

# Integrating Peer Mentoring into the Freshman Curriculum

Dan Budny, and Cheryl A. Paul

University of Pittsburgh, Engineering Student Services Center, B74A Benedum Hall, Pittsburgh, PA 15261

*Abstract - The transition from high school to college can be very difficult for many students. At the University of Pittsburgh, we have a system of courses and academic counseling that is designed to address these issues and help with this transition. One major component to help the freshman make this major transition is a series of mentoring courses that the entering student can select for the first semester. The student must also enroll in a Freshman Problem Solving course that details the use of various computer tools. This paper will discuss how these courses are integrated and describe the interaction of counseling with the first semester engineering problem solving course. The paper will also discuss the mentor selection process, the mentor-training program, and the topics covered in the mentoring sessions.*

*Index Terms* – Freshman Advising, Mentoring.

## INTRODUCTION

Numerous studies document the importance of educating new students with their new academic setting [1 - 5]. Indeed, helping students anticipate and understand life changes can help the university realize a significantly higher first-year student persistence rate [6]. For many years, university programs have incorporated these components via the implementation of pre-college orientation programs that include:

1. Raising the knowledge level of first-year undergraduate students with regard to lifestyle changes that can occur in moving to a campus environment [7].
2. Developing an awareness of the services offered by the university is crucial in the creation of a productive adjustment process [8].
3. Expanding new students' knowledge of changes in status, residence, failure, relationships, and authority through both interactive discussions and written materials documenting success strategies [9].
4. Helping students develop a positive attitude toward their first year at the university.

We use our summer orientation programs to address these items, and also help students become aware of the changes that are taking place in their lives and begin the transition in the student's immediate family structure by introducing professional counselors and advisors during the summer

registration program. This expansion of their family is continued in the fall semester, in ENGR0081 and ENGR0011, as peer mentors and faculty are added to their family structure. This paper is designed to give a brief overview of our freshman student transition and retention program, which employs peer mentoring integrated within the freshman courses.

## ENGR0011

The introduction to engineering problem solving course ENGR0011 is a required three credit course [10], that meets twice a week for 2-hours and has the following three overall goals:

- 1) Teach the basic analytical, programming design, problem solving, teamwork and communication skills that are used by all engineers.
- 2) Introduce the role of the computers in engineering problem solving.
- 3) Begin the understanding connection between basic science and mathematic courses and engineering.

Our emphasis is on using various computer tools and engineering problems to introduce what engineers do in their jobs. Each topic has homework projects that are ill structured in nature, that are intended to tax their judgment and creativity as well as their problem-solving skills. In addition, there is also an individual library research project that includes a written and oral presentation.

## ENGR0081

ENGR0081 is a course that explains the university policies and procedures to the students. It is required for all freshmen engineers [11]. It is a zero credit class, however the freshmen are graded pass/fail based on attendance and participation. The addition of peer mentors in ENGR0081, allows us to provide student success tips as well as survival tips from a student's perspective. This allows us to further expand the student's new family structure by allowing the peer mentors to act as brothers and/or sisters.

In the past this course was a typical introduction to engineering where once a week the entire freshman class would get a lecture on the different fields of engineering. The typical syllabus was an introduction session, followed by eight separate presentations by the different departments within the school of engineering, a study skills session, presentations by

the Co-op and study abroad programs, a session dealing with spring semester registration and a “open house” session sponsored by all the departments. Typically there would be no presentation on the last week or the week of Thanksgiving.

By student accounts, the program was “very cold” and the students’ lack of respect for the course resulted in them ignoring most of the material presented in the sessions. To make the course more “active”, the course was modified in the Fall 2001 to include a once a week peer mentoring component. Now, students meet twice a week, once in the large group lecture, and once with their respective mentors. With this design, ENGR 0081 has two main goals:

- Primary: Provide peer mentor support to assist the students in a smooth transition from high school to college,
- Secondary: Aid in identifying the engineering program the new students will eventually major in.

### **ENR0081: Lecture component**

To encourage the students to listen to the information presented by the departments, the ENGR0081 course is now integrated with the ENGR0011 course. In the ENGR0011 course the students are assigned a writing project that requires them to investigate their field of engineering. Then the material the students need to complete this assignment is presented in the ENGR0081 course.

