

Transitions Between Cooperative Educational Experiences to the University

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Abstract—Cooperative education programs (co-ops) are partnerships between industries and universities that allow students to gain real, hands-on experience in their field. The benefits of co-ops have been explored thoroughly in relation to both students and employers, as well as universities seeking to establish more connections with industry. Participants in co-ops often have higher starting salaries and a higher level of job satisfaction, because they have experienced the work and have accurate expectations for full-time employment. Employers also benefit from the co-op system, with both inexpensive labor and the opportunity to invest in qualified new employees. In addition to the career benefits and job satisfaction resulting from co-ops, participants in co-ops often reflect higher GPAs than their non-participant peers. However, in a study examining the transition from co-ops to full-time employment, though it was not specifically asked of them, thirty percent of students reported that the transition from their co-op back to their university hindered their academic motivation. The researchers also found similar experiences reported by students at another university and thought this consideration was worthy of further investigation.

This study interviewed four students' experiences about the transition from their co-op experience to their full time enrollment at their university and how this transition impacted them. Students enrolled in engineering degree programs at University of Louisville are required to complete three co-ops before graduation. This lends to a unique situation where all students go on co-op, hence the interest in how co-ops affect the transition back to the university after co-op. The interviews lasted between 15-30 minutes in a structured format. The students volunteered from a survey asking about difficulties coming back to the university from co-op. All of these students, except one, reported having a difficult time with that transition. They reported the difficulties of getting back into the rhythm of a full course load, where they have many tasks to manage every day compared to a job, where they only have a couple tasks to focus on and complete every day. One of the four students reported that they utilized the institutional student support system to help them with their transition. These findings show that for some students, the transition is difficult, and there may be institutional support that could be provided to help them.

Keywords—cooperative education; co-op; transitions; adjustment period; qualitative interviews

I. INTRODUCTION

This work-in-progress paper describes students' transitions from an engineering co-op experience back to the university. Cooperative educational experiences (co-op) have been shown to help students understand what they would do as a full-time engineer in their specific major, give them real world experience, and help them acquire full-time employment after graduation. Many people would probably assume that students would be excited to come back to classes and enjoy the college life, but students are reporting that they have a lot less free time at school then out on co-op. This work is a representation of four interviews with students that reported having a somewhat difficult to difficult time transitioning back to the university after being out on co-op during the summer of 2016. The students were asked about their schedules, workloads, hours of working, coping skills, and resources that they experienced after coming back to campus. This research helps faculty and staff who work with students that complete co-ops better understand some of the issues they may encounter after coming back to the university.

II. COOPERATIVE EDUCATIONAL PROGRAMS

Cooperative education programs started at the University of Cincinnati in 1906 [1]. Co-op programs continue to be used today for students to gain valuable experience within industry before they graduate. Higher education programs can be known for not connecting learning to real-world problems, and co-op programs are one way that universities can deflate those allegations, thus requiring students to do a co-op before graduation exposes them to real-world problems and work experience.

Another aspect of co-op programs is that it helps students understand the difference between academic success and career success, and that one does not determine the other [2].

There are many benefits of co-op programs. The quality of an undergraduate's overall education is higher when they go on co-op [3-6]. A longitudinal study on co-op programs shows that students who went on co-op have a higher grade point average at graduation than students who did not complete co-op [5]. This same study also shows that students that go on co-op do take longer to graduate [5].

Another research study shows that co-op requirements increased student's decision to enroll at that university, where 98% of students' report that the required co-op was important to very important in their decision to attend that university [7].

Some researchers tracked students after graduation and were able to determine that students who go on co-op are more likely to receive higher salaries, high level positions, and get promoted at a quicker rate than students who did not go on co-op [8].

There was one study that investigated students' transitions from co-op to full-time employment, where 30% of students reported having a difficult time transitioning from their co-op back to the university [9]. The students said the difficult transition caused a lack of academic motivation. The researchers were not studying this aspect of transition but noted it within their research paper as something to be investigated.

Transitions have been studied for students going from high school to college. Tinto argued that students are more likely to persist in college after they successfully separate from their home context to be socially and academically integrated at a university [10]. This transition of separation from home to college is debated with racial and ethnic groups [11], but negotiating some transition between home and college is widely acknowledged [12-13].

Astin proposed a theory of student involvement through which to assess issues relevant to students' transition to college. This researcher investigated successful and unsuccessful student transitions to college and reports that successful transitions were enhanced by various types of college involvements: on campus living, participation in social fraternities and sororities, working part-time on campus, and generally making connections with one's new environment [14]. Research shows that first-generation college students can have a more difficult time transitioning to college and do not feel connected to their institutions [15-16]. It was shown that first-generation college students tended to delay joining social groups and activities during the initial transition period [16]. Successful transitions consisted of on-campus peer relationships, study groups, connections with faculty and other academic support services [14-16].

