

## **New Issues for Administrative Action**

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### **Introduction**

There are a number of important issues facing administrators in Engineering Technology programs today. Beyond the more obvious issues such as tenure, teaching loads, what constitutes research, faculty salaries and terminal degrees, there are a host of other critical issues, five of which are discussed here. While one can come up with certainly more than five issues worthy of discussion, these are ones with which the author has had recent experience and which seem particularly important in the context of engineering technology education today.

### **Student Issues**

The only student issue which will be discussed in this paper is retention. It is not a topic which is frequently considered to be an administrative issue, but there are a number of things administrators can do to improve retention. Retention is critical if for no other reason than it does us no good to recruit a student if we do not retain that student. Students leave school or change majors for a variety of reasons, some of which are totally out of the control of the institution. However, some situations exist where we can help retain a student who might otherwise leave. We need to look very carefully at ways in which administrators may help to retain students.

One of the primary reasons students drop out of school is financial. Frequently deans and department heads have some funds at their disposal which can be used as grants or partial tuition scholarships to help a needy student over a rough spot with their personal finances. Frequently this does not have to be a large amount of money. At the author's institution, it has been found that we get better retention with partial tuition scholarships than with full scholarships. At other times, maybe all a student needs is money for books or supplies. Whatever the cause of their financial plight, having a mechanism by which we can assist needy students may help in retention.

We also need to make certain that as soon as possible in our student's academic careers, they are made to feel part of our institutions. There are a number of ways this can be done such as a welcoming letter from the dean and/or department head or holding an open house at the beginning of the year for all new students. We also need ways to help students identify with each other such as grouping new students together, providing them study sessions with tutors and having quiet places for them to study. Many of our students in engineering technology are first generation college students and don't necessarily have the level of family support needed for success in college.

Another reason we lose students and where administrators can have an impact is in the area of curriculum and curricular content. We need to make certain our programs are teaching those things which are truly relevant, both in today's engineering world and in particular in the world of work in which our graduates will find themselves. How many of us are teaching subjects because we have always taught them or because they are the favorite subject of a long-time faculty member? We need to take appropriate steps to assure that our curriculum is both up-to-date and teaches what our students will need when they enter the workplace.

Beyond assuring curricular relevance, we need to make certain students are being taught in a manner which helps them to learn and which creates an ongoing interest in the subject matter. Even if the curriculum is relevant, if it is poorly taught, students will frequently lose interest and consequently will leave. As administrators, we need to provide as much help as possible to make our faculty members better teachers. Teaching should be done in a manner where not only do we create in students a sense of responsibility for their own learning but we help them to become lifelong learners. What frequently happens in engineering technology is that our faculty have been trained as engineers or technologists, not as teachers and as such, it is incumbent upon us to assist them to become better teachers.

There are a number of ways administrators can assist faculty so as to improve their teaching. If a College of Education exists on your campus, you might be able to find someone there who would be willing to work with your faculty. Alternatively, there are a number of workshops and seminars across the country dealing with teaching. It is important to make certain attendance at such workshops is seen in a positive light; in other words, it needs to be made clear the faculty member's teaching is not considered bad *per se*, but rather you are attempting to help them make it even better.

To reiterate, administrators have to make good teaching a hallmark of their administrative units. In addition, we have to continuously convince faculty that process is as important, if not more important, than content. By this I mean teaching the processes of problem solving, analysis and synthesis, particularly for problems with open ended solutions, is just as important as the teaching of any given topic or subject. Since much of the content is likely to be obsolete in a few years, it should serve primarily as the vehicle by which we teach process. Students who know process then have a sound basis which will serve them well for lifelong learning. Typically faculty have to be taught how to teach process as they are not usually familiar with how to teach such topics.

## Financial Issues

Most everyone of us, particularly if we have been an administrator for some time, have had to face some difficult financial issues. Even if we have an adequate budget, if there is such a thing, we still have to decide how to best allocate our resources. Many of our budgets have come under increasing strain of late for a variety of reasons with the net result that many of us have had to operate with constant or declining resources. The lack of adequate resources has been coupled with a corresponding increase in operating costs. Beyond added costs just due to inflation, most

institutions have been facing increased costs of changing technology, especially computing. In addition to computing, there are the costs of keeping current with technology in terms of new or replacement lab equipment as well as the cost of maintaining existing lab equipment.

