THE FRESHMAN SEMINAR: WHEN ANOTHER COURSE JUST WON'T FIT

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ABSTRACT

All good intentions are often derailed by the realities of the moment. The need for a freshman engineering course to provided the "basics" needed by all new students of engineering is recognized by most of the profession. However, there are limits to the number of credit hours freshman can handle and be successful; i.e. return for the sophomore year. Couple this natural limit with the recognized necessity for a strong core of humanities and the solution becomes easy: don't have a freshman course. This solution serves no interest well. It deprives the freshman of the vital mentoring they need as they enter the profession and anecdotal evidence indicates that the student drop-out rate increases when mentoring is absent. So, what do we do?

A unique solution is the zero-credit, two-semester freshman seminar. Freshman enrolled in the engineering technology program at the University of Pittsburgh at Johnstown attend this seminar once a week for both semesters. The program concentrates on the holistic development of the freshman student. It focuses on the technical, instructional, administrative, performance and extra curricular information necessary to successfully navigate the freshman year thereby lessening the possibility of student attrition. Included in the course are an introduction to the various engineering technology disciplines, exposure to different university services, information on student organizations, a student "peak performance" lecture series and a clarification of several important administrative policies and procedures.

INTRODUCTION

Freshman come to universities with a multitude of reservations, apprehensions, and expectations. Fear of the unknown creates anxiety and stress among freshman which in turn does very little to help them adjust to college life. Under this scenario attrition takes its toll and many freshman, approximately 30%, leave or change four-year universities taking with them frustration about the academic system as well as a lower self esteem.¹ It is incumbent on universities to offer freshman a learning experience designed to minimize the fear of the unknown. Concurrently, the educational experience should provide the freshman with the knowledge of the various important aspects of their first year and the understanding necessary to survive and succeed in this traumatic encounter with university life.

Many universities have freshman orientation programs that focus on the difficulties of this new experience. The concentration is on generic issues including; study habits, getting along with roommates, campus layout and activities, security, and so on. The freshman are assembled in groups by dorms and are taught by both professionals and sub-professionals. All of this is fine, but it fails to promote teamwork and camaraderie in specific academic disciplines. A new engineering student, for example, is not courted by the engineers who are too busy with engineering. Many times this new student does not meet an engineering professor until the second year since most early classes are preparatory in nature. This lack of inclusion is often a reason for leaving programs, and the university in general.²

BACKGROUND

Freshman must make significant personal and academic adjustments when they enter college. They are not led through the university level educational environment in a manner similar to what they became accustomed to in high school. To combat this abrupt change and assist the freshman students transition to the new paradigm of university life, the Engineering Technology Division at the University of Pittsburgh at Johnstown developed and instituted a zero credit, one-semester seminar course in the mid-1970's. In 1990, the program evolved into the current mandatory two-term seminar that exposes the students to the essential elements of success necessary to navigate the tumultuous first year.

An analysis of freshman needs highlighted five areas of concern to the freshman. These included the Engineering Technology curriculum, student life and activities, academic performance, education support services, and administrative policies and procedures. These five areas constitute the foundation for the freshman seminar series^{3,4}.

CONCEPT DEVELOPMENT

Once the five areas of concern were identified, each area was analyzed in detail so meaningful content could be established to satisfy student needs. The first area of study introduces the freshman student to the Engineering Technology Division and the three ET departments. This introduction receives the highest priority since the students will commit to a particular department at the end of the freshman year. Consequently, four seminar sessions in the Fall semester are devoted to the department's curriculum. The Division Director meets with the students to discuss Engineering Technology in general while each department head explains what is specifically involved in being a civil, electrical, or mechanical engineering technologist.

To satisfy the freshman's second need called "belonging", the student organization segment of the seminar was instituted. Upper-class representatives of ASCE, ASME, IEEE, SWE, ASHRAE, and SUE present a seminar on what their organization offers and encourages students to join the group associated with their interests. A unique organization, SUE (Society of Undergraduate Engineers) serves as an umbrella organization providing administrative assistance for the other upper class societies. SUE acts primarily as a control organization for the freshman and sophomore students while also acting as the liaison between the ET division societies and the student senate. SUE ensures correct and timely submission of requests to the senate while keeping the lines of communications open between these organizations. The officers of SUE are usually from the sophomore class. SUE is unique in that it has a Board of Directors consisting of all its officers, two freshman representatives, and the Vice Presidents of all the upper class ET organizations. This mixture of students provides a focus on familiarity, integration, continuity and perpetuation of a vibrant and active ET student life tying all of the groups together from the freshman to senior level and giving them a sense of "belonging" to the ET division.

The third area brought into focus for the freshman involves academic performance. Several seminars are presented on what it takes to succeed in the demanding curriculum of the ET division. The primary purpose of this segment centers on having the students realize and accept personal responsibility for their own success in college. Effective habits and characteristics of "peak student performance" and related factors associated with student success are discussed in detail. This seminar series establishes realistic expectations of what is required to succeed and does this through an interactive dialogue with the students. In turn it provokes deep thoughts on the seriousness of the intense technical education the students are receiving at the university.

