expressed their willingness and enthusiasm to learn and support queer and trans graduate students. Overall, the lessons learned from the Queer and Trans Graduate Students Panel are as follows:

1) Provided an opportunity to inform about the specific obstacles that many queer and trans students experience in graduate education.
2) Contributed to the knowledge of designing, facilitating, and conducting a student experiences panel that helps administrators and educators realize connections between student experiences/identities and various aspects of the academic graduate environment.
3) Provided suggestions to improve the experiences of queer and trans graduate students in STEM.

Introduction

Definitions

For this paper, the term “2SLGBTQIA” is used to describe individuals who are Two-Spirit, Lesbian, Gay, Bisexual, Transgender, Queer and/or Questioning, Intersex, Asexual. The main identity of focus in this study was sexuality and gender, and throughout the paper, participants are referred to by their reported sexual and/or gender identities. Throughout the paper this term will be abbreviated to “LGBTQ”

Motivation and Goals

In addition to the problems many graduate students face (financial instability, difficult work-life balance, isolation, health issues etc.), queer graduate students often face devaluation of their work, marginalization, microaggressions, and occasionally outright hostility [1], [2]. Many of these issues are not unique to students out about their LGBTQ status but are common to students with any number of minority identities. To begin to address these issues, a panel of queer and trans students was held, sponsored by the College’s teaching and learning center. The experiences of six queer students were shared with a diverse list of attendees. For the sake of remaining focused this

paper discusses the panel's LGBTQ specific experiences, which said overlapping identities cannot be separated.
The motivation and goals at hand when building the panel was twofold:

1. Educate faculty, staff, administrators about the specific and intersectional issues that LGBTQ graduate students face.
2. Create a space for students to advocate for themselves to faculty open to listening.

The specific benefits of a panel structure are discussed in the methods section.

Methods

Positionality

Though many have played a role in the development of the panel, the positionality of the two lead authors, who took the leading role in facilitating and evaluating the panel, will be discussed in detail.

The first co-author is a white, able-bodied, nonbinary trans femme, who uses they/them pronouns. They initiated the idea for the panel and acted as moderator. They are a Ph.D. candidate in the field of electrical engineering with a focus on standoff spectroscopy and light matter interactions. They are an activist in their local community with interests including queer and trans liberation, tenants' rights, and labor rights. Their experiences as a community organizer and as living as a visibly trans individual lead them to the conclusion radical change is necessary in the field of engineering, and within the educational system. They believe that for the field of engineering to grow, hierarchical, white supremacist, classist, and patriarchal power dynamics need to be removed. Radical change attacking the problem at the root and changing it by living and teaching with new paradigms is necessary.

The second co-author is a first-generation Mexican American man, a first-generation college student, a PhD candidate, and uses he/him/él pronouns. He coordinated the evaluation of the panel. He has a background in mechanical engineering, engineering education, and has a knowledgeable depth of various engineering disciplines and engineering settings. His multi-disciplinarity has given him the vision and tools to be able to think about data from multiple different points of view and understand how critical humans may be to the system of engineering. His interest in working on equity and social justice issues in engineering education emerges from his own lived experiences and cultural background. The author recognizes that the current educational system underserves many students, in particular marginalized individuals, and that change is needed. He believes educators can be socio-political change agents and stimulate improvements toward approaching diversity, equity, inclusion, and belonging (DEIB) on a larger scale.

Development of panel

The panel format was chosen to give attendees and panelists the chance to take an active role in the development of more inclusive and just spaces. The creation of this panel supports the goal of making STEM more inclusive of LGBTQ identities and experiences. As discussed in Cech et al. LGBTQ students face issues of belonging and inequality in engineering [1]. In addition to that the use of a panel is broadly contained within the idea of transformational resistance, as defined in

Yang et al. [3]. Transformational resistance is defined as an action that reflects a critique of the social oppression at hand, rather than conformist resistance that does not challenge the structure at hand. The structure of a panel puts graduate students in the seat of authority and allows them to directly relay their experiences to the attendees. This challenges the structure by empowering overlapping disempowered groups, graduate students, and LGBTQ people. Members of the panel included both cis and trans people, individuals who are nonbinary, individuals who are gay or lesbian, and students on the neurodivergent and asexual spectrum. When creating the panel, it was essential to ensure that a broad swath of identities were represented. There will always be challenges representing all identities; in this panel, there was a lack of students who were not white. Future panels would benefit from including additional, different intersectional identities.

