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Lessons Learned: Designing an Empathy Workshop for Engineering Faculty to Promote Equity-Focused Teaching

Dr. Linjue Wang, University of Michigan

Dr. Linjue (Jade) Wang is an instructional consultant at the Center of Research on Learning & Teaching in Engineering (CRLT-Engin) at the University of Michigan. She creates teaching & learning workshops, provides consultation, and leads programs to support faculty development for tenure track and lecturers in Michigan Engineering. She received a Ph.D. in Engineering Education and an M.S. in Industrial Systems Engineering from The Ohio State University. Her doctoral research focused on 1) how engineering students develop empathy during community-based learning (e.g., service-learning) and 2) how engineering educators can integrate empathy into their teaching. Before studying in the U.S., Linjue (Jade) earned her B.E. in Building Environment and Energy Engineering from the School of Architecture at Tsinghua University in China.

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Abstract:

This paper shares lessons learned from designing and reflecting on an empathy workshop for engineering faculty. The workshop design is grounded in research that shows empathy is crucial to building positive faculty-student relationships inside and beyond class. This workshop will first introduce empathy as a vehicle to promote equity-focused teaching in engineering and then engage faculty in role-playing scenarios, self-reflection, and discussions. Through those interactive activities, faculty will be encouraged to practice empathy skills in a low-stakes environment. The paper also captures the inner voice of the educational developer to reflect on the nuances of demonstrating empathy skills in workshop facilitation. This workshop is currently under development to deliver in Fall 2023 to meet the emerging needs of the college of engineering at the University of Michigan. This paper will be presented in a lightning talk format to obtain feedback on the workshop design from the audience.

1. Introduction

Studying engineering is never easy for students. Studies have found that the high-pressure, competitive, and meritocratic environment can be harmful for students' well-being [1], [2], which can result in students leaving engineering due to the lack of sense of belonging. Therefore, there is a need to leverage empathy in faculty teaching engineering to transform students' engineering education experiences into more inclusive and supportive adventures.

Empathy, a term capturing emotional, cognitive, and responsive moments, appears when one person interacts with the other [3], [4]. In the context of daily social and interpersonal interactions, empathy is often referred as "the ability to imagine and understand the thoughts, perspective, and emotions of another person [5]." In the context of teaching, empathy is an important skill for faculty to share the thoughts, perspectives, and emotions of the students. As a result, teaching with empathy in engineering classrooms can have multiple benefits, such as nurturing positive faculty-student relationships [6], [7], creating an inclusive environment to inspire students to stay in engineering, and changing the engineering culture to focus on equity in our society.

First, by teaching with empathy, engineering faculty can build positive relationships with their students by taking the time to know them as whole people, being willing to listen to student's feedback, and being responsive to incorporate the feedback in teaching. Scholars found students can show positive development when they develop a positive relationship with their instructors [8], and the faculty-student relationship is a key relationship related to emotions in teaching and learning in higher education [6].

Second, by teaching with empathy, engineering faculty can create an inclusive and supportive learning environment, rather than a competitive and stressful one, to encourage students to see engineering as their future career. For so long, engineering has been filtering students through the pipeline by offering challenging courses and high stakes grading policies without reflecting on students' actual learning and empathizing with their needs. Through the recent pandemic, we have seen a tendency in higher education to re-prioritize student needs by recognizing and acknowledging the diverse backgrounds and experiences

of students in the classroom [9]. Engineering faculty are more willing to build flexibility into syllabus and grading to accommodate student needs.

Lastly, by teaching with empathy, engineering faculty can foster a diverse student body that will be equipped to address more complex challenges facing our society. Instead of using empathy towards one specific student, teaching with empathy also requires faculty to be able to recognize the systematic barriers and social inequalities existing in society. Faculty can embed socially aware case studies and applications using engineering theories and techniques in their course design. As a result, students will see engineering as a profession that can promote social injustice, which can attract a diverse student body to commit to and contribute to this professional mission.

However, we also recognize faculty can have limited support in teaching with empathy and creating an inclusive learning environment in their busy schedule. Therefore, this paper explores the opportunities for faculty to reflect, apply, and enact empathy in their teaching through a 90 mins workshop in Fall 2023. I developed three goals for this 90 mins workshop:

1. Faculty will reflect on the importance of using empathy and their interaction with students in teaching.

2. Faculty will apply the concept of empathy with equity-focused teaching strategies in their classroom settings.

3. Faculty will create an action plan to enact empathy in their teaching approaches towards their students.

2. Purpose of the workshop: Empathy in Equity-focused Teaching

As empathy is a component of the strategic vision of the College of Engineering at the University of Michigan, this "Teaching with Empathy" workshop can potentially attract many faculty interested in incorporating more equity-focused teaching in their classrooms. Empathy, a learnable and teachable skill [10], can be a great starting point for the faculty's equity journey. This workshop aims to allow faculty participants to walk away from the workshop with a concrete and actionable plan they feel confident incorporating into their teaching. Meanwhile, they are expected to resonate with the idea—*empathy can be a vehicle for creating an inclusive learning environment for engineering students* and translate it into their own teaching and disciplinary contexts. Therefore, my main consideration when designing the workshop activities is to allow faculty participants to share, discuss, and be inspired by different perspectives with others and balance building in enough time for self-reflection. The following configuration of the workshop design presents 70 mins of main content in the order of the three goals previously listed. This does not include the opening and conclusion of the workshop, which takes about 20 mins.

