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Cooperative Education Work Assignments: The Role of Organizational and Individual Factors in Enhancing ABET, Competencies and Co-op Workplace Well-Being

Past research on engineering students has shown a positive impact of cooperative education on earnings and grade point average, but (that) it takes somewhat longer to finish the degree. However, the environment of engineering education has changed over the past decade. There are now broader learning objectives for engineering students. These objectives now encompass non-technical skills such as ethics, teamwork, and so on; and engineering education is undergoing significant change. We were interested in how the actual workplace experience unfolds and contributes to successful learning outcomes and work-related well-being for engineering co-op students. There are two important outcome domains of interest here. First, we are interested in the general outcomes of co-op satisfaction and fit with their employer (or well-being). Second, we are interested in the domain of professional development that relates to learning outcomes. The basic research question was

What role do organizational socialization practices and individual motivational traits play in the accomplishment of professional learning outcomes, job satisfaction, and person-organization fit?

The theoretical background we used was heavily influenced by organizational behavior research on socialization and psychological research on individual motivational traits.

It has long been understood that organizations show significant variation in how they socialize newcomers or how they go about transmitting attitudes, behavior, and knowledge needed to be a valuable member of the organization. These socialization tactics have been shown to affect newcomer adjustment as well as performance. More recently there has been an interest in how individual differences interact with socialization tactics in their influence on adjustment. We chose two primary dimensions of motivational traits that we thought would be relevant to the work setting for new engineering co-ops. These were traits towards more or less desire to master new skills (personal mastery) and more or less on-going anxiety or worry in achievement situations. We believed that these traits affect one's confidence and, in turn, influence adjustment because those who are confident are more likely to engage in self-managing behavior. Newcomer anxiety may also affect employee attempts to adjust. Anxious individuals may have greater motivation to seek out others for reassurance but be afraid of the outcome.

We designed a three wave survey study of first term engineering cooperative students. Our goal was to study the process of socialization and adaptation as it occurred and provide some key findings back to the cooperative educational community. All new co-op work assignees were given the opportunity to participate during a pre-employment or early employment notification. Subsequent surveys were delivered via e-mail to the student's University e-mail address.

Our final sample was 91 engineering co-op students for whom we had all three waves of data. Our results suggest that students, on average, indicate at least modest contributions of the cooperative work assignment to all of the learning outcomes, though there are some differences among the outcomes. However, we also found that individual characteristics of students make a difference in what they claim to end up gaining from the cooperative education experience. Those whose primary motivational orientation is one of personal mastery tend to believe they take away more of the core engineering competency. Beyond that particular finding, there seems to be little in the motivational profile that explains achievement of co-op students' learning outcomes. On the other hand, the early socialization experiences the students report also make reliable contributions to the learning outcomes. Specifically, both the social aspects of socialization and the socialization content affects the non-technical competency learning reported. Recall that these sets of socialization experiences concern the support and role-modeling provided during early employment as well as the structure of the cooperative work experience. Co-op students reporting high levels of these factors have received support, positive feedback, timetables, and sequencing of employment assignments.

Finally, in terms of practice, it is clear that hiring organizations are important in establishing procedures to help a better fit among new employees. Early socialization tactics primarily influence the perceived acquisition of the non-technical competencies such as leadership, teamwork, and professional ethics. Finally, there is an important role for career counselors in coaching new organizational entrants on these behaviors.

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