The fourth seminar series of topics focuses on the educational assistance available to the students. Seminars are held on the Learning Resource Center, Owen Library resources, Internet

and Career Services. Special emphasis is placed on the wealth of resources available over the Internet and the need for the students to become "master web crawlers". Library personnel offer extensive seminars on the Internet to include development of a www home page for the students. Students are acquainted with the elaborate e-mail system at the University and how it functions as the primary vehicle for communicating with faculty, staff and other students.

The final set of seminar subjects specifically address the university's policies and procedures necessary for the students to remain administratively viable. Lengthy sessions on Academic Advising, registration procedures and completion of registration forms are conducted in both the Fall and Spring terms. These sessions concentrate on helping new freshman understand the registration process, assisting in the selection of, and sign up for the classes desired, and what to do in the event they are not able to get the classes they want or need for graduation.

The advising portion of the freshman seminar series includes significant interaction between the student and their advisor since the advisor will follow them through the entire four years at UPJ. It also alleviates the significant concerns students have about the "mysterious" administrative requirements for registration. Students are personally guided through the registration process and shown how to register properly thereby minimizing student frustration with the registration process.

CONCEPT EVALUATION

The entire freshman class is required to attend each weekly seminar. The number of participants in the last six years has ranged from 65 to 80. Student evaluation of the freshman seminar series has been positive since inception. Comments from students express appreciation for the different seminar segments. Some of the specific successes attributed to the freshman seminar includes:

- Students demonstrate a more comprehensive understanding of Engineering Technology and the fields of civil, electrical and mechanical engineering technology.
- Students develop a positive perception of the various university services designed to help them succeed academically. ET students are constant users of the Learning Resource Center, library (especially the Internet resources and available expertise) and Career Services.
- Rarely, prior to 1990 when the seminar was revamped to its current form, did the UPJ campus student senate have an Engineering Technology senator. For the last six years there has been an average of fourteen (14) Engineering Technology senators per year on student senate.
- Many of the senators seeks reelection each year. Four of the current group of ET senators are freshman.
- ET senators have personally expressed deep appreciation for their senatorial experience. It afforded them the opportunity to significantly develop their leadership, team building, interpersonal, and social skills.
- "Belonging" and integration has definitely been achieved among the freshman as demonstrated by the very high level of active participation in SUE and the other upper level societies. Membership has always been an individual choice and currently only two (2) freshman chose not to participate in SUE.
- A sense of division "ownership" has surfaced as a result of SUE having a Board of Directors. For the last several years that group has successfully planned and executed an "Annual

Engineering Forum". This three (3) day event brings to the campus a wide variety of speakers. Specifically invited are ET graduates who come and "tell their stories" and serve as role models for the current students. Also invited are other prominent engineers who add to the students understanding of the engineering profession.

NOTE: Dr. Lowell Shaffer, Vice President of Student Affairs, hails this event as the most well planned, organized and executed student event at UPJ!

- Students constantly give very high ratings to the "Peak Student Performance" segment. It is presented in a fast paced and highly motivational format which leaves students with the clear realization that they alone are ultimately responsible for themselves, their education and success in the future. This series provides the freshman with a much needed "wake up call" jarring them from any complacency or over confidence they may have acquired in high school.
- The Academic Advising and Registration portion of the seminar offers explicit witness to the "care and concern" the ET faculty have for freshman. Personally advising and guiding them with the high level of interest shown by the faculty and staff tells the students they are a number one priority. The one-on-one communications with the faculty emphasizes the ET division's desire to be "student friendly and interested".

RESULTS

The results accumulated thus far are unscientific, but they indicate a positive impact of the program on the students. The most unscientific is the seminar assessment form distributed at the end of the term. An overwhelming majority of the students feel that this seminar is important to them, both as a source of information and for team-building. Many realize that they are known by the faculty far earlier that their counterparts in other majors. They are especially impressed that the leadership of the various programs have been there to talk with them.

Data collected over the years indicates that the retention rate of freshman has increased since implementation of the seminar. The data is complicated by transfer students who enter before the sophomore year. Even so, before implementation there were significant reductions in sophomore class size. With no significant increase in the number of transfers, the sophomore class has consistently been over 100% of the entering freshman class as compared to 84% before the seminar was offered. This is evidence of something going right, even if the result is only stability in numbers. Based on the comments discussed above, the important message is that students are satisfied with the program and that they feel part of the team. This is especially important in an environment that stresses the student/teacher learning team.

CONCLUSIONS

The central theme for the development of the two term freshman seminar series involves two words. These are "mentoring" and "caring". The various seminars on the five areas of concern to freshman are definitely an intentional mentoring experience provided by the ET division to its incoming freshman. The "caring" aspect of the theme manifests itself in the form of multiple encounters the freshman have with faculty, staff and, most importantly, other students. A sense of "belonging" evolves for ET freshman during that critical first year in college. This significantly reduces the fear of the unknown and helps the students make the necessary adjustments to a university level educational experience.

Retention data collected since the major changes in the Freshman seminar series were instituted suggest the "mentoring" and "caring" themes worked quite well.

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