Goal 1. Reflect on the importance of using empathy and interaction with students in teaching
Activity 1. Empathy Flashback (10 minutes)

- Facilitate a think-pair-share activity for participants to pair up and practice active listening skills while sharing a personal experience.
- The personal experience is a story of a memorable professor from their engineering college days and explain why the professor was memorable to them.
- When sharing a personal story, one person speaks (speaker), and the other listens without responding (listener). They then switch roles.
- The listener should practice active listening and try to understand the speaker's perspective and emotions.

My lessons learned: participants' buy-in is crucial for such a workshop. Even if most people who enrolled have already self-selected to be interested in empathy, it can still be hard for faculty to grasp all the benefits of teaching with empathy. Therefore, I found the effective way to start is not to lecture with educational research findings but to allow the participants to consider empathy from their personal experiences, especially from someone who was memorable to them when they were still students. After they share stories with each other, I then present studies of the benefits of teaching with empathy in engineering to connect different aspects of their memorable professors. Meanwhile, this activity also builds in active listening, an important empathy skill, to listen to understand rather than respond. When sharing something personal with each other, the workshop can start to allow the participants to connect with each and build relationships. It is also important to address a community guideline at the beginning of the workshop to enable the participants to set a safety boundary, meaning they only share things they feel comfortable sharing. In all activities, they might require share personal stories and perspectives; it takes courage to be vulnerable and open. The community guideline will ensure they can always prioritize their comfort level.

Goal 2: Apply the concept of empathy within equity-focused teaching strategies in their classroom settings

Activity 2. Reading Discussion: Explore Empathy in Teaching (30 mins)

- Facilitate a short reading based on the article "*What Does It Mean When Students Can't Pass Your Course?*" [11] about a recent controversial case of an organic-chemistry professor who was dismissed after students complained about the grading and teaching in his course.
- Engage participants in a discussion about the role of empathy in teaching. I will prepare discussion prompts as follows:
    1) How would you relate to the *students* in this case?
    2) How would you relate to this *professor* in this case?
    3) What are your perspectives on students who can't pass your course? What are some students' challenges in your class?

My lessons learned: By inviting participants to express their thoughts from multiple perspectives (from the students, the organic-chemistry professor, their own students, themselves, and other faculty), the discussion can generate fruitful conversations across the room. The main takeaway from this activity is to recognize the challenges of incorporating empathy in teaching. At the same time, there could also be consequences for pushing students too hard (student complaints or student mental health issues). The conversation is expected to center around empathy but could evolve to what teaching and authentic learning are. This reading can be a reflection moment for individuals and groups to reflect on who the

students are benefiting from the way they teach and who might be excluded. After the reading discussion, I will present some equity-focused teaching strategies to adopt empathy in classrooms with university resources that can support students who struggle for faculty to add to their toolbox.

Goal 3: create an action plan to enact empathy in their teaching approaches toward their students
Activity 3. Apply Empathy in Teaching (30 mins)

Level 1: Approach students with empathy

- Provide participants with scenarios that illustrate common challenges students face (e.g., a student struggling to keep up with the coursework or a student experiencing mental health challenges). But faculty are also welcome to use the challenges they recalled in Activity 2.
- Ask how they will approach those challenges with empathy.

Level 2: Embed course design with empathy

Pick one thing that they have learned so far (identify one or two concrete strategies they will use to incorporate empathy in their teaching, connect one piece of knowledge in class with a real-world, societal application, or communicate empathy through course policy)

- Create an action plan for implementing this (these) strategies into their course design.
- Provide reflection questions at the end of this activity:
    1) Why do **you** think empathy is important in teaching?
    2) What challenges may arise when trying to incorporate empathy in teaching?

My lessons learned: Starting with something small is the key to keeping faculty wanting to keep evolving after the workshop. The purpose of this activity is to prepare the participants to be able to make small, actionable changes right away, share them aloud with others, and allow other participants to provide feedback during the workshop. The reflection prompt can allow them to keep reflecting on their connection to students through teaching and envision potential challenges to incorporate empathy in teaching. For example, there is a potentially increased workload due to flexible office hours. This also re-addresses the importance of setting personal boundaries and being aware of the self's comfort level when teaching with empathy to avoid "empathy fatigue." This final activity can well-equip the faculty participants to anticipate the challenges while still encouraging them to become an "empathy" agent in their own teaching journey.

3. Conclusion

The main workshop design message is to advocate for faculty to teach with empathy by seeing their students as whole people and understanding the benefits of incorporating empathy in classrooms. Those benefits include nurturing positive faculty-student relationships [6], [7], creating an inclusive environment to inspire students to stay in engineering and become engineers, and changing the engineering culture to become equity-focused in our society. The workshop activities also acknowledge the importance of setting boundaries for faculty themselves as whole people to recognize the challenges of teaching and complicated scenarios to teach with empathy. The workshop also provides practical equity-focused teaching strategies, self-reflection, and peer discussions as the starting point for incorporating empathy into instruction. Ultimately, this workshop intends to inspire faculty to the idea that teaching with

empathy can be a pathway to more equitable approaches to education and encourage faculty to continue practicing and applying empathy in their teaching.

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