

With certain of these courses it may not matter a lot about the particular sequence in which they are taken. With others, however, it will make a tremendous difference. A series of courses in agriculture and the other sciences taken in the proper sequence will be worth many times the value of the same group of courses taken at random. You would not expect to see a student enroll in biochemistry, then organic chemistry, and finally take general chemistry. The ridiculousness of this example seems quite obvious. But to a lesser degree, similar examples can be found on transcript after transcript. In most of these cases, most of the blame must be put on a teacher who was not supervising his advisees close enough before and during the time of registration. It is true that once we have mapped out a series of courses with a student, he should be able to follow our suggestions. Too often, however, a student can be swayed by things which seem to be more important at the time. He may want to take a certain course because a friend is taking it, or because it does not meet on Saturday, or maybe because of a preference for a certain teacher, or for any number of reasons. He may not realize the loss in value of taking a course without a certain prerequisite. As his advisor, we should point out the importance of taking the courses in his curriculum in a certain sequence and encourage and on occasion maybe even insist that they be taken in a particular order. It is true that on occasion we will have to make exceptions. However, the closer we supervise, the fewer the number of exceptions that will have to be made.

To illustrate what can happen when a student has apparently not received the proper advice, let me cite one of the more extreme examples I have encountered. Recently, I received the transcript of a junior student who had been assigned as my advisee. In three succeeding semesters, among other courses, he had failed general chemistry, received a grade of D in principles of nutrition, and failed elementary organic chemistry. Let me emphasize again that these courses were taken in three succeeding semesters in the order in which I have them listed. In our curriculum, this particular course in nutrition is designed for the junior year while the chemistry courses are designed for the freshmen and sophomore years. If the student had not been permitted to enroll in nutrition until after he had passed his two chemistry courses with grades of C or better, think of how much more of the value and principles of nutrition he would have reaped. He may have even enjoyed the subject. To say that the boy now has any enthusiasm or appreciation for the subject of nutrition would be less than wishful thinking on our part.

Even more amazing is the fact that he was permitted to enroll in organic chemistry without having passed general chemistry. I feel satisfied that the student was "advising" himself and somehow managed to get a faculty member's signature on his registration forms. Naturally, the student has had to start all over with his chemistry series. The proper thing to do now would probably be to encourage him to repeat the course in principles of nutrition. His ideas about nutrition must be con-

fused and vague to say the least. To help avoid this type of problem, I make it a point to review personally the records of each of my advisees before each registration day. Of the courses that he is still required or advised to take, I make a list of those that are offered during the current semester and for which he has the proper prerequisites. Then in consultation with the student, we work out his schedule for that semester.

#### Elective Courses

Students in any particular curriculum should not necessarily be required to all pursue the same block of courses. More capable students should be expected to take more advanced courses as well as courses that fit their particular interests. Obviously, the fewer the number of specific courses you require in any curriculum, the greater the amount of supervision and counselling you will need to do. The aptitudes and interests of each student must be kept in mind as you recommend certain courses. Certainly, you will have to explain your recommendations and encourage him to follow them. Try to get him to see that they are for his benefit. We need always to keep the welfare of the student in mind and not mistake some of our interests for his. In other words, do not encourage a student to take a particular course just because we like it, or because we may be teaching it and need to fatten up our number of student-credit-hours.

For most students majoring in agriculture, additional sciences such as mathematics, physics, organic chemistry, analytical chemistry, biochemistry, and possibly even statistics should be among those considered as electives. These additional science courses will be especially important to those students who may have the potential for graduate study. For some students, additional electives from the field of business will best suit their needs. In any case, let us not lose sight of the fact that it is the student who should be at the center of our consideration when we recommend a given course of action.

No matter how well we think we may be doing as a counsellor and advisor, as well as a teacher in general, let us never cease to analyse and evaluate our progress. If we allow ourselves to become contented teachers, we will become stagnant teachers. Stagnant teachers cannot stimulate the knowledge-thirsty minds of the students with whom we have been entrusted.

## Competition for Youth

Lloyd Dowler, Dean of Agriculture

Fresno State College

For the past 14 years I have helped Fresno State Agriculture graduates find employment in a wide variety of agribusiness occupations; at the same time I have worked with industry representatives in an effort to find the right man for a par-

ticular job description. This has provided me with a golden opportunity to study the demands being made on our college for young men and women with degrees in Agriculture. I have developed a real interest in the kinds of demands being made on us at Fresno State for agriculture graduates. Records have been kept on what our graduates do when they leave the School of Agriculture for over ten years. Using the data gathered from our graduates, we have published a bulletin titled "A Counseling Aid to Agribusiness Opportunities." This was undertaken to acquaint the high school counselors with the many opportunities that exist in agribusiness and to solicit their cooperation in guiding more city youth into this type of work. If we are to meet the demands being made on us for agriculture graduates we must wage a more active recruitment campaign for young people in every city across the nation.

