Engineering Education Alumna Leads New Research into Stereotype Threat

Published in Creating Tomorrow – Oct 15, 2016 – Stacie Gregory was always a good student. Math and science came easy to the Indianapolis, Ind., native who went on to earn an undergraduate degree in physics from Spelman College and a master’s in material science and engineering from Georgia Institute of Technology.

She even kept up with a strenuous workload as a PhD student at North Carolina State University in the late 1990s. But despite meeting academic goals, Gregory felt a growing burden that held her back and ultimately led her to drop out of the program. What happened? She asked herself in the years that followed.
Fast-forward to 2013. Gregory is back in school, finishing a doctorate degree at USU – this time in engineering education – an emerging field that experts say is crucial to the success of would-be engineers. It was personal experience that led Gregory to choose this emphasis and her main research topic: understanding stereotype threat – a psycho-social phenomenon that can derail even the most promising student.

The term ‘stereotype threat’ first appeared in 1994 when researchers described how a student’s academic performance can be adversely affected simply by knowing that their behavior might confirm a racial stereotype. Gregory says this subconscious preoccupation with one’s demeanor can affect a person’s cognitive abilities in the classroom, regardless of socio-economic status or academic talent.

"Stereotype threat means that a person is worried about confirming a negative stereotype about his or her social group to their peers," said Gregory. “Over time, these experiences can take a toll on you. There have been hundreds of studies that confirm stereotype threat is real.”

As part of her dissertation research, Gregory set out to understand why, in some instances, African American students have been shown to underperform in school when compared to their white peers. She interviewed black women across the country who were pursuing engineering degrees and learned that many of them had the same experiences she did in college.
“They discussed being the only female or only black person in their engineering classes,” said Gregory. “And they talked about all the experiences that come along with being the only one – like being the last person chosen as a team member, feelings of isolation and all the emotion that comes from being someone different.”

The conversations helped Gregory reflect on her own past and come to terms with the decision to leave her PhD program.

“I was the only African American in my class,” she recalled. “And in my concentration, I was the only female. I felt like I was always in a setting where it was just me. I literally felt like I didn’t belong there. There was always a feeling like I wasn’t enough.”

She remembers the day she decided to leave. No one seemed to notice. No one said goodbye, confirming her feelings of isolation.

“I was performing well but something wasn’t right, and over time the stress caused me to quit. I never understood what was going on until I learned about stereotype threat.”

Gregory’s research will help engineering educators improve undergraduate curricula. (Photo: Tina Krohn)

Gregory began studying engineering education at USU in the spring of 2013, with a focus on unraveling the causes of stereotype threat. Some of her findings have already led to improvements in engineering classrooms. She published portions of her dissertation and is now a research fellow at the American Association of University Women in Washington, D.C. where she helps improve education policy. She also started her own organization called Engineers for Equality that
helps educators and researchers understand the perspectives of students from underrepresented minorities and those with physical or developmental disabilities.

Her research has helped reveal simple steps educators can take to eliminate stereotype threat in the classroom:

1: Make students feel cared for. Simple things like knowing students’ names can make a big difference.

2: Don’t let students choose their teammates for group projects. “Oftentimes professors think it’s good to let students choose their own teams. But if you’re the last to be picked, that can ignite stereotype threat,” said Gregory.

3: Don’t single out women or underrepresented minority students in a classroom discussion simply to highlight that they can offer a different perspective. “That’s actually the worst thing you can do,” said but it usually makes them feel uncomfortable.”

Looking back on her experiences, Gregory says finishing her degree fulfilled two important aspects of her life: finishing what we start and making a difference for a future generation of engineers.

“I’ve always been a person who loves academics, I love learning,” she said. “But I had this sense of incompleteness. When I became a mother, I didn’t want my son to know me as a quitter. I wanted to be an example of someone who never gives up.”

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