Characterizing the Experiences of Practitioners who Return to Engineering Graduate School

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Abstract
Our research is aimed at developing a better understanding of the perspectives and engineering graduate school experiences of returners, students with engineering undergraduate degrees who work outside of academia for at least five years and come back to the academic setting to earn their PhDs, as well as direct-pathway students. This work is informed by our pilot study of 10 returners which identified Eccles Expectancy Value Theory as an appropriate model of the decision to return to school. The first phase of the study is a national survey of over 400 engineering PhD students.

Pilot Study
- 10 interviews with STEM returners
- Interviews were analyzed inductively and deductively
- Fit Eccles’ Expectancy Value Theory: people make decisions based on the expected results of their choices, the costs of each choice, and personal values and interests, proved to be a good model to explain these students’ decision to return.

Research Goals
- What are the characteristics of those who return to graduate school after work experience compare to direct pathway students? Why do they return?
- What is the returning experience like?
- How does the intersection of prior engineering experience and academia shape the topics of research work and their connectedness to the "real-world?"
- How do stakeholders view the returning experience and impact returners?

Survey Goals and Content
- How do students’ perceptions of graduate school compare?
- What influences students’ confidence in their ability to succeed in their PhD?
- What motivates students to enroll in an engineering PhD program?
- What aspects of earning a PhD do students most value?
- What costs do students experience during graduate school?
- What strategies do students use to reduce these costs?
- What do students plan to do after completing a PhD?

Survey Section Topics
- Demographic Information
- Academic Background Information
- Current Academic Information
- Pre-PhD Activities/Career
- Decision to attend graduate school
- Expectancy of Success in Graduate School
- Values of the PhD
- Costs of the PhD
- Cost Reducers
- Advisor Relationship
- Post-PhD Plans

Next Steps
Work Experiences
Academic Work

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