

We Are Thriving: Increasing the Number of Women in Engineering

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Abstract : An on-going focus in engineering education research is on increasing the number of women in engineering. While the number of women participating in engineering project teams has increased over the past five years, the number of women enrolled in engineering colleges remains stagnant. Previous studies have explored why the number of women enrolled in engineering colleges remains small. In doing so, researchers focused primarily on negative experiences women encountered. Instead of looking at negative experiences, which can further deter women from entering the field, the aim of this study is to explore the personal and institutional factors that allow women to succeed and thrive in undergraduate engineering programs. There are two research questions addressed in this paper. The first is: what are the personal traits and characteristics that allow women to thrive in engineering? The other is: what are the institutional policies and culture, as well as micro-level behaviors on project teams, that influence the environment for women to thrive in engineering? Two women studying engineering at an R1 university were interviewed. Each woman was interviewed three times for a total of six interviews. The phenomenographic interviews focused on the lived experiences of the participants to better understand thriving in engineering. The first interview focused on the women's personal life and background, the second on their learning journey and project team experiences, and the third focused on videos the women took through a method called Photovoice. Interviews were transcribed, and an inductive thematic analysis was conducted. Four themes were identified. Multiple coders were utilized to ensure trustworthiness and increase interrater reliability. Results indicate that thriving women have supportive families, experienced gender biases, and enjoy hands-on engineering and creating a final product. These traits and experiences may help inspire younger women to pursue engineering degrees and can help inform institutions as they make policy changes to support women. Additional women will be recruited from four different universities to further develop a theoretical framework to help inform institutions in how they can support women to thrive in engineering.

Keywords : diversity, inclusion, project teams, women in engineering

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