The transition to college is difficult for most students, and it is common for campuses to offer first year transition programs to assist students in the adjustment process [13, 17]. Currently, there are no transition programs to assist students in the adjustment process after being out on co-op, but there are programs to help students that are transitioning to college for the first time [18].

III. METHODS

This research explores students' experiences with coming back to the university from cooperative educational experiences through examining their responses from interviews. The data was collected at a large research institution in mid-western United States where the students are required to do three co-ops before graduation. Because of the co-op requirement, the college has adopted a three semester academic year to help students graduate within four years.

Previously, the research team had sent out a survey to all the students that had completed a co-op during the summer 2016 [19]. These students had a question on the survey of an option to volunteer to be interviewed. There were 28 students that volunteered, but only 8 of those reported having a difficult or somewhat difficult time coming back to campus after their co-op. There are 4 interview responses included in this paper. Two of the students were mechanical engineering majors, one was chemical engineering, and the other was electrical engineering. Three of the students were in their senior year and one was a junior. Every student interviewed had been on at least two co-ops, and the majority of the interviewees had been on three co-ops. Interviews were conducted by one of the co-authors, and lasted about 10 to 20 minutes. All interviewees were asked the same questions in a quiet office setting. The interviews were recorded with students' agreement, per the approved IRB protocol. The interview responses were transcribed by one of the co-authors. The transcriptions were read by all three co-authors, and major themes were identified after reading through the transcriptions multiple times. A thematic analysis was conducted by the student author with the guidance of the advisor.

IV. RESULTS AND DISCUSSION

One of the main findings from the survey work was that 25 percent of students are reporting having a difficult or somewhat difficult time adjusting back to the university setting [19]. The interviews were conducted to gain a better understanding of why students were having a difficult time coming back to campus.

A. Schedules

Three of the four interviewees made comments about a change in their 'schedule' that was a major reason for the difficulty. One student talked about their schedule in terms of sleep habits when coming back to the University after co-op: "My first semester, it was really difficult because getting into a routine, umn, I had a sleep schedule routine down, and everything, and then school always messes with that, due to exams, or homework, so, it wasn't very easy the first time because of that." (SU3-16)

Later in the interview, the same student again talked about their sleep schedule and school routine, referring to the contrast with full-time work while out on co-op: "The sleep thing. Umn, you know, with the steady hours you know that you will always have to get up at a set time and you will always have to be home at a set time. And then also with the amount of work, I spend a lot more time actually working on school instead of having as much free time as I had in the past." (S3).

Discussing schedules, another student talked about a major difference in their free time while out on co-op vs. at school: "You get off at 5 and you don't have to worry about work until the next day at eight, so, but with classes, you go to classes all day then you have homework at night." (S1)

B. Working Hours

The students were asked what their typical work hours were for school and when they were on co-op. All of the students interviewed said that they were expected to work from about 8am-9am to 4:30pm-6pm, with some overtime if the company had extra work. Students talked about school hours being somewhat similar, but homework and projects were done in the evenings and took up a lot of students' free time.

"Uh, eight to five with a hour lunch, sometimes I worked overtime depending on if we were busy, if we were not busy, that kind of thing." (S1) and "Eight to four-thirty, what we were supposed to do, but I usually worked overtime." (S3)

The interviewer asked students if their co-op work schedule was significantly different from their school hours, and the responses were: "Uh, no. I mean during the day, halfway during the day, eat lunch and then, you know, go to about five. So, at least for classes, doing homework and all that, you do like, an all day, every-day kind of deal. So, a little different." (S1) and another student said, "Umn, they were longer for working, but I spent much more time in school than that." (S3)

The students' difficulty with the transition back to campus did not have as much to do with an actual change in working and sleeping schedule as to do with how much time they spend on coursework compared to time spent at work on co-op. The students report having significantly reduced free time when they are back on campus compared to when they are on co-op.

C. Workloads

The next major part of the interview was to talk about any difficulties they had within their transition back to the University setting. One student discussed the differences in their workload between co-op and school. The interviewee did not complain about the amount of work, but of how many different assignments they could have at once: "Mostly the rearranging of your schedule. Because at work, you usually have one or two main things that you focus on, and in school, you have however many classes and however many assignments. So I know it's more realistic in work to have many things going on, but for co-op, I only had a few major things going on instead of thirty" (S3)

This statement shows that this student had difficulty with the amount of different tasks that needed to be done (normal university setting) rather than a couple tasks (normal co-op setting). This could be a potentially different skillset that students are learning while at the university (maintaining multiple different tasks at once) rather than building the skillset they need as an engineer (focus on a couple tasks with more responsibility).