The syllabus of the lecture sessions is basically the same under both the new design and the old design, the major difference is the students now have a reason to listen to the presentation, plus all the other sessions that the students thought were “boring” have been replaced with activities by the library and placement/career services that provide additional information needed to complete the ENGR0011 assignment.

### **ENGR0081: Mentor component**

The concept behind the mentor component of ENGR0081 is to create a “friendly environment” where the students can feel free to express their feelings and concerns in a non-classroom setting. To accomplish this we have designed small classes (10-15 students per mentor) that initiate a close bond between the freshmen students and their mentor. There are similar programs that use faculty instead of students [12], however, we felt that building a student/student relationship would be more valuable in solving the various transition issues. The classes are based upon a common non-academic theme. The small class size and common interests increases the opportunity for a personal relationship to build between the freshmen and their mentor. Once this relationship is developed between the student and the mentor, we have found that this has improved our ability to present material on transition topics such as: University resources, Wellness, Diversity, Transition from high school to college, Time Management, Working in Teams, Study Skills, Test

Preparation, Stress Management, Study Abroad, Co-op, Getting Involved, Building and Creating a Resume, and Spring registration information. By having the mentors “slip” this information into their weekly meeting the students do not even realize they are gaining valuable college success skills.

All mentors select a theme that is based on their own personal interest. The only requirement is the course schedule must fit into one of the pre-designed 30 seminar time slots on Monday through Friday from 12:00 pm - 7:50 pm. The current and/or past themes range from teamwork to sports to exploring Pittsburgh; see below for more details.

### **LIST OF THEMES FOR SEMINAR COURSES**

During the summer registration period, the students are given a booklet with a list of the various mentor classes. Each class description includes information on the mentor and a short description of the activities planned for the seminar. Listed below are samples for the seminar topics that were offered during the one of the fall semesters from the past few years.

- **Adventure Group/ Discover Pittsburgh**  
The adventure group does a series of activities in order to explore the university and the campus surroundings in a way that provides a creative way to learn more about the place we all call our “home away from home.”. The students explore University services, local restaurants, sporting events, etc.
- **Basketball**  
The group meets in Trees Gym to play pick-up games of basketball, and also sets up 3 on 3 tournaments.
- **Billiards**  
Participants spend approximately two hours per week sharpening their billiards skills through tournament play.
- **College Life**  
Everyone knows that college isn’t all about studying and going to class. In this seminar, they discuss some of the better places to “hang out,” eat, and even party, responsibly of course.
- **Entertainment in Pittsburgh**  
An advantage of going to college in a city is that there are almost unlimited entertainment resources. This seminar introduces freshman to all the activities available to them in both the city of Pittsburgh and on campus.
- **Exercise and Fitness**  
The purpose of my seminar is to provide a basic understanding of various fitness techniques and teach students weight training, basic nutrition, yoga, meditation, and how to understand their bodies
- **Freshman Engineering Student Council (FESC)**  
FESC is an organization that is run entirely by freshman, with some help from previous officers and the Engineering Student Council (ESC), to provide activities for the freshman.
- **Game Playing**  
The goal is to play a multitude of different board games including Scattergories, Pictionary, and many more.

- **Getting to Know Pittsburgh**  
There are a number of different sections of this theme. This seminar leads students on an exciting journey through the various important sites in the city of Pittsburgh.
- **Getting Involved**  
More and more employers are looking for students to not only excel in academics but who also involve themselves in activities. This seminar students get help in finding activities that suit their needs and fit their schedule.
- **Italian American Culture in the United States**  
Students research and learn about how Italian American culture is portrayed in movies, books, and on television.
- **Investigating Study Abroad Options**  
The seminar helps the students explore their options and discusses the tough choices on deciding where to study and talks about how sometimes the decisions were overwhelming.
- **Music and Movies**  
In this seminar, students talk about their favorite plays, concerts, movies and music, and check out what the campus has to offer in that area.
- **Music and culture**  
Music is a great stress reliever and the voice of generations. The seminar takes the time to look past the music industry stereotypes and choosing music for quality and not because of the group of friends that they happen to be in.
- **Ping Pong**  
Our seminar will take place in the Student Union with some fierce games of ping pong each week
- **Pitt Arts**  
The seminar helps students realize the potential for getting involved at Pitt in activities like music, drama, visual art and more, and also to teach them about the wide variety of cultural events in Pittsburgh.
- **Playing Sports**  
This sports and activities seminar is a mixture of watching sports in person, on television, and playing sports.
- **Playing Cards**  
This seminar focuses on the activity of cards and all games associated with them and spend their time sharpening their skills through tournament play.
- **Running and Other Outdoor Activities**  
The seminar goes on a run for the first hour of the meeting time and get away from the stresses of engineering.
- **Sports and Outdoors Activities**  
This seminar plan football outings against each other as well as other seminars and the Engineering Student Council, and also participates in other sports such as basketball, soccer, and softball. Finally, they also are involved in activities such as Monday night football, bowling, and maybe even miniature golf.

