This paper presents the report of a University of Maryland focus group evaluating a seminar in teaching designed for undergraduate teaching fellows in engineering. The course's purpose was to provide the fellows the opportunity to apply teaching theory to practice. Focus groups were conducted in order to evaluate the course and the teaching fellows' experience as a whole. Questions were based on the course objectives, which included providing teaching fellows with: an overview of the theory and research in college teaching; an understanding of students' learning styles and of how classroom climate affects learning; the opportunity to explore different teaching methods; the information necessary to help engineering students make a connection with the school of engineering and the university; and the opportunity to process their classroom experiences. The focus group participants expressed an appreciation for the learning experience from the other teaching fellows and the instructors. The teaching fellows felt that the competencies learned were important to their personal and professional development. Several students indicated that the course impacted their career goals, and were considering teaching as a possible career. Student frustrations included a lack of opportunity to use their skills and a lack of consistency between sections. (CK)
FOCUS GROUP REPORT: SEMINAR IN COLLEGE TEACHING

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Research Report 11-96

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Summary

In 1994, the course ENES388T, Engineering Honors Seminar: Seminar in College Teaching, was created. This course was designed to provide teaching fellows a broad overview of teaching, and the skills and competencies associated with this responsibility. The purpose of the course is to provide teaching fellows the opportunity to apply teaching theory to practice.

Student learning is a term which describes the learning and developmental process of students in higher education. In order to determine the student learning of the teaching fellows, focus groups were conducted as a method of evaluating the course and the teaching fellows experience as a whole. Questions were based on the ENES388T course objectives. ENES388T proposes to provide teaching fellows with: an overview of the theory and research in college teaching; an understanding of students’ learning styles; an understanding of how classroom climate affects student learning; the opportunity to explore different methods of teaching; the information necessary to help engineering students make a connection with the school of engineering and the university; the opportunity to process their classroom experiences. The information gathered during interviews, as well as from supplemental survey forms, will be used to improve ENES388T, the ENES100 course, and the overall engineering student experience.

The general sentiment throughout the focus group was an appreciation for the learning experience in ENES388T from both the other teaching fellows and from the instructors. The teaching fellows felt as though the skills and competencies learned in the course (such as presentation skills and team building skills) were important for their personal and professional development. Several students indicated that the course has impacted their career goals and are considering teaching as a possible career direction. Some suggestions were offered for improving the course to better meet the needs of the teaching fellows and of the students in ENES100. Students also indicated some frustrations with ENES100. Among the most serious concerns were: the teaching fellows did not have the opportunity to use their skills from ENES388T, there was a lack of consistency between sections, some instructors apparently did not demonstrate the necessary skills for teaching ENES100. Overall, the teaching fellows valued their experience in ENES388T.
Introduction

Background
Engineering Coalition of Schools for Excellence and Leadership (ECSEL) is a coalition of seven schools committed to a) increasing the amount of design in the classroom; and b) recruiting and retaining women and underrepresented minorities in engineering. ECSEL is funded through a grant of the National Science Foundation (NSF) and has recently been awarded funding for continuing its efforts through 2000. The University of Maryland at College Park has been an active participant in this coalition, and has implemented a number of curricular changes in accordance with the goals and objectives of ECSEL. One of the courses which has undergone structural and curricular changes is the Introduction to Engineering Design course. This course was formerly known as ENES101, and has been changed to ENES100. Pilot courses were implemented in 1990 and 1991, and the full-scale course transformation was implemented in 1992. In the revised version of ENES100, an undergraduate teaching fellows position was created to complement the existing instructor and graduate teaching assistant positions. In 1994, the course ENES388T, Engineering Honors Seminar: Seminar in College Teaching, was created. This course was designed to provide teaching fellows a broad overview of teaching, and the skills and competencies associated with this responsibility. The purpose of the course is to provide teaching fellows the opportunity to apply teaching theory to practice. The course has been taught both individually and by the team approach. In 1995, the course was team taught by two student affairs professionals who were graduates of the College Student Personnel graduate program in the School of Education.

