Increasing Faculty Participation in Pedagogical Diversity and Inclusion Activities

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WIP: Increasing Faculty Participation in Pedagogical Diversity and Inclusion Activities

Introduction

Under-represented minority (URM) (Black/African American, Hispanic, and American Indian/Alaskan Native) and female students often face an unwelcoming and unsupportive climate in higher education [1][2][3]. This is especially true in engineering, where this hostile climate can lead to an achievement gap. The achievement gap is the difference in academic performance between minoritized student populations and their non-minority peers. If left unchecked, this achievement gap can affect student persistence in engineering and eventually affect diversity in the engineering workforce. Research suggests that diverse teams with cognitively diverse approaches to solving problems will outperform a team of the cognitively best (but homogeneous) problem solvers [4]. This greater creativity and better problem-solving ability leads to better products and therefore increased profitability [5].

In engineering, many factors contribute to the achievement gap, most of which are systemic. Systemic barriers include the climate that students face in the classroom, classroom and faculty diversity, support systems in place for at-risk students, course size, and access to major. [2][6][7]. Of these, the role that faculty can play in fostering a healthy learning environment and thereby reducing the achievement gap is significant [8].

An inclusive classroom environment is one in which all aspects of the classroom—from the curriculum, faculty to student interactions, to student-to-student interactions—are purposefully designed to promote the intellectual, social, emotional, and physical growth of all students [9]. While inclusive teaching practices improve the learning experience of women and URMs, they can be beneficial for all students. Faculty can play a large role in fostering an inclusive climate in the classroom but need to be appropriately trained.

Training is needed for the following reasons:

1. Engineering faculty who are experts in their technical fields may not be experts in inclusive teaching practices and effective teaching methods. They may not be up to date on engineering education research on Justice, Equity, Diversity, and Inclusion (JEDI) in the classroom.

2. Prior teaching experience for some faculty may consist of their experience as teaching associates during their undergraduate or graduate education or from observing other faculty. Many faculty, especially those in research institutions (R1), may not have taken a course dedicated to teaching engineering students such as the 'College Teaching in Engineering' course offered at The Ohio State University.

3. Even for those faculty who have background knowledge on JEDI in the classroom, training can help grow their confidence as inclusive-minded instructors.

Therefore, to initiate a change in the climate in the entire college, all faculty should have baseline understanding about the current climate, the issues faced by women and URM students, and research-backed strategies that they can employ in the classroom to make it more inclusive.

Voluntary participation of engineering faculty in JEDI-based professional development and training activities is often limited. This could be due to a lack of interest, a belief that they are already doing all that can be done, or a lack of time [10]. Another reason could be a tenure-track system where faculty are not rewarded equally for their teaching skills as for their research skills. These faculty are more focused on research and scholarship [11]. Training by experts at university-wide teaching and learning centers (TLCs) can be useful if engineering faculty attend.

Data from the centralized TLC at The Ohio State University (OSU) shows that getting engineering faculty to participate in JEDI events and workshops can be exceedingly difficulty. At OSU, the centralized TLC regularly organizes workshops on inclusive teaching and other JEDI events. Between 2015 and 2019, they organized over 45 such events. Of these only 1.55% of the overall participants (1422) were engineering faculty. Faculty, in this case, include Tenure Track, Clinical, Research, and Associate (Lecturers) faculty. A breakdown of engineering faculty participation based on JEDI topic is shown in Table 1 below.

Topic	Engineering Faculty Attendance (in %)
Events with the word "bias" in them	6.31% of 111 participants
Events with the word "inclusive/inclusion" in them	1.74% of 459 participants
Events with the word "diversity" in them	4.08% of 49 participants
Events focused on International students	1.14% of 176 participants
Events focused on LGBTQ+ students	2.07% of 145 participants

Table 1: Faculty Participation in JEDI events (2015-2019)

To account for this poor participation, a multi-pronged approach was developed by the authors in collaboration with the individual engineering departments:

1. A detailed, evidence-based resource with information on how to make the classroom a more inclusive environment was created and distributed.

2. A workshop for faculty in the College of Engineering (COE) that was conducted during every departments' regular faculty meetings.

3. Discussion sessions were conducted with faculty who taught project-based courses.

4. Informal lunch sessions to encourage sharing of effective strategies were proposed.

Each component of this approach is described in greater detail below.

1. Resource ('One Pager')
An important part of the initiative was the creation of a detailed resource which contained information in the form of organized steps on how to make a traditional classroom more inclusive. The authors initially planned on creating a one-page resource but quickly realized the difficulty in this task due to the volume of information that needed to be included. While the final version of the document consists of six pages, the authors kept the name 'one pager' as a reminder of the initial plan to create a one-page resource. The information in the document was gathered in two ways: 1) literature review and 2) feedback from faculty.