One approach to tight budgets is to look more closely at the concept of productivity. If our primary mission is the education of our students, I would suggest we need to define productivity in terms of what our students know and are capable of doing. These student outcomes are defined by the goals and objectives of our programs rather than a definition based upon time spent in instruction, direct and indirect. Direct time is defined as time spent in actual formal or informal contact with students and indirect time as the time spent preparing for formal contact including lecture and lab preparation, grading, etc. I would strongly suggest we need other ways to measure workload beside credit hours or contact hours. These measures, as is well known, are not representative of the actual work done by the faculty and are even less representative of what students are learning. In addition to the time spent in preparation and in the classroom, we also need a better measure of scholarship and service. As administrators, we need to make certain that the efforts of faculty in these areas are really helping to meet the educational goals of our programs.

One way to cope with the situation of inadequate resources is to look for ways to increase the funds available to us. I would suggest there are several ways to generate revenues, most of which the author has had some direct experience. The first of these is student fees. At the author's institution, student fees have been instituted for specific courses. We have found that students do not mind paying course specific fees if they know that the money is being used to support those courses or laboratories. Our course fees are used for materials, equipment maintenance and equipment replacement. In addition, fees may be charged for things like course notes and problem sets. While such fees may be quite small on an individual basis, in the aggregate they can have a significant effect on current expense budgets.

Another potential source of funding is through alumni. In the author's experience, alumni generally feel much more connected to a college/school or to a program/department than to the larger institution. The most fruitful source of alumni funding tends to be from those who have been out of school for 10 to 20 years as these people are reaching their peak earning power. However, cultivation of these potential donors should start at the moment of their graduation. In addition to donations, alumni can be a valuable source of support through such activities as serving on advisory committees, acting as points of contact in industry, presenting seminars and speaking to student groups.

Another place where the author's institution has had some success in generating additional revenue is through the outside sale of used equipment. Frequently the ability to sell such equipment and to keep the resultant proceeds is dependent upon the laws of the state (for state operated institutions). However, it is sometimes possible to get an exemption from the laws, particularly where the equipment being sold would not be of use to anyone within the state system. The sale of old or obsolete equipment has the further advantage of making space for new or different equipment and space is usually something which is also in high demand. Along with the sale of used equipment is the possibility of renting laboratory space or equipment to outside

users.

Other potential revenue generators are short courses and workshops. These have the advantage of making use of the faculty's expertise and the institution's marketing to provide technical information to a variety of potential clients. They can also be a good source of additional income for the faculty. If the billing is done through the institution, there is the potential to charge overhead which frequently comes back to the sponsoring department or school.

Another source of funding with which all of you are familiar is that of grants. There are a wide range of sources for grants, both public and private. Grants require certain commitments such as the time required to prepare the grant application, the reporting required if the grant is received and the actual management of the grant itself. However, if grants can be tied reasonably closely to programmatic goals, they can not only provide funding but can be an impetus for doing something of value which might not otherwise be achieved. It is necessary to learn about all of the sources of such funding rather than just the usual ones, such as NSF and DOD, in order to maximize the return on your grant application efforts. In addition, grants have the capability of generating overhead monies.

The last area of potential revenue to be discussed is that of industry donations. These may take the obvious form of cash or in-kind donations but there are also other means by which industry can make significant contributions to our programs. Beyond the hiring of our graduates, there is a continuing need for our programs and the faculty teaching in those programs to maintain close contacts in industry, both from the standpoint of learning about what we should be teaching and from the aspect of faculty development. Industry can also supply people for guest lectures, provide visiting faculty, provide opportunities for faculty sabbaticals, and hire students for coop positions. How to achieve more industry involvement is discussed in more detail in the following section on industry relations.

## Industry Relations

One of the primary missions of Engineering Technology programs is to prepare our graduates to go directly into business and industry upon graduation. Thus it is very important that we make certain our programs establish and maintain good contacts with industry. It has been the author's experience that if we expect industry to provide us some of the things we want, there will be an expectation on the part of most companies for some *quid pro quo*. The bottom line in most businesses these days is very tight and for them to provide us something, we need to provide them something. This is particularly true for many small and medium sized companies.

There are a number of things we could be supplying to business and industry such as faculty expertise, student employees, technical assistance, training and project development. It is important for us to let industry know what kinds of help we have available to them under what conditions and who will be their point of contact with the institution. For example, the author has had a number of faculty who have worked in industry while on a sabbatical. Finally, if we are going to ask industry for gifts, particularly cash, they must be cultivated in the same manner as other donors. However, the approach must be one where the industry can see the value of an

ongoing intimate relationship with your institution.

