

spend from 15 minutes to 1 hour a week writing business letters. Plans of work also occupy 29 percent of the respondents from 15 minutes to an hour each week, whereas 17 percent spend over an hour each week writing plans of work. Speeches and office memos each involve 29 percent of the respondents between fifteen minutes and one hour per week, and an additional 16 percent spend over one hour per week writing speeches and memos. Thirty-one percent of the respondents spend up to one hour in an average week writing progress reports. The mean number of hours spent by respondents in writing was 7.1 hours.

Over half of the respondents indicated that writing courses they took while at the U. of I. were useful to them. Thirty-five percent also learned useful writing skills in agriculture courses which required lab reports, research papers, and other writing assignments.

Respondents holding managerial positions were asked the following question: "In general, how would you rate the skills in written communication of those persons who apply for positions in your company?" A rating scale of "Very good," "Good," "Don't know," and "Very poor" was provided. Twenty-eight percent of the managers rated applicants' skills as "Poor" or "Very poor" and 37 percent rated them as "Good" or "Very good." The remaining 35 percent could not rate applicants' writing skills.

Many respondents added unsolicited comments to the questionnaire. One 1928 graduate wrote,

I think speech and writing are more important in any line of work than most undergraduates realize. You can make more hay by being able to stand on your feet and talk when called upon, than by being the most able person in your profession if inarticulate.

His remark sums up the attitude of most of the respondents who added personal notes. Several commented that writing skills are closely related to success in agricultural careers. A 1948 graduate noted, "Busy executives demand concise, well-organized technical reports, and justifiably so." Others expressed regret that they had not enrolled in technical writing, report writing, or research reporting courses while students. One noted that "Any skill that will improve an individual's capacity to write simply and briefly would be of great benefit." As a footnote to his comments on the value of speech and writing courses which he took at the U.

of I., a 1961 graduate wrote "These courses would have been more useful had I known their importance and studied." Another graduate stressed that students should realize that a few years after graduation they may be working in an area only remotely connected with what they studied in college. But because writing is important in any career, he recommends thorough preparation for all students.

Conclusion

Overall, the survey shows that effective writing is essential for most graduates of the College of Agriculture: the sheer number of hours that most graduates spend writing is convincing evidence of its significance. It also suggests that in particular graduates who plan to enter managerial positions and "go to the top" will find effective writing an essential.

Findings in the survey have important implications for agriculture faculty and administrators, too. Today a variety of pressures on university administrators and classroom teachers may adversely affect the writing skills of our graduates. Many colleges and universities are reducing the number of writing courses required of students regardless of their writing skills. Budgetary cutbacks which necessitate larger class enrollments limit the time an instructor can devote to evaluation of student writing. Students, particularly those who do not write well, argue that writing assignments are "irrelevant" to agricultural coursework. But the findings from this questionnaire suggest that we do our students no favor if we yield to these various pressures and reduce composition requirements for all students, whether qualified or not, or omit writing assignments from agriculture courses. Our students will be writing once they leave the university. We therefore will be most helpful to them if we provide meaningful writing experiences, familiarizing them with the variety of writing tasks they will face in agricultural careers and helping them perfect writing skills.

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THE RISE AND FALL OF THE ADVISOR . . . STUDENTS ATTEMPT TO EVALUATE THEIR INSTRUCTORS

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The following article describes a particular effort at the University of Illinois. It provides a case study of student efforts to evaluate instructors and publish the results. The article gives faculty, students, and administrators at other institutions details about this effort which might be useful on their own campus. It considers the entire University, realizing that the College of Agriculture is a vital part of the total institutional system.

The death of The Advisor was proclaimed in the March 14 editorial of the University of Illinois student newspaper, The Daily Illini.¹ The Advisor, a yearly student publication which provides the only public campus-wide student evaluation of faculty, was reported as an apparent victim of the current tight budget. In figuring its priorities, the University decided that the \$4,000 plus staff and equipment it has contributed yearly to make The Advisor possible would be better spent somewhere else.

Lack of financial resources may have dealt the killing blow, but lack of student leadership and manpower became apparent during the 1971 Fall semester. Although a sound, workable delivery system for data collection, analysis, and publication had been worked out, student apathy caused serious problems in the execution of the student-directed operations. The viable student leadership that emerged on campus during the late 60's had not transferred to the current student body. In short, no one wanted

to put enough concern and work into The Advisor in order that someone else could benefit.