- **Teaming as Engineering Students**  
The goal of this seminar is to design activities that naturally encourage people to get to know each other.
- **Volunteering**  
In this seminar the mentor and students volunteer their time and service as they participate in projects to improve the Pittsburgh community.
- **Wiffleball**  
The students meet at the cathedral lawn (weather permitting) and play about a 40-minute game of wiffleball or another "stress relieving" game.

### WHAT IS A MENTOR?

Essentially, a mentor is a diligent sophomore, junior and senior engineering students who has successfully walked the path of a first year engineering student at the University of Pittsburgh. These individuals have been-there-done-that, and also have learned a few valuable lessons along the way. They were selected to be mentors because they want to share that information with the incoming freshman, and assist the freshmen engineering students in the transition from high school to college.

The mentors are a very diverse group of undergraduate upperclassmen. They cover a broad range of engineering majors and are involved in various activities the university has to offer. Many of the mentors have co-op experience, study abroad experience, participate in sports, and are officers in the engineering student council and/or the student chapters of the professional societies.

### MENTOR JOB REQUIREMENTS

Obviously the main requirement of the mentor is to facilitate their seminar section. However there are also a number of responsibilities, requirements and standards each mentor must fulfill. Each mentor is given a list of requirements before they apply for the job. Table 1 gives a list of responsibilities for each mentor.

The time requirement for the job is 6 hours per week per seminar. This includes 1 hour of class, 2 hours of preparation time, 1 hour weekly meeting with faculty, and 2 hours of office hours. Students were paid the basic university rate, based on their experience. We have found that if you allow the mentors to teach two sections (10 hours per week), it increases the amount of money they can make and typically increases the quality of the mentor.

In addition to the job responsibilities, there are a number of personal traits and academic standards that each mentor must meet. These are given in Tables 2 and 3.

TABLE 1 RESPONSIBILITIES OF A MENTOR
<ul style="list-style-type: none"> <li>• Facilitate a Freshman Seminar group once a week</li> <li>• Effectively plan appropriate activities designed to meet the specific needs of the first year engineering student.</li> <li>• Must take initiative with regard to programming their seminar, as well as office specific record keeping and data base management</li> <li>• Work closely with freshman advisors in disseminating registration and scheduling information to all first year students</li> <li>• Hold at least 2 hours of office hours in the Engineering Student Services Center each week</li> <li>• Meet once a week with the ENGR0081 faculty coordinator</li> <li>• Work with the faculty for ENGR0011 and assure each student makes their oral presentation</li> </ul>

TABLE 2 MENTOR JOB REQUIREMENTS
<ul style="list-style-type: none"> <li>• Should be gregarious, and empathetic in their approach to others</li> <li>• Must have the ability to listen</li> <li>• Respectful and responsive to issues of diversity</li> <li>• Possess a "TEAM" approach to the mentoring position. Specifically, be willing and able to work with a variety of personalities.</li> <li>• Should be willing to exchange constructive feedback with students, staff, and occasionally faculty.</li> </ul>

TABLE 3 MENTOR ACADEMIC STANDARDS
<ul style="list-style-type: none"> <li>• A 2.5 Cumulative Grade Point average is required</li> <li>• Completed the freshman year at the University of Pittsburgh</li> <li>• All mentors should be confident in their decision to pursue engineering as an undergraduate degree.</li> </ul>

**THE TRANSITION PROCESS**

Mentoring is often thought to be a lot like coaching. In fact, many mentors do find that their role as mentor takes on the task of coaching the students through the various difficult transitions from high school to college. Making transitions is an integral part of life. It is important that all participants in the student’s life, including, parents, faculty and university staff, understand that during the transition from high school to college, students often experience a sense of loss for what has changed in their life or despair over relationships that have changed or have been replaced [13]. The first year college adjustment embodies both a loss experience as well as an exciting set of new opportunities [14]. These changes can affect the students’ first year experience, including their performance in the classroom and their desire to stay in school. The culminations of such experiences are recognized within three major areas of transition:

**ACADEMIC TRANSITIONS**

The first transition that many engineering students encounter is within the academic milieu, which is often compounded by the additional challenges these changes elicit. As a student moves from high school to college he/she is channeled through the high school highly structured daily schedule of planned activities. Upon entering college, the same student is now in charge of creating and implementing their own schedule that is typically different each day, may include night

classes, and also has free time throughout the day. In addition to time management, other changes that potentially add to transition frustrations are: different teaching styles from high school teachers, walking across campus and going from building to building as opposed to walking through hallways of the same building, being the best student back home is different than competing with all the top students at the university, etc.

Previous studies indicate that a student’s first semester success can lay the groundwork for engineering program completion and/or degree attainment [15 & 16]. Therefore, appropriate support systems must be activated during the very first interaction students and their families have with the university. Several positive outcomes have been realized when students and parents are provided time with members of the university community who will continue to work with the first year students. Examples of positive outcomes are:

Students develop more realistic expectations for their upcoming year that translates into lower frustration levels for ideals unrealized [17],

Participating in educational exchanges increase student/parent perceptions as relative equals by the university, and are therefore more likely to become engaged in ongoing open communications [18],

Early awareness of campus resources strengthens and developing a students potential to persist through a four-year college program [19].

Given the three outcomes listed above, it can be hypothesized that a mentoring program that attends to these

needs of the students will assist in creating a more successful academic transition experience.

### ***I. Family Transitions***

For most first year students, arriving on campus initiates the progression from family and compliance, to residence hall living and independence. Being away from home for the first time is typically a period when students test their freedom, and begin apprehensively enjoying their challenging new environment. Simultaneously, parents may be either celebrating the departure of their child or trying to convince the student to come home every weekend. Additionally, parents might encourage the student to make new friends, or afraid of losing their child, they might prevent the student from making many university-related connections.

In our mentor sessions, students are told that the entire family is going through a change and is experiencing both excitement and sadness. It is okay and natural for the student to feel homesick and have doubts. Therefore, it is important to communicate both spontaneously and on a regular basis with their family.

Interestingly, what a family may not realize is research has discovered that leaving home often fosters improved relationships with parents via the compilation of new-found freedom to express affection while the student has begun individuating into an adult [20]. Furthermore, as a young person evolves into adulthood, they come to consider themselves to be more equal to their parents, and therefore more open to respecting each other's viewpoint. Recognized as mutual reciprocity, this developmental transformation of student/parent relations can lend to a positive family transitional experience [21].

Another benefit of the mentor program is discovered when students find they are able to confidently share relevant university information with their parents. Since parents are important to a student's perception formation, it seems likely open and accurate communications can lend to realistic expectation formation between the two groups [22]. The assumption is a satisfied student equals a happy family, which translates directly into the efficacy of the family's transitional success.

### ***II. Personal Transitions***

Being at a university means being a newcomer in a strange, and possibly lonely community. Some days students may want to fly, run, walk, or drive home. There will be days where the student feels they cannot stand one more day in the residence halls, in the large lecture, with their roommate, with their professors and teaching assistants, or their load of courses. These personal transitions can consume a first year student's thoughts if they are unable to seriously focus on why the university experience is important to their career goals. Insights from mentors can be very helpful. There may be what appear to be insurmountable personal changes during the first year, and research on student persistence supports the

importance of linking students to appropriate support personnel to assist with these challenges.

According to Greenberger (1982) psychosocial maturity, an important element in college student success development, is the capacity of an individual to function without the influence of parents [23]. Consequently, it would seem natural to assume a student functioning without parental supervision is developing psychosocial maturity. However, eliminating parents from a student's life is neither possible nor productive. Therefore, the challenge for the mentors is to help students establish clear boundaries with parents, without cutting them from the communication loop completely. Numerous studies document the importance of interaction with the freshmen during their first semester [24 – 27], thus, the mentor program has the potential to establish an environment that reinforces the existing student support system.