Purpose of Assessment
Student learning is a term which describes the learning and developmental process of students in higher education. In order to determine the student learning of the teaching fellows, focus groups were conducted as a method of evaluating the course and the teaching fellows experience as a whole. Questions were based on the ENES388T course objectives. ENES388T proposes to provide teaching fellows with: an overview of the theory and research in college teaching; an understanding of students’ learning styles; an understanding of how classroom climate affects student learning; the opportunity to explore different methods of teaching; the information necessary to help engineering students make a connection with the school of engineering and the university; the opportunity to process their classroom experiences. The information gathered during interviews, as well as from supplemental survey forms, will be used to improve ENES388T, the ENES100 course, and the overall engineering student experience.

Format of Focus Group Discussions
The evaluation process consisted of three parts: a written survey, a focus group discussion, and a written evaluation of the focus group process. Fifteen individuals participated in the focus group, the focus group lasted approximately an hour and fifteen minutes. Before the interview began, the students were asked to complete a survey to begin the process of thinking about their experiences as a teaching fellow for ENES100 and as a student in ENES388T. Demographic information was also gathered from the survey forms.

After the students completed the survey, the focus group interview began. During the interview, the students were asked the following questions: Is the course meeting your
expectations? Is the information covered in this course relevant to your experience in ENES100? Are the instructors effective? Do the instructors model effective teaching and learning methods and classroom climate? How has the entire fellows experience impacted your professional development? Has it allowed you to consider career options that you had not previously considered? Do you feel supported in the class? (learning style? as a woman? as a minority?) If you were to do this course differently, what would you do? What is the most enjoyable / effective aspect of this course? In what ways has this class and teaching fellowship been a growing experience.

The interview was tape recorded for the evaluator’s benefit. In this report, quotes are used verbatim to illustrate the nature of the discussion. These quotes may not represent proper grammar, nor sentence structure due to the free flow of the students’ spoken thoughts.

After the focus group interview was complete, the students were asked to complete an evaluation of the focus group process. This evaluation provides the evaluator feedback in order to continue to improve the focus group method.

Demographics

There were fifteen teaching fellows, and all fifteen participated in the evaluation process. Only one fellow of these fifteen was a woman. Three individuals are Asian-American, three were African American/Black, one was Latino/a, one was a citizen of another country (Cyprus), and seven participants were White American/ European-American. The age breakdown was as follows: 1-19, 2-20, 4-21, 6-22, 1-23, 1-24. Four individuals were Electrical Engineers, seven were Mechanical Engineers, two were Chemical Engineers, one was a Civil Engineer, and one indicated that his/her major was Computers.

Written Survey Results

1) Who/ What has influenced your decision to become an engineer?

The teaching fellows indicated a variety of influences in their decisions to study engineering. Among the most frequently named influences were personal interest, parents and high school teachers. The written responses follow:

-Many of my professors bring their research into the classroom and that has really kept me interested in engineering.
-Advisor, Family
-Mostly my interest in music; also my father is a civil engineer.
-Did well in math and science.
-My strong inclination and strength in the sciences (math, physics, etc.).
-Problem solving is fun, challenging.
-No one, really, it was an individual decision.
-Parents, Teachers.
-I was in a Science and Technology Program in high school.
-The ability to design things from scratch.
-Parents/ Teachers.
-Myself.
-Plant tour to W.R. Grace.
-Math, science classes, personal interest.
-Physics high school teacher and personal interest.

2) Who/What influenced your decision to be a teaching fellow for ENES100?