The panel referenced in this paper was out of a similar panel planned and moderated by the first author the ASEE Zone 1 conference in 2023. Following the success of it, a panel was run again by students with support from a teaching and learning center. Engineering faculty, students, staff, and administrators were invited to attend the panel. Demographic data is limited, but there were approximately 50 attendees in the conference room resulting in attendees standing and bringing chairs from other rooms.

The questions asked to the panelists are as follows:

1. Brief introduction: What is your name, pronouns, field, and what year you are in?
2. Have you faced issues navigating multiple identities within academic spaces? E. g., your experiences as a queer person, as an academic, as a black or brown person, or as a person with a disability? *This question was included to highlight to the audience that these identities are inseparable, and the experience of the panelists is intersectional in nature.*
3. What challenges have you faced as a queer graduate student, and, in one sentence, what has been a source of strength for you through those challenges?
4. What changes has your department or academic community made, without you asking, to make queer and trans students feel more welcome?
5. What changes would make you feel more welcome and included within academia and your department? This can include both cultural and infrastructural changes.
6. In one sentence, what has been a source of joy for you as a graduate student?
7. What is a piece of advice or recommendation you would like to give to future queer and trans graduate students?

Except for the first question introducing the panelists, the questions were framed deliberately to guide the discussion in the room and frame context. For instance, question 2 is necessary, because it connects the intersectional identities of the panelists with those shared by attendees and emphasizes how multiple systems of oppression are connected. The combination of questions 4 and 5 is also important as it helps to show the lukewarm response and attempts made by departments to include and accommodate queer and trans graduate students are not sufficient, and doubly so when compared to what the panelists would appreciate.

In addition to questions highlighting issues, it is necessary to give panelists a chance to describe experiences that brought them joy. This helps to re-frame the narrative that being queer, especially for trans individuals, is a painful experience. There are obviously challenges associated with living

as these identities, but explaining experiences of joy brings to the forefront what has been effective in helping students.

Instrument and Evaluation

Participating administrators, staff, faculty, and students were requested to complete pre- and post-surveys designed to critically explore their own knowledge, perceptions, and experience of LGBTQ identities and DEIB in STEM. The pre-survey was comprised of one set of Likert response scale items, and two open-ended items. The five-point Likert response scale items were selected and adapted from several questionnaires that asked participants their level of agreement to statements relating LGBTQ identities and DEIB in STEM [4], [5], [6]. The open-ended items asked participants what their first impression of the panel/panelist was, *and what are their expectations of the panel/what do they hope to gain by participating in it.* The post-survey included the same set of Likert response scale items, four open-ended items, and demographics items. The open-ended items asked participants *how the panelist experiences made them feel, what was the most important thing they learned from the panel, what aspect of the discussion do they see using in the future (where, with whom and how), and if they had any other comments.* The demographic items included: academic position, gender identity, are they transgender, identify as Lesbian, Gay, Bisexual, Pansexual, Queer, or Asexual (LGBPQA), race/ethnicity and pronouns. The post survey included an opportunity for attendees to provide any additional comments or concerns.

Participants

Twelve (six male and six female) administrators, staff, faculty, and students completed the panel pre- and post-surveys. The majority of the participants are staff (33.3%) and 17% hold faculty appointments. Participant academic positions are summarized in Table 1. Finally, 25% of the participants identified as LGBPQA, and 58.3% identified as White. Race/ethnicity demographic breakdown of panel participants is shown in Table 2.