### **MENTOR SELECTION PROCESS**

The main challenge for the mentor is to be able to help the students in these transitions. To assist the department in selecting the mentors, the applicants must write an article that discusses a time when they mentored/coached someone through a difficult situation. The article must address the following:

- What was the situation?
- How did you approach the person you were working with?
- What was the outcome?
- What qualities do you think a great mentor must possess?
- What transferable skills have you already developed that would make you a great choice to mentor first year engineering students?

Each applicant must also provide a list of two character references, a list of additional activities they plan on including in the seminar course. Once this data is completed, each applicant is interviewed with the department staff and are asked questions similar to the following:

- Detail some leadership experience you have had.
- Are you available to teach a section during the time slots allocated for the course?
- How do you feel about standing up in front of a group of freshman?
- How would you approach a group, or just one student, who makes it a point to give you a difficult time in class?
- What are some of your ideas to improve the seminar experience?
- Expand upon your essay. How do you propose the ideas you suggested be implemented?
- What is your perception of the Freshman Leadership Team? How do you see yourself fitting in? Why do you think it is important that we function as a team?

- If a student in your seminar were having a difficult time choosing a department - how would you assist that student?
- If a student wanted to transfer out of engineering - how would you guide that person?

Once the interview is complete, the applicant is judged on the following abilities:

- Ability to relate to other students.
- Applicant's reactions to the responsibilities as a freshman mentor.
- Did the student appear motivated and excited?
- Did they express ideas that were creative and interesting?

By the end of the process, we found that the student that was not interested in the position dropped out. The one thing that we did discover, was that the students wanted to be mentors because they wanted to help the freshman and were not doing this for the money.

The final step in the process is a training workshop the week before class start. This training is run by the Engineering Student Services Center advisors, and the following topics on how to be successful in the engineering program are discussed: How to have a life and be a great student, Advising issues such as add/drop, withdrawal, and Registration procedures on how to put together a decent schedule. In addition, topics on diversity, and counseling issues such as how to get involved in a student or community organization, or simply how to have a great time balancing the rigor of engineering coursework with some of the activities the students enjoy doing are discussed.

### PROGRAM INTEGRATION

The freshmen seminar ENGR0081 is taught by the peer mentors, however, the curriculum for their courses is integrated with the freshmen engineering class, Introduction to Engineering Analysis ENGR0011. All mentors are provided with a syllabus including the necessary information to review with the freshmen. Additionally mentors integrate their assignments with the ENGR0011 course. For example, at the start of the semester the ENGR0011 course requires the students to design a personal web page. The web page must include a link to a short personal bio, a link to a page that will include a list of their hobbies and interests as a definition list, a link to a unordered list of why they selected engineering, and a link to a ordered list of their courses. Thus, the mentors will assign this task as a means of collecting personal information on their students, and then the ENGR0011 course has the students take this information and add it to their web pages.

Thus, the two courses are working together and sharing assignments.

The ENGR0011 course also requires the students to write a 6-page research paper on the field of engineering they find interesting. In the paper they must discuss the basic course work required to complete the School of Engineering, they must make a list of the professional societies associated with the field and give a brief description of one of these societies. Once again the mentors integrate the seminar with this requirement and assist the students in finding this information and review their papers as part of ENGR0081.

The library project also requires the students to print a list of all the journals at the University of Pittsburgh about their subject field and from this list of journals, select a magazine and a scholarly journal article and give a short description of the content of the articles. Once again the mentors take an active role in approving the articles and help the students find the material in the library.

The final requirement of the paper is to create a list of companies that would employ an engineer in their field and describe what that company produces and produce a list of five specific job titles w/their duties and discuss the basic working conditions for engineers in there chosen field. Once again the mentors talk to the students about their co-op or intern experiences and give the students help on contacting the placement office and other sources to find this information.

Finally the students are required to produce a 10-minute Power Point presentation of their research project and make this presentation in their ENGR0081 course. The mentors and the students in the ENGR0081 course than grade the student's presentation and the grade is incorporated into the ENGR0011 computer course.

This integration gets the mentors, freshman staff counselors and faculty all involved with the students first year experience and allows them to all work together to help with the students' first year transition.

### PROGRAM EVALUATION

The mentor program has had a significant impact on the retention and performance of the freshman. Table 1 lists the academic results for the end of the first semester for the past 7 years. The table lists the percent of students that made honors, were placed on probation, and the first semester GPA. The data shows that the performance of the freshman has been greatly improved. The percentage of students on first semester honors has increased by almost 35%, the number of students on first semester probation and the number of students with a GPA below 1.5 has been reduced by 40%, the GPA has increased by almost a half a point (C+ to a B-) and the number of students leaving engineering has reduced.

