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Empathy In Engineering And Ethics Education: Resources To Support The Engineering Education Global Community

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EMPATHY IN ENGINEERING AND ETHICS EDUCATION: RESOURCES TO SUPPORT THE ENGINEERING EDUCATION GLOBAL COMMUNITY

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MOTIVATION

There is no question of the importance in the education of engineering students developing ethical decision-making abilities of future leaders and innovators. Literature suggests that when learners see how ethics and empathy together play role in guiding their actions, students tolerate ambiguity and are less influenced by their peers, for example, looking at problems from different perspectives (Krznaric 2014; Feshbach and Feshbach 2011). Recently, empathy gained growing attention

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in engineering education, being related to prosocial behavior, and psychological safety in teamwork and the classroom. Empathy, simply said, is a human quality to "put oneself in another's shoes," feeling what they are feeling with the understanding that their emotions may not be one's own. While engineering educators have established instructional methods to teach engineering ethics, how to develop and enhance empathy competency is still challenging.

This workshop introduced practices in education that support the development and enhancement of empathy in engineering students.

During the workshop we discussed the relevance of empathy for engineering education; criteria for empathy projects/assignments and an empathic teaching framework were presented. Together we ran through empathic pedagogies of inclusion and engagement while exploring teaching empathetically within content-specific environments. Participants left the workshop with steps to design assignments that can activate student empathy in design-thinking and demonstrate inclusive teaching practices, including learning empathic techniques, resources, and tools that could benefit the Engineering Education global community in building students' empathic capacity.

BACKGROUND AND RATIONALE

Empathy is the human quality of understanding or feeling what another person is experiencing from the other person's perspective. To exercise empathy means to understand the motives, needs and points of view of others, thus, empathy is considered an important factor of moral behavior, and an essential component in forming moral communities (Ehrlich and Ornstein 2012). According to the European Educational Policy report (European Educational Policy Network 2020), both empathy and ethics are based on an understanding of the following four attributes: values (human dignity and human rights), attitudes (sense of responsibility and respect), skills (listening, observing, and cooperation), and knowledge and critical understanding of self. Having these four attributes, the report suggests, a person can perceive multiple perspectives and engage with people from diverse backgrounds. These attributes are perceived as essential active citizenship skills for teaching and learning in the digital age (Council of Europe 2019). Further, research suggests that empathy education can produce citizens who care about community issues such as poverty, war, and climate change (Krznaric 2014). In fact, empathy training could help the world come together to address significant issues such as "climate change, poverty, escalating violence, international conflicts, [or] illness" (Ehrlich and Ornstein 2012, p.15).

Caring for a fairer, more resilient future, it is our obligation to prepare students with the skills and human qualities that will foster good global citizenship. As educators, one of our jobs is to help students learn empathy as they also learn from current events and history about wider definitions of diversity, equity, and inclusion. In the engineering classroom, when we create and foster learning experiences, such as the practice of empathy, we support a broad set of important learning objectives that are not easily addressed in a traditional engineering curriculum (Bairaktarova 2022).

WORKSHOP DESIGN

In the workshop, participants were introduced to the "The Human Face" activity[2]. This activity promotes perspective-taking, creative writing and artistic expression. In this activity, participants work in groups on specific situations (scenarios related to current global issues, e.g., the 2023 Earthquake in Turkey).

Participants were instructed to start by analysing the scenario individually:

- read the scenario on the sheet and put a human face on the issue;
- imagine a person living in those circumstances and describe that person's experience;
- imagine what the person looks like, give them a name, and imagine as much detail as you can concerning the conditions in which they are living.

Following this initial engagement with the scenario, participants discussed the following questions in their small groups:

- Did you feel empathy for the person you imagined?
- is putting an individual human face on global issues important to activating empathy for large groups
- what impact can individual stories have in promoting an active response or social action?

RESULTS OF THE WORKSHOP

This workshop introduced creative ways of teaching empathy through empathic techniques and design thinking philosophy in an engineering content-specific learning environment. The relevance of empathy for engineering education was discussed; Participants were encouraged to think about learning activities that reward risk-taking and vulnerability; develop and enhance students' empathic ability; and ensure student success in designing human-centered projects. These types of interactive activities and dynamic discussions draw on the latest theories on empathy and design thinking (Kouprie and Visser 2009) related to education. They help inform and shape techniques and strategies needed to successfully teach students to become adept with diverse peoples and ideas, to collaborate, and to contribute more and better ideas through listening, observation, and cooperation.

Participants left the workshop with resources on how to design assignments that will activate student empathy in decision-making and design-thinking. Participants were invited to join the "Caring for the Future: Emapthy in Engineering Education" project and get access to the project resources, including participating in the monthly global webinars.

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[2] https://worldslargestlesson.globalgoals.org/resource/the-human-face-of-food-investigations-in-social-science/

Empowering engineering learners by including empathy in the engineering curriculum can help to produce altruistic, more compassionate citizens who can direct their energies toward problem-solving that improves society.

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