

mouth by graduates of the program who are gainfully employed, but experience shows that it takes three to five years for effective communication of this type to take place.

In addition to directing students to the technical program as an appropriate alternative to the bachelor's program, recruiting should be aimed at those students who might otherwise terminate their education at the high school level.

Finally, the recruiting program should emphasize that many occupational areas in agriculture and natural resources offer opportunity for young women as well as young men.

Selection and Admission

The ultimate objective of the technical program is to produce high quality graduates. Therefore, it is important that there be a measure of student selection.

Selection and admission standards and policies should be tailored to students entering college parallel curricula and vocational programs.

Standardized achievement tests are available and may be used as part of the selection process. Raw scores, which can be converted to percentile ranks on national norms, generally give a pretty good indication of verbal and mathematical ability. Testing of potential technical students should however be designed to measure more than academic ability. It should include a measure of interest, mechanical ability and other special talents.

A high school transcript should be required of all students, and should be taken into account.

Students desiring to enter a technical program should have a high school diploma and have completed the equivalent of at least two years of mathematics, and one of science, or the equivalent. From among those meeting these requirements it may be desirable to further select students on such criteria as aptitude for technical training in general, aptitude and motivation for a particular curriculum, academic standing in high school and academic test scores, and seriousness of purpose.

For those students who have not completed the equivalent of the above-recommended courses, a pre-technical program, up to a year in length, is advisable. This program also helps to establish a reserve "pool" of qualified students for subsequent technical classes. In addition to science and mathematics, a pre-technical program should offer courses in communication skills, primarily to improve proficiency in reading and mechanics of English.

A personal interview can be a vital part of the selection program, to determine the prospective student's seriousness of purpose and motivation. If a prospective student has been away from high school and has been working full-time for a substantial period, it is wise also to obtain a letter from his employer that assesses his maturity, seriousness and work habits.

In any event, if unqualified students are admitted, the level of instruction is lowered, or the failure rate is high, which is an inefficient use of both student and instructor time. If quality of instruction is compromised, then graduates will fail to perform well later in technical positions, and students and employers will become disillusioned.

Counseling

A need for counseling continues after students are admitted — in addition to a regular institutional counseling service, stu-

dents should have access to their agricultural and natural resources instructors. In many cases, the students feel a closer relationship with the classroom teacher than with the professional counselor. The counseling program should give special attention to girls who enroll in technical programs, and whose employment poses special problems and who need help in setting realistic goals.

An orientation program, before or soon after school starts, is desirable to help new students adjust to the college environment. The program can include such things as campus tours and talks by administrators and student personnel staff regarding campus rules and policies. Library orientation to acquaint students with the facilities and their use is worthwhile.

Placement

Schools offering technical programs should establish a placement service for students. Job placement may be of three types: Part-time school year, during the summer, or full-time upon completion of the program. The jobs should fit the occupational objective of the student.

Placement may be through school placement offices or by the department of agriculture and natural resources. Prospective employers should be encouraged to call the school when they need help.

Faculty should also be prepared to make recommendations as to placement at appropriate meetings of advisory committees or technical societies. The initial placement of graduates on jobs is important and will determine whether that employer will later seek additional graduates from the school. A good placement record helps motivate current students and attract new ones.

The final phase of the counseling and placement service should consist of periodic follow-up of graduates. Follow-up may be by formal questionnaire or by informal visits with employers and graduates. An effort should be made to see how former students have progressed on the job and to discover any problems they may have encountered. Follow-up studies help locate weaknesses in the program and are a valuable tool for curriculum evaluation and improvement or change. Information gained from follow-up studies is also valuable for counseling and job orientation of entering students.