TABLE 1  
COMPARISON OF STUDENT PERFORMANCES

	1997	1998	1999	2000	Before Average	2001	2002	2003	After Average
Fall Term Starts	329	366	390	407		382	378	394	
Transfers Out	7.60%	8.74%	9.74%	14.99%	<b>10.46%</b>	9.95%	7.14%	10.15%	<b>9.10%</b>
Term Honors	19.76%	19.40%	20.26%	24.32%	<b>21.05%</b>	22.77%	34.66%	27.41%	<b>28.25%</b>
Term Probation	20.36%	16.94%	20.00%	21.62%	<b>19.77%</b>	12.83%	8.99%	12.94%	<b>11.61%</b>
Total QPA, 1.5 or below	8.21%	8.74%	12.82%	10.07%	<b>10.05%</b>	6.02%	4.50%	7.61%	<b>6.07%</b>
Average QPA	2.44	2.70	2.58	2.65	<b>2.59</b>	2.85	2.98	2.87	<b>2.90</b>

Based on data from exit surveys we have concluded that one of the major reasons for the low grades and lower retention from 1997 – 2000 was a result of the major increase in work load from high school to college. For example, this past year we asked the students to give us the number of hours they spent on homework in high school as compared to the number of hours in college. The median number of hours spent in high school was 2 hours (35% of the students said they spent zero hours in high school) as compared to 15 hours in college. We also asked the following additional questions:

“Compared to my high school experience, the amount of work I was required to do for the freshman program was greater”

“I spent the appropriate/necessary amount of time studying for exams”

On a scale of 1 to 5 (1=strongly disagree and 5=strongly agree) the average response was 4.6 and 3.5 respectively. Thus, basically everyone thought the amount of work was much greater, but they did not feel the amount of time was out of line. In fact when asked “Based on the total hours, do you feel that the amount of time required of you academically as a freshman engineer was too great, too little, or just right?”, 70% of the students responded that the amount of time was “just right”. This attitude of acceptance of the amount of required work is the direct result of the influence of the mentors, and we believe this is one of the major reasons for the increase in GPA and the increase in the retention rate.

To see if the mentors had an impact on the student’s attitude about college, the survey in Table 4 is given to the students at the end of each semester, where:

1= Unsatisfactory, and a score of 5= Takes initiative and surpasses basic competencies of freshman mentor.

The student evaluations of the mentors range from 4.5 - 4.7 on a 5.0 scale, and the comments are all basically very positive. The general feeling among the students is they thought the course would be a waste of time, but by the end of the semester their view of the course changes and they are glad they had the experience. As one student said in their course evaluation "It is the little things that my mentor did that had such a large impact on my first semester success", or “Not only did I learn a lot of information, but I believed I learned a lot of life lessons as well” and “The freshman program gives

students a fast but manageable transition from a high school workload to a college level engineering workload, while the mentors provide a good deal of support”.

TABLE 4  
MENTOR EVALUATION

- 1) Relates well to Group
  - 2) Effectively facilitates group discussion
  - 3) Communicates clearly and effectively
  - 4) Listens and guides students to make informed decisions
  - 5) Uses Freshman Seminar time efficiently
  - 6) Provides activities and information to help you be a better student
  - 7) Identifies appropriate options based on your need
  - 8) Prepares you for registration
  - 9) Shows concern for the needs on individual students
  - 10) Displays cultural sensitivity
- In addition, the students are asked to comment on:
- 1) How would you rate your mentor
  - 2) What's the overall quality of your mentoring experience.
  - 3) Comments or suggestions relating to your mentor and/or the seminar experience.

**SUMMARY**

We believe that linking the mentoring with the Engineering Problem Solving course has been a major success. It provides the university an opportunity to take a proactive approach to counseling, by staying on top of the students first semester transition. By using mentors to provide this interface we are using a non-threatening peer counselor to act as our eyes and ears so we can provide help without the student even knowing we are getting involved.

We added the mentors and started discussing the various transition issues at a time when we were also making a number of changes in the freshman curriculum, thus it is difficult to isolate one change that has produced the results we have observed. However, we believe the addition of peer mentoring into the ENGR0081 course has had a large impact on the first semester performance.

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