

**AC 2009-1422: EASING THE TRANSITION FROM THE COMMUNITY COLLEGE
TO THE FOUR-YEAR UNIVERSITY**

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Easing the Transition from the Community College to the Four-Year University

Abstract

Without special support programs to help them out, community college students transferring to four-year universities have some clear disadvantages upon arrival at the four-year university. Compared to their classmates that have already been at the university for two years, they don't know the faculty, they may not know any other students, they don't know where to go for help, and the courses they took as pre-requisites for their upper division work, although articulated, generally are not perfect matches for the ones taken by their “native” classmates.

We present data that supports the hypothesis that indeed these transfer students do not fare as well with regard to retention in the intended major and time to graduation. We also describe our Engineering Transfer Transition Program, a one-week residential summer program for new transfer students, and provide some preliminary data that indicates this program is helping ease the transition for the students that participate.

Introduction

Community college students that transfer to four-year institutions face many challenges both academic and non-academic⁹. One widely studied impact of these challenges is transfer shock, a dip in the GPAs of transfer students during the first one or two terms after transfer⁶. Although believed to be nearly universal, transfer shock is generally not severe¹⁰ and Cantrell et al.¹ have theorized that pre-transfer support programs are one technique that can be used to help transfer students get through their transfer shock and “experience the rewards of their efforts.”

We were interested in comparing how well our transfer students were doing in comparison with their native classmates. One measure of success is how long a student takes to graduate and do they ever graduate. The most commonly used metric for graduation and retention rates is the “6-year” graduation rate or 150% of the normal time to degree⁷. By that time nearly all students will have graduated or left the university. An anonymous reviewer noted that if you apply the 150% rule to the time transfer students are expected to spend at the four-year institution then the equivalent metric for junior transfer students would be three years from the time of transfer. Because we wanted to compare junior transfer students with their native junior classmates, we felt it appropriate to give both groups four years from the start of the junior year (the 6-year rule for natives). We realize that some natives will take more than two years to achieve junior standing, thus having less than four years to complete starting from their junior year. Other students, entering the university with advanced placement credits, may take less than two years to become juniors. At the same time, junior transfer students often will have spent more than two years prior to transfer. Nevertheless, we believe it is informative to compare the 6-year graduation rates for our native students with the 4-year (at UCSC) graduation rates of our junior transfers.

The latest data that has been compiled at our university is for the five freshmen cohorts that started in the years 1997-2001; the last of these must have graduated by spring 2007. The comparable years for transfer students are for students who transferred in 1999-2003. Table 1 below shows the percentage of our engineering students who graduated in the major they had declared at the beginning of their junior year, the percentage that graduated in a different major, and the percentage that did not graduate. As the table shows, for graduation in their junior year major, there is a gap of 25 percentage points between students who enrolled as freshmen and those that enrolled as junior transfers (essentially all of our transfers arrive as juniors). Likewise the gap is 18.8 percentage points in overall graduation rates in any major. These numbers are neither surprising nor exceptional. Laanan states that junior transfer “students will most likely encounter greater difficulty than native students and can expect to take longer to graduate.”⁹ These data demonstrate why it is important to provide effective transition programs for our transfer students.

	Enrolled as freshman	Enrolled as junior transfer
Graduated in junior year major	68.9%	43.9%
Graduated in other major	20.5%	26.7%
Did not graduate in 6/4 yrs	10.6%	29.4%

Table 1: 6-year graduation rates for engineering majors (4 years from time of transfer).

From 2003-2006 we supported a summer “bridge” program for new engineering students. The program included both freshman and transfers in a combined program. These were mostly underrepresented students with most of the funding coming from the California Alliance for Minority Participation in Science and Engineering (CAMP). During that period 81 freshmen and 22 transfer students attended the program.