Another development may have strangled The Advisor in unknown dimensions. A long-range study group on University reform, known by the acronym CRUEL (The Commission for the Reform of Undergraduate Education and Living), voted last year to support mandatory student evaluation of faculty members. Last December the vice-chancellor for academic affairs acknowledged support for such an idea. In the last issue of The Advisor, the editors supported CRUEL's position and hinted the time would come for mandatory use of teacher-course evaluation questionnaires and the departments would be required to use the results of such questionnaires in the hiring and firing process.²

Subsequently, the University had second thoughts about its budget. Funds supporting The Advisor came from a budget allocated to short term support of innovative projects so ideas could be tested. University monies for The Advisor had been provided for three years to test the feasibility of the effort. With persistent needs for innovation in other areas, the University decided 1971-72 would be the year to see if The Advisor could become self-supporting, freeing the supporting funds to The Advisor for other needed efforts.

Although it is difficult to conjecture about the impact of The

Advisor on the University of Illinois College of Agriculture, the publication was widely read by both students and faculty. Efforts to improve courses seemed to stem from a low course rating or sharp, piercing and many times biased comments from the student editors of *The Advisor*. Along with other events of its time, *The Advisor* promoted a fruitful discussion of the teaching-learning environment in the College. It made the faculty aware of some causes for student irritations and promoted the search for answers. Cursed by some, its weaknesses exposed by many. *The Advisor* promoted a healthy revival of teacher concern in the student at a time of crisis in higher education.

Historical Development

The *Advisor* project of evaluating all courses by all students was first undertaken in the Spring of 1968 by a committee of the Student Senate. That year was the real beginning of the organized "ed reform" movement. Products of the movement was the experimental 199 undergraduate open seminars covering topics not treated by regular courses, the pass-fail option, changes in college requirements and the creation of discussion sessions for huge freshmen lecture courses.

On this first try, all the work on *The Advisor* was done by students. The students developed the questionnaire, distributed it, collected the data, analyzed the data by hand and published it. Many errors in analysis and editorializing on the data caused many to scoff at the effort. However, substantial support followed the successful introduction of the publication on campus. This generated momentum for another *Advisor* project for the 1968-69 school year.

Recognizing the size of their task, the students asked for help from the Measurement and Research Division of the Office of Instructional Resources (MARD). Serving as consultants, the MARD staff suggested that data collection be made on Digitek machine-scoring answer sheets and the analysis of the data be made on the computer. The students then adopted a two-sided answer sheet with side 1 consisting of written comments about the course, and side 2 being machine scoreable and consisting of Likert attitude statements relating to the course and the instructor.³

The Advisor 1969-70

Favorable support from students and the "ed crisis" dictated a continuing *Advisor* effort. Students and their MARD consultants tried to "debug" the delivery system. Additional identification information was placed on the answer sheet to aid analysis. The item section was completely revised to include the four subsets: (1) Overall Evaluation of the Course, (2) Instructor, (3) Quiz or Discussion, (4) Laboratory or Language Lab. The quiz and laboratory subsets were put last because only certain courses used these as part of the learning environment. More extensive information about homework and exams was collected on the subjective side of the questionnaire where the student could write out his own comments about the course, etc.

Inadequate distribution of the questionnaires plagued the project from the beginning. In previous years the envelopes containing *Advisor* questionnaires were hand-addressed to the departments with the course number indicated and the number of answer sheets approximated.

The departmental secretaries were to place the envelopes in the appropriate instructor's mailbox. It was estimated that at least one-third of the envelopes never reached the instructor. With the departmental secretary as gatekeeper in the delivery system, distribution was too poor. MARD recommended to the students that mailings be made to individual instructors by using gummed labels from a computer printout.

Acquiring labels with the right information turned into a monumental task. No mailing list existed which included instructor's name, course he taught, his campus address, and the enrollment in the course. Therefore, a request was submitted to Administrative Data Processing unit on campus for labels to be punched from a report which merged instructor name and department with courses taught and their enrollments. This unit

had all the information except faculty addresses. A data card file from another unit furnished addresses and was plugged into the program at the time of printing of the labels.