D. Type of Work

Some students gave thoughtful answers explaining why they felt their co-op was more meaningful than what they were learning at the university. One student talks about the differences in satisfaction between the different kinds of work:

"You're helping the company improve, you're always engaged working on a project, and in the end of a class it's like "yay here's your grade" but at the end of a project, you can go out to the shop, or into the field, and see what you did. Do something, you know?" (S1)

Another student, when asked about their transition back to classes at the university, discusses the difficulty staying focused in their classes, as the responsibilities they managed in their co-op became more and more like those of a full-time engineer: "I felt like it [transitioning back to classes after co-op] was more difficult this time. Each co-op that I've been on has been more like assuming the responsibilities of a full-time engineer. Except less motivated in some of my classes that I felt weren't as important to a career" (S2)

When asked to elaborate further on what made it difficult, they said: "just a lack of motivation in some of the classes that are just required to take and I feel like aren't as important or just completing general education requirements" (S2)

Another student discussed what has helped their transition back to the university, saying their prior experience working full-time while in school. They also talked about difficulties with having to acquire a different mindset in coming back to classes, as well as the rhythm of studying for exams: "Well for me, it wasn't really too different, because I've always worked full time while being in school, so I'm pretty much used to having to work and everything, so, it really wasn't that much of a transition, as far as working or not working, because I continually worked. But umn, the mindset of having to sit down and learn and do school work kind of took a little bit, after a couple of weeks, you kinda get in the rhythm of having to study, by my first exam, its usually not too good, I gotta get back into my study habits" (S4)

E. Coping Skills and Resources

The last portion of the interview was to discuss the coping skills and school resources that the students used. There were several unique ways that the students discussed coping with the stresses coming back to the university. One student talked about physical tools that assisted with managing their time: "I used a planner, and then a notebook along with that to write down my thoughts, then I used excel for my schedules, and google calendar saves my life." (S3)

Another student discussed learning helpful habits on their co-op and using it back in the university setting: "I know when I was on co-op, I used a calendar a lot of the time to plan out the assignments that I had, we a lot of due dates there. So, I got in a habit of using a calendar all the time for the work we had to do. Like this is due, a meeting, a deadline, and all that kind of stuff. Doing that kind of thing helped me be better organized coming back to classes" (S4)

One student talked about a school resource that they used to help transition back to the university. This is the only student interviewed that mentioned using a service or resource provided by the University: “I do visit the counseling office, but in order to help me differentiate a school mindset from a work mindset, and then I rely on my friends a lot with that” (S3). Another student talked about their coping skills as healthy habits: “I guess making healthy choices and not procrastinating as much as time went on” (S2)

When prompted about the coping skills used coming back from their co-op, another student discussed their prior experience with balancing a busy schedule, and how it has helped them with this transition: “This is something I’ve always been good at, I’m very good at managing stress, I don’t stress much. But, because I’ve always worked for a long time since I was in high school, I’ve worked full time. For me, it’s not letting yourself kind of get overwhelmed. I just think things through before they happen in terms of like ‘okay this is what I’m going to do today’ you plan out your week, and you plan out how I’m going to do my homework, and I’m going to study and all that stuff, and that prevents you from getting overwhelmed, and I have so much to do and a lot of people I know, you kind of lose that. You don’t have to do that when you go to co-op, you don’t have to worry about that. Me staying busy all the time, I’m pretty good at that” (S4)

V. CONCLUSIONS

The interviews with students about their transition to campus from being out on co-op was helpful in understanding how it affects them. Some students reported decreasing motivation to be at school and attend classes that they do not think will help them be better engineers. Interestingly, this work has highlighted that engineering school demands a lot more of a students’ time than an engineering co-op. Students describe their day differently from when they are in school versus when they are on co-op. It’s not just a change in schedule, but it seems that students require a mindset adjustment to get through engineering degree programs, that is different from when they are out on an engineering co-op.

Students do not appear to be using a lot of the university resources for re-adjustment, but some are using counseling services. This speaks to how much it can affect students that are transitioning from co-op to the university.

Faculty and staff should be aware that at least a quarter of students do have difficulty transitioning from co-op to the university and that it can take between two weeks to six weeks for the students to feel re-adjusted to the university setting.

Recommendations from the co-op associate director include letting students know before they leave on co-op that they may experience transitional issues, reaching out to students a few weeks before they come back to campus to prepare them, talking to students when they come back from

co-op, letting them know that it is common for students to have transition issues and to let them know about counseling. Many students said that they felt better when hanging out with friends that had also been on co-op at the same time and the co-op office encourages students to build relationships with their cohort to help alleviate some of these issues. The research team plans on testing potential solutions to find out what will work best to help students transitioning from co-op to the institution.

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