For engineers, the opportunity to continue to learn in their chosen field helps them not only to maintain skills, but also to learn new ones to advance their careers. Lifelong learning in general, and for engineers in particular, is critical to continued improvement. One way to foster growth in the professional arena is to obtain an advanced degree and is encouraged by professional societies, as well as many employers. In fact, the notion that a master’s degree is the outward benchmark of the professional engineer is not new. However, the ways in which graduate students in engineering make sense of what they learn in the classroom may be influenced by the work experiences they have had prior to their graduate studies. We make the distinction between direct-pathway students, those who for whatever reason continue their studies directly after a bachelor’s degree is achieved, and those we call “returners,” who have been working in the field for a number of years before deciding to return for a master’s degree.

Master’s students who have worked in their field see engineering differently based on their real-world experiences. They may be more focused compared to traditional students because of a number of factors. The combination of focus and engineering practice skills in an academic setting raises the potential for greater contributions by these students. So far, this population has not been studied in depth. These learners are the focus of our research.

Our research consists of Three phases: Phase One will outline characteristics of returning students in engineering master’s degree programs, including the types of skills they have developed in previous experiences and how they use those skills in their master’s degree program. Phase Two will investigate the state of returners’ knowledge base after an absence from the educational setting, and investigate the ways in which both returners and direct-pathway students construct knowledge in the classroom. Phase Three will focus on a dissemination of the research results to the academic community and other stakeholders. We hope to gain a better understanding of returners’ choices in their master’s degree program, a better understanding of how time away from school and work experiences relate to knowledge that returners retain and forget, and how these experiences affect the way that new knowledge is acquired.