Literature Review—A detailed literature review was done to identify areas of the classroom that could be made more inclusive by the instructor. Three broad categories were identified: student engagement (student-to-student and faculty-to-student), teamwork, and curriculum/syllabus. For each of the categories, traditional strategies were compared to inclusive strategies. An additional column of comments from the authors further elucidating the potential benefits of each inclusive teaching strategy was also included. The document included a detailed list of references.

Feedback from Faculty—A survey was sent to all faculty in the COE soliciting input regarding inclusive teaching strategies they were already employing in the classroom. The survey results revealed that many faculty were already making an effort to make their classrooms more inclusive and unique results were included in the document. This strategy was employed to obtain buy-in from faculty and show that their experience was recognized and valued.

2. Inclusive Teaching Workshop
The workshop involved the authors visiting faculty and staff meetings for all of the COE departments, presenting the information from the one pager in an interactive manner, and encouraging faculty to use the document. The intent of the workshop was not to dictate to faculty what exactly to do in their respective classrooms but rather to spur discussion and encourage self-reflection on class structure, logistics, and teaching philosophy.

After introducing the concept of inclusive teaching through an interactive dialogue, the benefits of an inclusive classroom were discussed. Following this, demographic information comparing the percentage of women and URMs in the department to the COE as a whole was included. Whether or not the specific department had higher or lower than average female/URM student enrollment, the importance of creating a welcoming climate in the department, and the role it plays in attracting and retaining students from these groups was discussed.

Prior to the workshop, an email was sent to female students requesting that they share information about their experience with the culture and climate in their department. Hundreds of students responded to the email and shared their experiences, both positive and negative. For example, students shared instances of microaggressions that they experienced from their fellow students and times when they felt excluded from the conversation. They also noted when a particular faculty member demonstrated inclusive or exclusive behavior.

These student comments formed the basis of discussion and activities in the workshop. The faculty were asked to brainstorm strategies of how an instructor could positively influence the classroom based on each of the situations provided. The activities were done in a think-pair-share format. Following each discussion, the authors offered suggestions from the literature and referred to the one pager, which was made available to faculty in both hard copy and electronic formats.

The workshops, which varied from 30-60 minutes, have been attended by over 375 faculty and staff from 12 engineering departments and centers at The Ohio State University.

Responses from Faculty—The week after the workshop, a two-question survey was sent out to those who attended soliciting feedback about their experience and their thoughts on the one

pager. The comments were overwhelmingly positive, with the only negative comments coming from those faculty who were already aware of all the topics covered during the workshop. 50% of the survey participants indicated that they found the workshop 'Very Helpful' and 32% of them indicated that they found it 'Somewhat Helpful'. Additionally, 84% of the survey participants indicated that they were willing to try out a workshop strategy in their classroom to improve inclusivity. A preliminary analysis of feedback showed that such discussions were not very common in the COE, and there was wide recognition for the need for more conversations.

3. Discussion Sessions

To continue the conversation about inclusive teaching, multiple discussion sessions were held with faculty who teach project-based courses and courses with team-based activities in the Department of Computer Science and Engineering. The discussion sessions involved creating teams using inclusive strategies, proactively facilitating teams by monitoring their progress through the semester, and providing instruction on how to foster an inclusive environment within the team. The conversations involved strategies for conflict management and effectively facilitating dysfunctional teams as well as methods to foster effective decision-making and effective communication within teams.

In all, over 25 faculty participated in this effort and shared strategies that they have tried and approaches that have worked for them. This is an ongoing effort and both faculty and their students are being regularly surveyed to assess the effectiveness of the intervention.

4. Informal Lunches

Informal lunch sessions were planned but never materialized due to the impact of the COVID-19 pandemic and the resulting 'Zoom Fatigue'. The regular brown bag lunch sessions have been pushed to AU 2021.

Future Work

The work described in this paper documents the efforts undertaken in the COE at The Ohio State University to provide faculty with tools to create an inclusive and welcoming environment for all students. The one pager, the inclusive teaching workshop, and the discussion sessions on team formation and facilitation have been made available to faculty to provide practical guidance and increase their confidence to incorporate inclusivity in all aspects of the classroom environment. The authors are currently surveying the faculty to find out whether they have employed any new inclusion strategies and if so, where they learned these strategies.

The authors are currently developing a workshop titled 'Teamwork: How can Faculty Positively Influence Their Student Teams'. The workshop will focus on how faculty can make all aspects of the student team experience inclusive. The workshop will be made available to all departments in the COE. Monthly brown bag lunches will be organized starting in AU 2021 with interested faculty who serve in the role of champions from each engineering department. The authors are planning additional follow-up workshops for the next academic year, at least some of which will also address the graduate student experience.

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