Again, the teaching fellows cited a variety of influences in their decision to be a teaching fellow for ENES100. The most frequently cited response was the desire to teach or explore teaching as a profession. Students also indicated that other students and their own experiences as students in ENES100 influenced their decision. The written responses follow:

-I had taken the class myself and had done some tutoring. So I was interested in helping to teach ENES100.
-Desire to TEACH!
-I want to be a teacher one day.
-Money, thought it would be fun.
-Interest for teaching. Wanted to get some teaching experience.
-Like to teach.
-I wanted to get an idea of what the teaching profession was like.
-Professors, other students.
-I knew students who had done it before.
-The opportunity to practice public speaking and to help others.
-A fellow student.
-Had served as fellow for another class; really enjoyed the experience.
-I really liked this class when I took it.
-Wanted to give back to the school, help younger students.
-Chance to develop relationship with a professor, plus, I had a good time in ENES100.

3) What is the most positive aspect of ENES388T?

From the responses, the teaching fellows most enjoyed and appreciated the forum that the class offered to discuss and share experiences with peers and with the instructors. The teaching fellows appreciated the collaborative and cooperative environment. The written responses follow:

-The discussion between the teaching fellows concerning what is going on in their class and how they deal with the problems that arise.
-Opportunity to discuss with peers! (any issues)
-The group discussions.
-Learning to deal with problem students and teamwork for the projects.
-We get to discuss about our experiences, and seek professional help and directions.
-Realistic goal of environment.
-Talking, asking questions with fellow teaching fellows and the instructors.
-Giving new engineering students a balanced, and not intimidating, view of engineering.
-Getting advice and direction on teaching.
-The ability for students to work as a group and learn how to survive as one.
-Being able to share with other fellows.
-Chance to talk with [the instructor] and other fellows to discuss problems.
-Learn about teaching styles and methods.
-Meeting other fellows, seeing what is going on in other classes.
-A time to get together and share experience and ideas.

4) How can ENES388T be improved?

The responses to this question were greatly varied. Most of these topics were discussed further in the focus group discussion.

-I think 388T works pretty well.
-Too early to tell!
-Build on the semester project and integrate this course more directly to the teaching of ENES100
-Have fellows do a short mock lecture in front of the class.
-We could have one faculty who teaches and ENES100 section come and sit through our discussions (one faculty at a time).
-Reduce the size of the class.
-Have more people from industry participate in the class.
-Time that the class is offered.
-By thinking thoroughly about the projects. Next project should have more applications.
-Actually prepare material for ENES100 classes during class; practice lecturing.
-It’s good.
-Maybe another fellow from civil [engineering]. Two from each discipline?
-Have one of the ENES100 professors come in and talk about his/her own experiences.

Focus Group Results

The instructors...

Opinions towards instructors' teaching styles were overwhelmingly positive. Students believed that both instructors modeled effective teaching styles and created an inclusive and cooperative learning environment. The students agreed that the classroom environment was one which encouraged support and learning from one another. Typical comments were as follows:

"I think one of the biggest positives, it's keeping the class interesting in terms of not doing the same thing every week... (They)'ll lecture for approximately half an hour, then break out and do group activities and that variety keeps it interesting... It also helps in terms of seeing different ways, if you had the opportunity to apply it, different teaching styles."
“I think they are pretty good at taking the stuff out of the book that may not just be common sense, like different teaching styles, seeing different things from different views, and applying that to group activities. So I think they do a good job at pointing things out that we really need to cover.”

“I think they are doing a really good job, and they keep everybody interested and this is a 5:00pm, 2 hour class... and I usually stay away and I’m pretty into it.”

“It’s not an easy job, dealing with us.”

“Another thing is, knowing that everyone’s class runs differently and every professor is different, to be able to say that we can learn stuff from each other, even after that, is an achievement also because ideas still get shared.”

“Their job is dealing with students, so they know how to deal with us, they know what we want, what we expect, and we go through. You can tell that they know that and there’s a respect level you feel so it’s easier for people to open up and say certain things.”

“I would also say that I like the way they run it. It’s not too formal or anything. I like the informality of it, it’s never like I say to myself, ‘Oh God, it’s Wednesday night again, another two hours of class, I can’t take it’, or anything. It’s never like that. I like that.”