When the labels were obtained, they were affixed onto the envelopes. The appropriate number of *Advisor* answer sheets were counted out according to the information on the label and these plus the cover letter, instruction letter and identification sheet made *The Advisor* packet. Approximately 140,000 questionnaires in 3,000 envelopes were mailed the first week in January in order that an instructor would have one week to administer *The Advisor* questionnaires before the final examination period began. Forty-five thousand, seven hundred and eighteen sheets were returned with 2,244 classes being represented. Because sheets were mailed to the main lecturer for a course and his quiz instructors for their quiz sections, the large lecture classes with quiz sections received twice as many sheets as needed. This error was corrected in later *Advisor* mailings.

Three copies of the computer printout, for each course section returning the questionnaires, were distributed in mid-May: One to the instructor, one to the *Advisor* and one filed in the MARD office.

Faculty Request Form

Because of the low return rate of *Advisor* answer sheets for the fall semester, a large amount of *Advisor* funds was essentially wasted, not only in materials but in manpower. It was proposed that if the faculty requested the *Advisor* answer sheets, there would be less waste. To implement such a request, each individual faculty member received a letter from *The Advisor* asking them to fill in and return an attached request form for *The Advisor* answer sheets to be used in their courses. Approximately 840 instructors made a request for 48,000 answer sheets. Eighteen-thousand and ten sheets were returned representing 957 separate sections. This was at a time when students and faculty were going out on strike regarding the Cambodian issue. Even with these disturbances, the system was beginning to function smoothly.

Success With Failure

Using the same procedure and answer forms as the 1969-70 *Advisor*, approximately 26,580 forms were returned for the Fall 1970 courses and 17,689 forms for the Spring 1971 courses. This produced the currently available 276-page *The Advisor*.

The *Advisor* editors optimistically wrote about their objectives, accomplishments, shortcomings and future goals.

When *The Advisor* was first organized, it was intended to lead students to good, interesting courses, and steer them away from dry, boring lectures and impossible grading standards, as well as to encourage departments to consider teaching skills in addition to publishing accomplishments in the hiring and firing of faculty. These considerations are still important, but now we are just as interested in encouraging individual instructors in the improvement of their courses through criticism, comparison, and suggestion as in pushing the departments to "get rid of" unsatisfactory instructors . . .

. . . for financial reasons, forms have not been sent to all professors, but only to those who requested them for their classes, a fact which limits the sample of courses and instructors and in many cases serves to encourage "bad" instructors to forget the whole thing . . .

. . . we have relied on the subjective written responses to openended questions rather more than on the computer scores because the subjective questions allow the student more room to comment on the problems or good points of the course.⁴

For the Fall 1971, the students working on *The Advisor* project agreed to combine the Illinois Course Evaluation Questionnaire (CEQ) to *The Advisor* openended statements and make these completely optional to the instructors as to whether or not to publish their results.^{5 6} Approximately 873 faculty members made requests for *Advisor* forms and approximately 48,000 sheets were sent out and 28,158 sheets were returned, representing 1,160 separate sections. The course results and answer sheets will be returned to the instructors for their own use but *The Advisor* will not be published for 1972-73. Shortage of University funding for the project and student apathy are cited for the failure to publish *The Advisor* again.

Summary

In this case these conclusions seem appropriate:

(1) The quality of student leaders is vital to an effective student attempt to evaluate instruction. This can vary over time from aggressive to apathetic, competent to incompetent, etc.