We looked at the same graduation rate data for the transfer students in this program as that shown for all engineering majors shown in Table 1. Only 17 of the 22 transfer students are included because the remaining 5 are from the 2006 summer program and they have not yet reached the 6/4 year limit. Of those 17

- 11 (65%) graduated in their declared major within 4 years of transfer which compares favorably with the 68.9% shown in Table 1 for non-transfer students,
- 3 (18%) graduated in a different major (two switched to other engineering majors and one to math), and
- 3 (18%) did not graduate which falls between the 10.6% for non-transfers and the 29.4% for transfer students from Table 1.

This is a much smaller sample and drawn from a different population so caution must be used in making inferences. Nevertheless, the data does suggest that our previous summer bridge program was helping. We believe our new program, tailored specifically for the transfer students, will have an even greater impact and further reduce the gap between transfer and non-transfer students with regard to their graduation rates within their junior year declared major.

Engineering Transfer Transition Program

In 2007 we decided that mixing freshman and junior transfers into the same program was not working well and invited only freshman that year. According to Eggleston⁴ “New student orientation programs should be developed specifically to help transfer students navigate institutional structures and the campus community. There is a strong need for these programs to be exclusive to transfer students.” In 2008, with funding from NSF³ we re-introduced a bridge program for engineering junior transfer students giving them their own agenda that shared just a few activities with the freshman bridge students. The 2008 Engineering Transfer Transition Program (ETTP) was a 7-day residential program. It included typical campus orientation activities, community building activities, and educational activities. The educational activities were led by a senior member of the faculty, and were designed to help the students “hit the ground running.” The program was free and included a \$500 stipend to offset any lost income from missed summer work and to cover transportation costs to UCSC to attend the program.

An invitation to participate in the Engineering Transfer Transition Program was extended to all transfer students that submitted their statement of intent to register in engineering, with preference going to transfer students from community colleges. Due to limited funds we were only able to admit ten participants in this “pilot program.” Students were accepted on a first-come first-served basis.

The primary program staff for ETTP included two student Peer Mentors who are now current seniors who had transferred into the School of Engineering from a community college. Both Peer Mentors also had participated in our 2006 “Summer Bridge” program, our last effort to combine transfer and first-year students in the same program. The School of Engineering Outreach Coordinator/Transfer Advisor served as the program director, building upon the rapport he had already established with some of the students during the outreach season and transfer advising sessions.

The community building components of ETTP were especially important to address because of the structure and nature of our campus. Comprised of several residential colleges, most students entering as frosh live on campus in a small, college environment, taking a common core course during their first term. For the 55 engineering students transferring into the campus—who may or may not live on campus—we wanted to ensure that they would have the opportunity to connect with engineering peers, regardless of their living situation and/or college choice.

The first full day of the program, a Sunday, focused on team building. The activities included a “scavenger hunt” of the campus, a trip to the campus’ Long Marine Lab, a marine mammal research and public education center located in Santa Cruz near the campus, and a sunset picnic. For the scavenger hunt, the students were equipped with only a campus map, course schedule, and general catalog. They explored the beauty of the campus, while learning to identify the physical location of several key offices and resources. This activity was followed by a discussion of team dynamics.

Early in the program, students participated in a transfer student roundtable discussion with a group of senior engineering students who transferred into the school of engineering in fall 2007.

That session received a unanimous top rating from all of the students. In the words of one student, “it was extremely useful to talk to transfer students directly in the school of engineering. Hearing about their experiences and asking direct questions was an awesome opportunity.”

Other community building activities throughout the week included group projects and evening social activities such as trips to downtown and a local amusement park, all with the intended learning outcome of knowing how to navigate the campus shuttle and city/county public transportation systems.

Orientation components of the program, while somewhat traditional in nature, were designed to educate students about the resources available to aid them in academic and personal success while at UCSC and beyond. Toward that end, students attended presentations with professional staff from the Financial Aid Office, the Science & Engineering Library, the Career Center, and the Services for Transfer and Re-Entry Students office. ETTP participants were shown how to navigate the student portal, with specific tips and tools from the Peer Mentors about accessing and updating information on this key campus information network. They were also given tours of four faculty research laboratories led by their program Peer Mentors and other undergraduate student researchers.