“I think it’s difficult to set up, like, a certain ahh what [the instructors] cover in class... just because everybody’s roles as a teaching fellow differ according to the faculty member that they’re working with... so I think they’re (the instructors) doing the best job they could in preparing what we could cover in this course. Some of the stuff covered in class just doesn’t apply to some of the fellows.”

“I think it’s just a different teaching style than what we’re used to, and that’s one of the things we’re learning, that not everything is by the book, it’s supplemental if you want to learn more about what they’re talking about... they pick out the important points and try to apply it to us and see how we could do it... I think it’s kind of nice for once to not have everything the way it is in all our other classes.”

Good things about ENES388T...

The teaching fellows commented positively about 388T. From the comments during the focus groups, the teaching fellows enjoyed and looked forward to their class. The students appreciated the forum to discuss and process the events of ENES100 with other teaching fellows. In addition, some students noticed improvements in their presentation skills and communication skills. Typical comments follow:

“The chance to interact with the other fellows is really good because when else would we see them and how else would we even know who they are if it weren’t for this class. I don’t know
about the other fellows, but almost all the regular classes I take are with civil engineering majors, so it’s always nice to talk to students from other engineering disciplines.”

“I just think that this class has really brought me through the semester. I discuss my problems with this class. I wouldn’t know who else to go to if it weren’t for this class or Jane and Erin.”

“When you break up into groups you make examples of what you’ve learned, that especially, and then you present it to the class... it also helps in the oral communication skills.”

“I look forward to hearing what’s going on in other sections.”

“I look forward to being able to say something wrong and not getting stepped on.”

Suggestions for improving ENES388T...

A number of suggestions were offered to improve the course ENES388T. Suggestions which related more directly to ENES100 are described in the next section. As a whole, the suggestions reflect students’ diversity in learning preferences. For instance, some students would have preferred a more structured classroom setting while others appreciated the casualness of the course, especially in comparison with other courses. Some typical suggestions are as follows:

“I’d rather give the lecture project than just turn a paper in.”

“Process notes should be due every other week. Not enough happens.”

“I have no idea what the basis is for grading (the process notes). Need more clarifications on what they are expecting.”

“I think they shouldn’t be graded, but if they feel like we’re not doing exactly what they want, or aren’t going in the right direction with it, just say, ‘I’d like you to apply this more to what you learned in class, or tell me a little bit more about what’s going on in class, or whatever.’ But in general, not make it a graded thing.”

“For those of us who are not teaching this semester, it’s even more out there. We don’t have concrete examples (to put in the process notes or to contribute to class).”

“I think this class should be a pass/fail class because there is no basis for which to give a grade.”

“I think that the class should be more structured around the textbook maybe. Have a little bit more reading and come in here and discuss what we’ve read. Have something more structured.”

“I like not having pure structure. It’s nice, if you’re interested in going into something to go a little more into it, and not worry about covering something else.”
“Well, it’s a two hour class. The first hour could be used so one of the instructors should discuss some of the things we read in the readings or teach us how to do different things and then the second hour could be used to do our little things, you know, discuss things that went on in our section.”

“The time of it is hard because it’s a Wednesday night... when you’re here at 5:00, maybe some of the things you’d like to say don’t come out or don’t come out right.”

About ENES100...

A good amount of time was spent in discussing ENES100, although this was not the intention of the focus group. The teaching fellows had a difficult time separating their ENES388T experience from the ENES100 experience because the two were so interrelated. Overall, the teaching fellows were frustrated by the lack of collaboration between the faculty and the teaching fellows; the lack of communication, and a lack of opportunity to use skills learned in 388T. Some typical comments follow:

“I think if there was more interaction with the faculty, if the faculty knew what was going on in this class, then the faculty could give the teaching fellows more opportunity to apply what’s going on here.”