Responsibilities of Four-Year Colleges and Universities

Prejudices in higher education against technical education must be overcome. Administrators and faculties of institutions of higher learning must evaluate their own educational policies in terms of providing two-year technical education. The institution must define its role — if it includes technical education, then there must be administrative and faculty support for the notion that two-year education is a worthy endeavor from the standpoint of the individual and of service to the industries of the state. Without this philosophy behind it, two-year educational programs will not have the financial support and teacher dedication that they need. The situation is apt to be gravest at those institutions that offer both four-year and less-than-four-year programs, because interaction among students, among faculty members, and between student and faculty may encourage, however unjustifiably, the concept of an educational hierarchy.

The Propensity to Administer—The Saga of the Department Chairman

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During the past several years the **NACTA JOURNAL** has devoted its March issue to administrative problems and the administrator. Several noteworthy articles have been published concerning the role of the administrator and the accomplishments of colleges and departments relating to this role. In reviewing these articles I find two theses which seem to have

universal acceptance when related to the department administrator — particularly to the department chairman — as an individual. First, administering a department only diminishes the competence of the man in his field. As he devotes more and more time to administrative functions, he probably becomes less and less qualified to return to the classroom or

laboratory. Second, the department administrator loses his drive for effective leadership from six months to ten years after his original appointment.¹

These two theses are serious indictments, particularly when directed toward department chairmanships which are usually established on a rotation basis, for they involve real sacrifices to both the individual who is serving as department chairman and to the department involved. If they are permitted to become approximately 100% true, the probability of stagnation in a department will approach 1. If departments recognize these problem areas and work toward their solution to the department's advantage, the probability of stagnation will be considerably reduced.

During recent years the growth of student enrollments in open-admission colleges and universities has been very rapid. Associated with the rapid increase in student enrollment has been a seemingly geometric increase in non-academic administrators who have an insatiable appetite for department data and opinion questionnaires. As a result the time devoted to clerical and other non-academic activities by the department chairman has grown geometrically while the time devoted to academic activities has remained constant or grown arithmetically, yielding an interesting paradox of value of time (Apologies to T. Malthus and A. Smith). This total increase in utilization of time for administrative purposes can only occur with a corresponding decrease in time devoted toward self-maintenance of professional competence, giving support to the first thesis.

It is important that this situation be recognized, particularly for rotating department chairmen. It may be corrected to some extent by limiting the term of chairmanship to a period of five years followed by a one-year sabbatical devoted to academic reinforcement. Failure to provide for academic reinforcement to the retiring department chairman in a department which observes a rotation principle for chairmen will, over time, lead to the downgrading of the professional competence of the department. In addition to providing the retiring chairman with a sabbatical for academic reinforcement, the department should insist that the retiring department chairman develop and carry out a well-developed program of retooling.

Faculty members have varying propensities to administer. Unfortunately, propensity for and competency in administration are not directly related. Departments and Deans should recognize this fact even when rotating chairmanships are involved. Just because a chairmanship is only for a given period of time is not an excuse to keep a given faculty member as chairman for that time period. The progress of the department is of paramount importance and should be recognized as such. If the faculty member fails to perform well as chairman, he should be removed from this position quickly by action of the faculty or the Dean without penalty or prejudice. He may be an excellent faculty member but a misfit as an administrator and a disaster to the department in this position.

The department chairman has a long list of duties and responsibilities which have frequently been noted. Most are basic for all institutions, a few are peculiar to specific situations. The most commonly cited high priority responsibilities are: faculty recruitment; honesty and fairness when dealing with faculty members; keeping faculty apprised of issues and seeking their advice; and avoiding too-close personal relationships with members of the department. These items are self-explanatory and have been frequently discussed. However, a responsibility of a department chairman which has not been discussed at length and which causes department chairmen the greatest personal consternation is evaluation of individual faculty members.

Faculty evaluation has to be done by the department chairman no matter how painful it may be to him. Whenever salary increases are predetermined by steps or by administrative edicts, he is relieved of this responsibility to some extent, but not entirely, for he has to make some inputs in relation to tenure, promotion, or continuing a non-tenured faculty member. He cannot defer these decisions to other administrators for if he does he is abandoning the rights and responsibilities of his department and is not representing his department.