Table 1. Participant responses by Academic Position

Position	# of responses	% of responses
Administrator	3	25%
Staff	4	33.33%
Faculty	2	16.67%
Graduate Students	3	25%

Table 2. Participant responses by Race/Ethnicity

Gender	# of responses	% of responses
White/Caucasian	7	58.33%
Black or African American	0	0%
American Indian or Alaska Native	0	0%
Asian	2	16.67%
Native Hawaiian or Pacific Islander	0	0
Hispanic or Latino(a)	3	25%
Not listed	0	0%

Lessons Learned

Through this experience there are two types of lessons learned. There are lessons learned from the panelists and their experiences, and the lessons learned from evaluating and planning the panel. Several lessons are specifically highlighted for the audience. One major lesson was that across many STEM fields, academic departments are not doing enough to create an inclusive climate for LGBTQ graduate students. The university where the panel took place is listed as a "five-star" university for LGBTQ students according to Campus Pride [7]. To receive a positive rating, certain resources must be available for LGBTQ students. Resources include access to queer healthcare and groups specifically for queer students. The availability of resources does not necessarily indicate the climate of the university or the reflect the experiences of LGBTQ students. The perception is that there have been lukewarm efforts, but panelists still described feeling isolated. One panelist spoke about the financial challenges of graduate school, and the occasionally precarious situation queer students are in considering that queer students tend to have smaller familial and social safety nets. Given broad heteronormative assumptions, some students expressed feeling uncertain about how to address their queer identity in the context of sharing information about romantic partners or disclosing their gender identity and transgender status. While this seems minor in comparison to the acts of violence experienced by some individuals, the prevailing culture of cis heteronormativity creates a culture not conducive to queer belonging.

From the panel evaluation, there were various lessons learned. First, we found that panel attendees had *meaningful* and *positive* reactions. Specifically, the attendees gained an understanding of queer and trans students' individual experiences, unique journeys, and accomplishments, and became frustrated with their challenges and barriers. It was indicative that the panel had a significant impact on participant's awareness of the obstacles that many LGBTQ students encounter in graduate education which led them to be cognizant that there is not enough being done proactively to make a welcoming environment in the institution, and that they desire to find ways to make the university, college, and department more inclusive. Second, we learned that participants acquired *essential elements from the panel discussion.* For instance, they took away that *"*it is okay to be curious and ask questions to LGBTQ students", and that "students' personal identities can change as a result of exposure or meeting role models with similar identities and identifying with them". Third, we learned that participants indeed *see themselves using aspects of the panel in the future.* For example, they expressed that they would "introduce themselves with their names and pronouns to project that they are open to conversations," "add an inclusive statement to their class syllabuses and/or research lab group guidelines" and will have confidence in allowing themselves to make mistakes when learning more about LGBTQ experiences. Finally, from participant feedback and informal conversations afterwards, we learned that administrators and educators would like to attend similar events in the future. This provides an opportunity for engineering graduate students to organize panels and workshops that connect their experiences and identities to various aspects of the academic environment. These future opportunities could be implemented locally and/or nationally through on-campus events and national conferences.

Conclusion

Inclusion and diversity should go beyond allowing in those with visible, assumed identities [8]. True inclusion requires an environment where all people who choose to embark on a journey will

be allowed to follow that path to the best of their ability. The biggest "trick of the trade" from this work is that we don't often hear students' stories about the academic experience. By having this panel, the attendees got to really hear about the challenges that minoritized students face. This group in particular is one that is not often addressed in engineering education. Thus, the response of the attendees and panelists was overwhelmingly positive. Worth noting is that all panelists recommended for future students to "find their community." Given the challenges of graduate school, community support is necessary. In all cases the community referred to by the panelists was built outside of academic contexts. While it is good that panelists found community in athletics, activism, and hobbies, this reflects broadly that there are still issues of community building within academic spaces and institutional efforts have been insufficient. This advice is consistent with what has been reported in literature by other studies on LGBTQ STEM students [3]. Many attendees after the panel had approached the panelists to offer words of appreciation and to continue asking questions. Given the positive responses across the board it would be beneficial to run a panel like this semi-regularly. Lastly, since the power of hearing the stories of others helps create empathy, we suggest students consider doing similar efforts on your campus.

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