The primary goal and intended outcome of the Engineering Transfer Transition Program was to ease the transition of incoming transfer students to facilitate their academic success and persistence to graduate within engineering in a timely manner. We hoped to achieve this largely by connecting ETTP students to faculty, staff, and other transfer engineering students, while also exposing them to the academic demands and opportunities of upper division engineering study.

Laanan⁹ summarizes five studies stating “research suggests that spending quality time with faculty members positively affects a student's level of persistence, satisfaction, and academic performance.” As participants in ETTP, students had the opportunity to interact with senior faculty across many departments in the School of Engineering. A Professor of Computer Science worked with the students to create small programming projects. A Professor of Computer Engineering led a two-session seminar on Technical Writing for Engineers. Other faculty from Bioengineering, Computer Science, and Computer Engineering made research presentations. Students also had an opportunity to meet one-on-one with their faculty advisor.

In addition to connecting with faculty, we felt it important to expose and connect program participants with the staff and other resources that could support their academic success. Staff gave presentations on key topics and resources for academic success including, “*Everything you wanted to know about but were afraid to ask about graduate school.*”, “*Research Practices: Success as an Undergraduate Researcher,*” and “*Effective Presentations.*” The students also had one-on-one sessions with a staff advisor.

Throughout the 7-day program, faculty and staff were invited to join the program participants for lunch and/or dinner in the dining hall. Many faculty and staff did take advantage of the opportunity to interact with the students.

We were also able to expose the participants to industry and research opportunities through an industry presentation co-presented by a Technology Program Manager and University Program Representative at Google, Inc. Participants also learned the “ins and outs” of internship experiences through a panel discussion presented by UCSC engineering students and staff. A highlight of the industry panel was that it gave the ETTP participants the opportunity to hear first-hand from current students about how to make the most of their own undergraduate engineering experience. Evaluations completed by program participants cite that this type of first-hand advice from transfer students “who have been in their shoes” was one of the most valuable aspects of the entire program.

Serving both as community building and academic preparation, the students were tasked to work in pairs and given the option either to develop a programming project or to design a PowerPoint presentation on a current research project at UCSC to be presented on the final day of ETTP. They were given time each day to work on their selected project.

When asked to comment about the role of ETTP in helping to make a successful transition to UCSC as a transfer engineering student, one participant wrote, “Most definitely yes! As I transfer student, I don’t have two years to learn the campus and its resources and make friends. This week allowed me to do all three. I am better aware of the campus, know where resources are located, and have made a network of friends. This is an amazing program I wish every transfer student could attend.”

A brief agenda of the full-seven day Engineering Transfer Transition Program is included as an appendix.

Findings

Although it is too early to assess the full impact of the program on the participants, based upon feedback from the transfer participants, the program was a huge success. It is widely accepted that students’ sense of belonging to a university is an important factor in their success². It is clear from the post-program evaluation forms the students completed that the 2008 ETTP students have already formed a strong community. Here are some student responses to the prompt:

“If you had to sum up your experience in one sentence, what would you say?”

- “This program has provided me with priceless experiences I need to be successful as a transfer student..”
- “A great opportunity to make connections.”
- “The best thing that could have been given to make the most of my time at UCSC.”
- “...by far the greatest and most rewarding experience that a transition program could offer.”
- “This program will dispel any fears about transferring and get you ready to take on your classes.”
- “If you want to get a head start and feel like you have been at UCSC for two years, do this program.”
- “A great way to get acquainted with faculty, mentors, and students.”

Three weeks into their second term we sent a short survey to all 55 new transfer students in the School of Engineering, including the 9 participants from the summer 2008 ETTP. We received responses from 7 of the 9 ETTP students and 13 of the 55 non-ETTP students. The numbers are very small but they do suggest that the program is having an impact. The results are summarized in Table 2 which shows the percentage of respondents in the top two categories for each question. The questions were all on a 5-point Likert scale: strongly agree, agree, neutral, disagree, strongly disagree. Overall the data supports our belief that the program is helping students make connections that can help them succeed.