“I don’t feel it’s (ENES100) organized well enough... I wish there were ways we could have, before the semester started, met with our professors so we could plan out what we were going to do. And also something needs to be more central as far as what we cover in material. I know at discussions here, everyone seems to talk about different sorts of things... there should be some sort of central, besides the project, something central as far as materials or organization, even if it’s the midterm is all going to be on the same day.”

“In the workforce and in industry, you have to go to classes and be trained for things. I think they (ENES100 professors) should have to do it too... I have a lot of problems with my professor... The students don’t like him, I mean, they told me that they learned more in a twenty minute review session with me than they had all semester. In so many different areas, I feel like he’s just not qualified to be teaching the class; he doesn’t have an understanding, a concept of what the class is about, even. It’s frustrating to see that happening when I had a great experience in the class and these students don’t (have the same experience)... We’ve already had three students drop out of the class... It’s really disappointing to see that happen. And I think they should definitely have at least a shortened version (of ENES388T for the faculty) so they can focus, so they can remember that teaching a freshman course is different.”

“One thing that kind of frustrated me, is that in this class we learn a lot about how to teach, a lot of good methods, but I think from the group discussion, a lot of us don’t get to apply that at all because our faculty member doesn’t allow it or they’re just too hard-headed to even want to listen... I think we should be required to go to them (faculty meetings)... if we are expected to be a part of the class, we should be expected to have a part in any decisions that are made.”
"I have the same problem with not getting much opportunity in my class (ENES100 section), but I see, well if I could do this, I would know what to do. It is interesting to see how our professors aren’t doing what we’re learning that we should be doing.”

"Seeing what you learn in class and then how you want to apply it and then not getting a chance to do it and then at the same time, the professor is doing something opposite to what your personal beliefs are. After a while, you just want to say, ‘Forget it’. That just gets frustrating.

"I have a lot of complaining students in my class when the professor’s not there. But it’s funny because they’ll say a lot of what we’re learning in this class, and that just ticks me off more because I’m not getting the chance to apply a lot of it. Because it’s like, I just want to say to my professor, ‘Come here once, and you’ll see why we’re learning this stuff’. Because student’s need that stuff. Sometimes these professors need a course to teach this course because this course isn’t like one of the courses that they teach. It’s supposed to be taught at a different level and there’s different expectations. I don’t know if the purpose is defined for them.”

Professional development in ENES388T...

Since ENES388T is a significantly different type of experience from the traditional engineering courses, it is likely that the teaching fellows’ perception of possible career fields have changed. Our question, “How has this course impacted your professional development?” yielded some interesting answers. While several students indicated that they were indeed considering teaching in the future, many others saw ENES388T as an opportunity to build on some skills which will be useful in traditional engineering careers. Some typical comments follow:

“I considered teaching but I don’t want to do it. I found it’s really frustrating... I guess it’s just not in me.”

“I am actually thinking about becoming a professor, and I like this course and as someone said earlier, as a grad student, you never learn what you need to know to teach, but if you want to be a professor, you kind of need to know this, so this has been a good stepping stone. It’s been a real help.”

“That’s kind of how I look at it, too (relating to the comment above), cause I want to teach one day and I get frustrated because I like to apply what I have learned as soon as I can cause you never know how many chances you’ll get, but I guess I’ll take it with me if I get the chance to teach later.”

“Another very very very very important section whether you’re going to teach or not is the class when we went over teamwork and that is something that you’re going to have to face whether or not you’re going to teach, whether you get a job. It’s inevitable that you’re going to face that and so that was very important. It taught me more about how teams are formed and the relationships within them.”
“I think it’s nice also, because we’re still taking class and stuff and it’s nice to be able to go back to teach students many of the things you’ve learned... It’s part of my professional development to be able to take what I’ve learned through class experience and life experience and tell students about it. If someone comes to my office hours and talks about a group member who doesn’t work well with the group, I know what to tell them.”

“It helps you in the real world environment, we’re learning about different learning styles and things like that definitely help you in your interpersonal skills”.