Many faculty members view faculty evaluation as the most important function of the department chairman as far as they are personally concerned. This priority is debatable. Nevertheless, it ranks high in the minds of most faculty. Thus, the manner by which the department chairman accepts and completes this responsibility will be an important factor in developing a harmonious working relationship among the faculty.

In some instances department chairmen may utilize uniform standards when evaluating faculty members and match the faculty member's performance to these standards. These standards may have been established by the college, the department, or by the chairman. However, utilizing this technique is similar to inserting square pegs into round holes. There is little opportunity to utilize the purposes for having the faculty member in the department nor the personal goals and objectives of the individual faculty member and how he performs in relation to them. Although it may be more difficult (particularly in large departments), it would be more equitable if the department chairman would equate the purposes, goals, and objectives of each individual faculty member to the goals and objectives of the department and college and then rate the performance of the faculty member to this relationship. In this way such common standards as teaching, research, and service do not become separate entities but become intertwined with each other to allow the faculty member's total performance to be evaluated. In utilizing this technique a criteria of high value in the evaluation of one faculty member may have little or no importance in the evaluation of the next faculty member. As a result each faculty member is judged differently but fairly.

This is a very difficult technique to utilize and is subject to error because subjective evaluation has to be utilized. However, all other techniques utilize some subjective judgment and have a high potential for a greater degree of error. The attempt to individualize evaluation by equating individual and department goals and relating performance to them provides the possibility of fairer individual evaluation and greater acceptance of the evaluation by those involved.

Utilization of this procedure requires the department chairman to have a thorough knowledge of each faculty member and a fairly large block of time to complete this task satisfactorily. It also requires the department chairman to keep abreast of faculty activities and performance continuously and not just during a given time period when evaluation becomes mandatory. The department chairman's role becomes one of constant evaluation.

Quantitative tools are being utilized more and more frequently as techniques to save time in problem solving. They might be applied in some manner to reduce both the time and the degree of personal judgment involved with faculty evaluation. Let us explore a not-too-facetious approach a department chairman may utilize in faculty evaluation utilizing the assumption the chairman has gathered all possible inputs with a limited amount of bias.

It is possible to relate the total performance of a department to a production function. Generally, the range of production techniques available to a firm together with the resources available to it determine its production function. Paraphrasing this statement it may become: the variety of skills (teaching, research, service) available to an academic department together with the resources (faculty, library, classrooms, students, teaching and research aids, policy, etc.) available to it determine its quality of performance (produc-

¹ Thomas J. Stanly, "Administration - An End or a Means," NACTA Journal, Vol. XI, No. 1, March 1967, pp. 6-7.

George A. Gries, "The Departmental Administrator - The Man in the Middle," NACTA Journal, Vol. XII, No. 1, March, 1968, pp. 6-7.

tion function). Many of the available resources are predetermined or given and the department cannot do much to change them. However, it can do a great deal about the variable resources. This is possible for within the production function resource inputs can be substituted for one another usually to some degree and frequently to a considerable degree. Thus, it becomes the responsibility of the department chairman to instigate better and greater utilization of the variable resources for it is known that larger quantities or better quality of one resource used with constant quantities of others will increase a department's quality of performance up to some point. It is also known that the same variety of skills (production techniques) will not necessarily be used at different output levels. Therefore, the department chairman becomes the pilot or manipulator of the variety of existing skills to maximize the performance of the department. It is his responsibility to seek and find the best possible combination of resources and skills to yield the highest quality of performance possible by his department.

Similarly, it is possible to relate the performance of an individual faculty member to a production function and to relate the axioms stated in the previous two paragraphs to the performance of the individual faculty member because they apply to individual producers as well as to producers collectively.