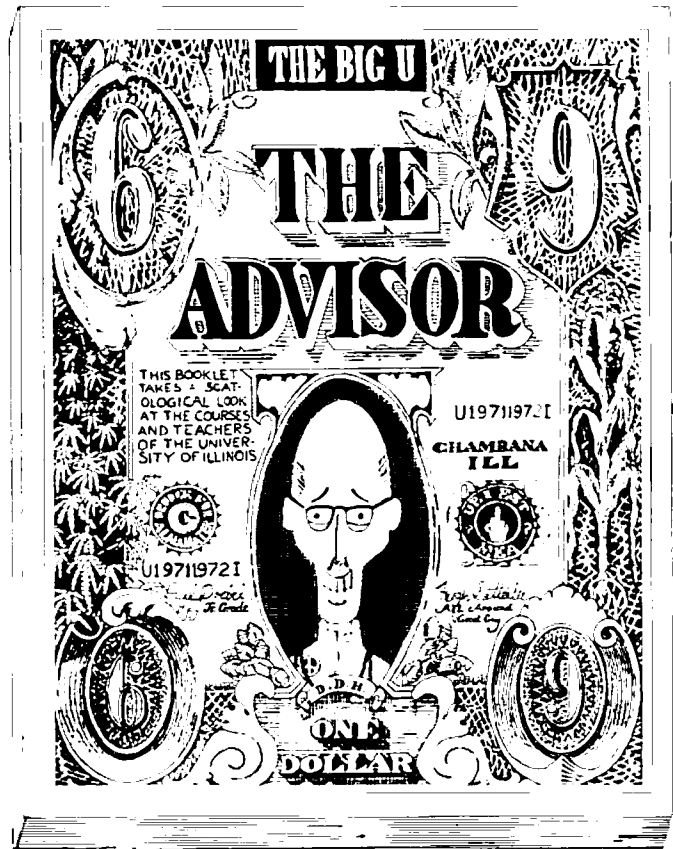
(2) A new idea of this nature has numerous hurdles to overcome before it can succeed, for example, resistance by the status quo, the mere mechanics of handling and processing the data, financial support to pay the bills, and cooperation from students, faculty and administration in the collection and analysis of the data. Securing volunteer cooperation from the faculty on the evaluation of problem courses as well as good courses become difficult.

(3) The financial support an institution can give to innovative projects, whether faculty or student, is limited and comes under close scrutiny with tighter budgets.

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A NEW IDEA IN AGRICULTURAL ENGINEERING ORIENTATION

by W. G. Matlock and M. L. Schield*

The need for orientation in a subject matter area as a means of career motivation and prevention of dropouts has been recognized by many educators. Traditionally, the student takes a course which presents information about his career field. Studying about a field has not always supplied the career motivation desired. A better introductory course would be one in which the student actually does what he will be doing in his chosen career. The departure from traditional methods should challenge and interest the student.

Until the Fall of 1969, a general orientation course was taught for all College of Engineering freshmen, including students majoring in Agricultural Engineering at The University of Arizona. At that time, the general course was dropped in favor of individual departmental orientation courses.

Enrollment in Agricultural Engineering at The University of Arizona has not been large enough to justify a freshmen orientation course. Therefore, the freshmen Agricultural Engineers were combined with non-engineers in a 2 semester-unit course organized to meet the needs of the two diverse groups of students. The defined objectives are:

1. to introduce the students to the engineering profession, its functions and branches; agricultural engineering and its uniqueness; the qualifications, duties and responsibilities of engineers
2. to provide practice in the use of basic engineering tools such as units, unit factors, measurements, significant figures, scientific notation, slide rule, accuracy of computations, and sketching
3. to present the philosophy, techniques, and application of the engineering method of problem solving
4. to permit the student to participate in a supervised creative design project
5. to give experience in engineering report preparation and presentation.

Various teaching methods are used including lectures and discussions. Slides, films, guest speakers, and tape recordings provide information about the engineering profession and particu-

larly agricultural engineering. The course textbook is *Careers in Engineering and Technology*** by Beakley and Leach. Although not followed rigidly, it is an excellent introductory text, especially in its presentation of the engineering method of problem solving.

Because some students have had previous experience in engineering fundamentals, an opportunity is given for taking a pre-test in certain areas. If the student successfully passes the test, he is not required to attend the classes devoted to that subject.

The basic teaching team is composed of one professor and one graduate assistant. Other faculty members serve as guest lecturers on such subjects as research, design, and career opportunities. Early in the semester, the students are divided into groups of four to six for the design project activity. An attempt is made to 'balance' the groups in terms of the student's major subjects and units completed. Originally each group elected a chief engineer, but more successful group operation has been obtained with the chief engineer appointed by the instructors.

To further the development of group spirit, group members are seated together for the balance of the semester. Each group selects their design project from a list of approved projects or may choose a new project with the approval of the instructor. Approximately one-fourth of the class periods are devoted to supervised group activities connected with the design project. Faculty members or engineers and other specialists in industry serve as consultants. Questionnaires sent to potential users of the products have provided useful information in a number of cases. Shop and laboratory facilities are made available to the students at various times outside of class for research, tests, construction of models, and prototypes.

Near the end of the semester, a written project report is submitted. A presentation on each design project is given by the responsible group followed by an open discussion. This occurs in