To assist in establishing good relationships with industry, again we must make these relationships a priority and make this priority known to our faculty and staff. We can start by making appropriate visits ourselves to the key people in the industries which hire our graduates. The circle of potential companies can be expanded from there. Appropriate faculty might be assigned specific industries they are expected to visit a certain number of times each year. In addition, we have found it very beneficial to have industry folks visit the campus and take a tour of our facilities. Given the limited time of people in industry, we have found that breakfast meetings are well received. However these contacts are established, they must be maintained on a regular basis if they are going to be fruitful.

### The Pace of Doing Business

One of the difficulties that business has in working with academia is the time it takes for us to make a decision. This is particularly troublesome to them when compared with the pace at which they have to do business these days. It has often been said that academia moves with glacial speed. It would appear that if we are going to improve our relations with industry, we need to increase the speed at which we make decisions.

The primary argument for our long decision making time is that it allows time for contemplative reflection as well as providing the time needed to collect input from all interested or affected parties. However, the author contends that in his experience, the contemplative reflection process has not provided any better decision making. In addition, the inclusion of all interested parties frequently means that the final result is a vote (with winners and losers) rather than a consensus seeking process. In addition, people with only a marginal interest are often included further slowing down the process. There are appropriate places for the democratic process as well as appropriate places for a more autocratic process while still allowing for input from the affected parties. Electronic communications allow for rapid collection of this input without the need for endless meetings.

There are several things that can be done to speed up the decision making process in academia. For example, we need to reduce our dependency on committees to make every decision that comes out of our institutions. Certainly committees can be used but we need to make their charges very clear and give them a fixed (and appropriately short) time frame in which to do their work. We as administrators need to make certain, where we can, that the right people get on committees. Finally, appropriate recognition needs to be given for the right kind of committee service. People should not get credit for just showing up at meetings but instead should only get credit for actual contributions to the committee's work.

In addition to the time taken for committee meetings, we all are involved in a variety of meetings which frequently seem to go on forever. We need to make every effort to make our meetings more effective. There are several things which can be done to improve efficiency of meetings such as setting time limits on meetings, providing each attendee with an agenda ahead of time, making certain that the agenda is adhered to, taking minutes, and making certain that the minutes

are distributed to each attendee prior to the next meeting. If its worth having a meeting, its worth having an agenda and taking minutes. Too often in academia we fail to recognize the value of people's time.

Another approach, rather than having a meeting, is to look for alternative ways to gather data which is needed or desired for decision making. Some approaches which have been successful include the use of focus groups which can be especially valuable if they use outside people. Another technique is to use written surveys as long as they are short, sweet and to the point. E-mail is very useful for doing surveys but it may be hard to maintain the respondents' anonymity. In either case, you need to be sure the survey is written in a manner which will provide the desired information. Finally, phone surveys are quick and easy for a limited number of respondents but you need to make certain the way in which the interviewer asks the questions does not influence the results.

Lastly, If we are going to continue to work effectively with industry, we need to demonstrate we can make decisions in a timely manner. This may require some pushing on our part but if we can make it clear to our faculty as to why we can no longer take forever to make a decision and if we speed up our internal processes appropriately and do it with sensitivity, we should be able to make better decisions faster.

### Creating the Future

In the author's experience, there is a strong tendency in academia to react rather than act. While we may not have much control over what happens in our institutions as a whole, we do have a strong voice in what happens within our respective departments, programs, schools or colleges. To become active rather than reactive, we administrators must take the lead in strategic planning for our units. While strategic planning is not the be all and end all, it does provide a mechanism by which we can start to determine our future; a concept of where we want to be and how we plan to get there. Furthermore, such planning forms a sound basis for making decisions about such things as budget allocations, hiring, equipment purchases, and programmatic goals as are now required for ABET accreditation. Finally an appropriately developed strategic plan provides faculty, the institution and the public at large a mission statement and an agreed upon set of goals which describe how that mission is to be achieved and a clear definition as to what your unit/programs are all about. Unless we define what we want to be and how we are going to achieve what we want to be, we admit that we are willing to let someone define it for us.

### Conclusion

To recap, the issues which seem to be important in today's climate include the recruitment, retention and education of students with diverse backgrounds and capabilities, operating with constant or declining resources, developing and nurturing relations with industry, learning to operate much more quickly, and planning and creating the future we want for our programs. To do all of these effectively, we must have the strength of our convictions. We will have to make some difficult decisions. To do this, we need to be able to develop rational reasons for such decisions. We need to let the people who will be affected by these decisions know about them as

soon as possible. Finally we need to make such decisions in a timely manner. Doing these things will mean that not only will we be doing things right, we will also be doing the right things.

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