“For interpersonal skills, it helps because you get to see different ways of thinking, different ways of picking up information, in ways you might not have thought of beforehand.”

A growing experience...

For almost all the students participating as teaching fellows, this semester has been a growing experience. The teaching fellows indicated that their growth came from the interaction with other teaching fellows, with positively affecting the students in ENES100, and with appreciating the teaching profession. Some typical comments follow:

“The fact that we’re all from different majors, but the most interesting thing I that I think that many of us react very similarly to the way we’re treated and we have very similar ideas to how to learn, how to teach. So it shows that even though we might have specialized majors, we have many similar ideas about how we think people should learn.”

“Just to help relate some of my experiences going to this school for four and a half years to them (students in ENES100), so they don’t make some of the stupid mistakes that I made helps. And when I run a review session and to know that they are grasping the concepts better makes me feel better.”

“I will take from this class that teaching can be very rewarding and it’s nice to give back.”

“Just to feel like what you’re doing is making a difference and the effort you put into it. When you study for a class, you’re doing it for yourself, but when you’re working with the students in ENES100, you’re doing it for others, and it makes it worthwhile.”

“It’s neat to see what goes on on the other side of the class. You just don’t think about it, but when you’re sitting there talking to your faculty person and planning, you’re on the other side of the classroom and that whole experience is interesting.”

“It makes you appreciate your professor more and stop reading newspapers in class, because a lot of work goes into preparing a lecture.”
Discussion of information collected in the focus group

The general sentiment throughout the focus group was an appreciation for the learning experience in ENES388T from both the other teaching fellows and from the instructors. The teaching fellows felt as though the skills and competencies learned in the course (such as presentation skills and team building skills) were important for their personal and professional development. Several students indicated that the course has affected their career goals and are considering teaching as a possible career direction. Some suggestions were offered for improving the course to better meet the needs of the teaching fellows and of the students in ENES100. Students also indicated some frustrations with ENES100. Among the most serious concerns were: the teaching fellows did not have the opportunity to use their skills from ENES388T, there is a lack of consistency between sections, some instructors apparently do not demonstrate the necessary skills for teaching ENES100. Overall, the teaching fellows valued their experience in ENES388T.

Focus Group Experience Evaluation Results

The following questions were answered after the focus group discussion. Questions 1-6 were Likert Scale items, while question 7 was an open-ended question. The Likert Scale ranged from 1, as strongly disagree to 5, as strongly agree. The responses were mostly positive, with some comments on the length of the focus group discussion, and the need for a focus group dedicated solely to ENES100.

1. I understand the purpose of the focus group: Mean: 4.40
   Standard Deviation: 0.51

2. The focus group was what I expected: Mean: 4.00
   Standard Deviation: 0.93

3. I felt comfortable talking: Mean: 4.07
   Standard Deviation: 0.88

4. The facilitator’s questions were organized and clear: Mean: 4.40
   Standard Deviation: 0.51

5. I think this is a good way to evaluate and improve the program: Mean: 4.27
   Standard Deviation: 0.88

6. The food was a positive aspect of the focus group: Mean: 4.26
   Standard Deviation: 0.88

7. Please include any suggestions for improving future focus groups:
   
   “Perhaps, greater brevity or a break in the middle. The discussion began to fade as people tired.”
“Arrange it earlier, went over the time limit.”

“Make it earlier since lecture goes from 5-7pm, make it from 5-6, instead of 6:30-7:30.”

“I think the evaluator did a great job in summarizing ideas, keeping the discussion moving along, and keeping the discussion on track.”

“The food was not our idea, you didn’t have to, but thanks. I don’t feel, sometimes that this class does not apply to teaching in engineering.”

“Have a section (focus group) of ENES100 section.”

“We need to also evaluate 100 too.”

“I liked this session, it was a good way to express opinions openly.”

“Possibly have it earlier in the day.”

“Time of the focus group.”

“Have these more often. Clearly define what is said can be used.”

“Some of the questions overlapped too much.”
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