	ETTP	Non-ETTP
1. I know where to go for Academic Advising and support.	85.7% (6/7)	84.6% (11/13)
2. I feel comfortable approaching engineering staff for academic advising and support.	100% (7/7)	92.3% (12/13)
3. I feel comfortable approaching engineering faculty for academic advising and support.	85.7% (6/7)	84.6% (11/13)
4. I know where to go if I need tutoring or other academic support for my courses.	100% (7/7)	61.6% (8/13)
5. I am aware of campus programs and resources outside of the engineering school that can aid in my academic success and I know where to go to get more information or use those resources.	100% (7/7)	76.9% (10/13)
6. I know about the resources of the Science and Engineering Library.	100% (7/7)	61.6% (8/13)
7. I have made connections with other engineering students in the School of Engineering.	100% (7/7)	53.9% (7/13)
8. Overall, I feel I have made a successful transition into the School of Engineering.	71.4% (5/7)	66.6% (8/12)
9. Before attending my first class at UCSC, I had a good understanding of the requirements for my major and what courses I should be taking in my first quarter at UCSC.	100% (7/7)	76.9% (10/13)

Table 2: Percentage of students responding either "Strongly agree" or "Agree." Other options were "Neutral", "Disagree," and "Strongly disagree." There were responses from 7 out of 10 ETTP participants and 13 out of 45 Non-ETTP participants. Actual counts are shown in parenthesis.

We plan to follow-up with the current ETTP students to find out how we can change the program so that they would all be able to agree with the questions in the survey. We were most surprised that one ETTP student indicated that he or she did not know where to go for academic advising and support (question 1). That same student also felt that he or she had not made a successful transition (question 8 was strongly disagree). One other ETTP student was neutral about having made a successful transition (question 8). We would like to understand what other support could have been provided.

Summary

Our data indicate that our summer bridge programs are helping our transfer students to be successful by staying in the intended major and graduating within the prescribed time limit. With the exception of one ETTP student, the summer 2008 participants were essentially uniformly in agreement with the survey questions indicating they felt connected, and knew where to go for advising and support. We will continue to follow the participants from our summer 2006 bridge program (that was combined with freshman) and the summer 2008 ETTP participants to see how they fare. We plan to continue to offer ETTP and would like to expand it to a larger population of students.

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Appendix

THE ENGINEERING TRANSFER TRANSITION PROGRAM PROGRAM SCHEDULE

DAY ONE ACTIVITIES

Team Building: Getting to Know Each Other Better
Scavenger Hunt: Getting to Know the Campus Better
Field Trip to off-campus research and public education facility
Sunset picnic

DAY TWO ACTIVITIES

Welcome and History of the School of Engineering
Introduction to Programming
Researching Research Presentation
Money Matters 101: Financial Aid Presentation
Evening Trip Downtown

DAY THREE ACTIVITIES

Introduction to Unix Workshop
Tips & Tools for Navigating the Campus Student Portal
Science & Engineering Library Orientation and Tour
Industry Talk Presented by Google, Inc.
Technical Writing for Engineers I
Evening Social Activity

DAY FOUR ACTIVITIES

Career Center Tour and Overview
Bioengineering Faculty Presentation
Computer Game Design Faculty Presentation
Technical Writing for Engineers II
Effective Presentations Workshop
Internship Panel

DAY FIVE ACTIVITIES

Presentation and Overview of Services for Transfer and Re-Entry Students
Everything You Wanted to Know but Were Afraid to Ask About Graduate School
Research Practices: Success as an Undergraduate Researcher
Faculty Presentation on Robotics
Tours of Faculty Research Labs

DAY SIX ACTIVITIES

Project and Research Presentations
Program Evaluations
Final Lunch with Dean, Faculty and Staff