

UNSEEN DIFFERENCES

Students' complex individual identities require engineering educators to enter unfamiliar territory.

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Teaching a diverse student body means being attuned to much more than just gender, race, and ethnicity. An individual's identity is multifaceted, dynamic, and contextual. Identity includes variables such as sex, gender, race and ethnicity, socioeconomic status, sexual identity, age, relationship status, parental status, and status as a veteran or a person with a disability. Depending on the context, a person may be seen as a woman one moment, a Latina the next, and a socioeconomically advantaged, able-bodied mechanical engineer sometime after that. When engineering educators fail to recognize this complexity, we neglect to acknowledge the individual and dynamic needs of the student. The barriers encountered by an African-American female student, for example, are not merely some combination of barriers faced by a white woman and an African-American man. This student will have facets to her identity that an observer can't see, but that will likely make her college experience different even from that of other African-American female engineering students.

The interplay of race, class, and gender can result not only in different experiences but also in added disadvantages. We have used an intersectionality framework to study experiences within single racial and ethnic groups. Examining the ways American Indian and Latino engineering students used co-ethnic student organizations for support, we discovered intra-group oppressions based on interacting facets of identity. Some American Indian students found their Native identity being challenged because they didn't share the appearance, behavior, and cultural knowledge of their peers. Likewise, Latino students who lacked fluency in Spanish were often marginalized.

We found that the concurrent intersections of race, ethnicity, and gender with other dimensions of diversity such as rural or urban high school and parental collegiate experience influenced differences in

the students' motivation for seeking transfer credit, as well as the type of credit selected and the benefits received.

Barriers imposed by race and gender can be amplified by lack of money and a failure to understand the informal rules of college culture. Take the example of Inez, an engineering student from a socially and economically disadvantaged, multiminority background. She had to work long hours to make ends meet. Her job conflicted with faculty office hours, leaving her with little academic support and contributing to a low GPA. Inez did not apply for internships or co-ops because she mistakenly thought the college required her to maintain a 3.0 GPA. These elements together left her approaching graduation with a low GPA, no internship experience, and low professional aspirations.

As engineering educators, we need to recognize that intersections of race, class, gender, and other variables will cause students to struggle in different ways against the inherent barriers in engineering education. How do we meet their diverse needs? Faculty could attend local and national training and awareness programs that are provided by student support or diversity offices on their campus, such as LGBTQI ally, disability accommodation, and veteran advocacy training. At the ASEE Annual Conference, attendees can engage with Women in Engineering and Minorities in Engineering divisions in discussions about cultural differences and empowering student success. There are also webinars by organizations such as WEPAN and STEM Central.

Improved understanding must be matched by action on campus and in the classroom. Faculty members can, for instance, find ways to provide academic support, including office hours, at times and in formats that let all students participate. They can communicate clearly both the formal rules projected in the syllabus AND the unspoken rules that guide collegiate and professional expectations (e.g., internship/co-op eligibility and using transfer

credit as a completion strategy). And they can recognize and rectify peer-to-peer discriminatory behaviors both in the classroom and in student organizations.

It's not enough for us to admit that our engineering education culture was constructed by and for the privileged majority. We also need to grasp the complexity of the less privileged minority and the varied ways these students will be affected by the barriers our culture imposes.

Promoted by the ASEE Diversity Committee, the Year of Action is an open invitation to all ASEE members and constituents to engage in activities that lead our profession toward the creative strength, new ideas, and innovation that come with diversity. Let us know of your plans and actions by emailing diversity@asee.org. Please watch our website (<http://diversity.asee.org>) for updates.

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