For an example, let us assume we wish to measure the quality of performance of faculty member No. 3. After reviewing the expectations involved with hiring No. 3 in relation to the department's objectives and No. 3's personal goals, as well as changes in these objectives and goals over a period of time, a weighted formula to evaluate No. 3's performance may be developed. If it is concluded that No. 3's role is primarily quality teaching; his secondary role to develop a new course; his third role to participate in developing an interdisciplinary program; and minor roles of performing scholarly activities; participating in college and university activities; and department service, we may develop his performance (production) record as follows:

$$Y = .6A + .15B + .10C + .05D + .05E + .05F$$

- Y = Total performance
- A = Teaching quality
- B = New course development
- C = Interdisciplinary activities
- D = Papers published or presented
- E = College & university activities
- F = Departmental service

It should be emphasized that this production function is just for faculty member No. 3 in year X. It may or may not be duplicated for any other faculty member and it may not be utilized for No. 3 again.

The next step is to determine the rating scale to be utilized in evaluating each input. For simplicity purposes it would be easiest to have a maximum rating of 1 or 100. However, all inputs should have the same rating scale.

The next step would be to determine the ratings for each input and finally compute the performance record. The final figure may be used to compare the performance of No. 3 with all other faculty members.

The ratings for each input may be difficult to obtain. For an example, input A, teaching quality of faculty member No. 3, will be utilized. The following criteria are available: preregistration class enrollment; final class enrollment; student rating of teaching performance; student withdrawals; comments from other faculty; comments from students; comments from faculty who utilize No. 3's course as a prerequisite to their course; personal observation. A production function of No. 3's teaching quality may be established after thoroughly evaluating the quality, credibility, and reliability of the inputs.

$$A = .15S + .05T + .10U + .10V + .10W + .15X + .20Y + .15Z$$

- A = Teaching Quality
- S = Preregistration enrollment
- T = Final enrollment
- U = Student ratings
- V = Student withdrawals
- W = Faculty comments
- X = Student comments
- Y = Personal observation
- Z = Faculty comments (course prerequisite)

The purpose of relating the department chairman's evaluation of an individual faculty member to a production function is to illustrate the importance of this responsibility. Evaluation deserves more than a guess or a personal opinion at a given instance of time for successful evaluation is a key to one of the several locks that open the door to a successful, progressive department. It demands all the valid inputs possible and requires that the department chairman utilize them to the best of his capability.

PREDICTING STUDENT ACADEMIC SUCCESS IN COLLEGE

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Educators for many years have searched for a meaningful guide to measure the academic ability of students. This search has progressed through a long evolution of intelligence tests, charts, measurements of one sort or another and ranking of student performance. With a comparison of the accumulated data and student performance in college it became apparent that there is a direct correlation between a student's academic achievement in high school and his chance to obtain a C or better in college.

Many different types of intelligence tests have been used to measure student academic ability. Many were designed to measure certain specific items in academic achievement: i.e., reading ability, mathematical ability, comprehension, etc. As would be expected, many intelligence tests prove their worth in indicating performance, others were of little or no value. Out of the maze of tests two selected by the Southeast Missouri State College as reliable were, the Ohio State University Psychological Test

(OSUPT) and the student's high school class rank. The OSUPT gives an excellent measure of the possible mental ability of the student and the class rank indicates the student's attitude toward academic work and his ability to perform. A high OSUPT score coupled with a high high school class rank would indicate that the student not only possessed the ability to do excellent college work, but his attitude and performance would be of comparable caliber. Suffice to say that if the opposite were true, chances of making a C or better would be very slight.

The Southeast Missouri State College has accumulated data on students performance since the fall term of 1958. These data, utilized in a manner similar to that of studies conducted by the University of Missouri,¹ have been used to predict the academic success of students enrolled at Southeast Missouri State

¹ Prediger, Dale J., Krauskopf, Charles J., and Callis, Robert - Predicting Academic Success at the University of Missouri. Testing and Counseling Service Report: Vol. 17, No. 2, January 1963.