The word "agribusiness" is, of course, relatively new in our vocabulary; and it has taken some time to get the high school counselors, the school administrators, and parents familiar with the fact that a wide variety of job opportunities exist for young people in the industries serving agriculture. The greatest competition for youth today comes from the companies supplying the services the farmer must have to grow his crops and to transport his products from the farm to the processing plants where they can be packaged and made available for the consumer. In addition to the agribusiness industries, there is another strong competitor for our youth — the local draft board. With the war in Vietnam gathering momentum, more and more college students are becoming aware of the demands being made by the various branches of the military service to step up recruitment efforts to fill quotas established by our selective service system. This situation, of course, will decrease the number of agriculture graduates during the next few years. This fact must be kept in mind as companies make plans for replacement personnel for the next few years.

Demands for agriculture graduates have been unusually strong. A recent letter from the American Agrimanagement Corporation, Yakima, Washington, describes the situation quite well. The corporation writes: "The need for trained personnel in the fields of agriculture has never been greater, and we, like others in this related field, are continually looking for men with proper background and training to aid us in our work." The request was for several men with experience to work in the specialized field of farm management. This points up the importance of farm management as a career for young people. The related industries supplying the services that farmers must have to produce their crops and livestock create, by far, the largest number of job opportunities for agriculture graduates. More Fresno State agriculture students enter the field of agricultural sales than any other single placement classification. Chemical companies producing insecticides, pesticides, weedicides, herbicides, fertilizers, and other products needed by the

farmer or rancher rank high on the list of organizations continually looking for young people with college degrees in agriculture. This represents a real deficit area in California. Some banks are calling on the placement offices on our campuses twice a year to find agriculture graduates who may wish to work in appraisal departments or to serve as farm loan officers. One of our recent graduates who chose a career in banking became general manager of one of the banks in the San Joaquin Valley in less than five years after accepting his first assignment. This illustrates the rapidity with which young people may advance within certain organizations and helps to point up the opportunity young people have in banking today.

Feed companies serving the livestock and poultry industries offer many opportunities for animal science graduates. The expansion of farm mechanization has created a strong demand for agriculture graduates with degrees in both agricultural mechanics and agricultural engineering. Here again, the sales force required to handle the parts for the new tractors with all of their attachments is increasing. The expiration of the bracero program has focused more attention on mechanization. This is resulting in a greater demand for agricultural graduates to operate and maintain the machines as well as to serve on the sales force.

Let us now move to another point and see what the enrollment trends are in our agricultural schools across the United States. The 1964 fall term enrollment for baccalaureate degree programs in the land-grant colleges showed a little more than a 7 percent increase over the previous year. According to information compiled by Dr. Henry S. Brunner, formerly a specialist for the Department of Health, Education, and Welfare in Washington, D. C., there were approximately 35,547 students enrolled in the 67 institutions surveyed. These figures do not include enrollments in the junior colleges and state colleges throughout the United States. Out of this total, 58 of the 67 institutions showed increases in enrollment in 1964 with a 16 percent gain over the previous year.

The graduate enrollment in the land-grant universities showed an increase of 17 percent in 1964. This combined increase in the undergraduate and terminal enrollment constitutes an increase over 1963 and reverses a downward trend shown in the preceding nine-year period.

In examining what has happened in the subject matter areas, ornamental horticulture showed the greatest increase in enrollment at the undergraduate level with an increase of 37 percent. At the master's degree level, the number of food technology majors increased 45 percent; and at the doctoral level, horticulture and soils majors shared the honors by having 60 percent and 57 percent increases, respectively.

In California, it was encouraging to all of us working in agricultural education to note that our enrollments in agriculture at the termination of the registration for the fall semester of 1965 in the high

schools, junior colleges, state colleges, and the university were at an all time high. The Bureau of Agricultural Education in Sacramento reported a total enrollment of 14,000 students in vocational agriculture; 19 junior colleges had 2,500 students enrolled in their two-year programs; the state colleges, 3,000 students; and the University of California campuses, approximately 1,650 students. These figures do not include enrollment in the general agriculture programs in the Los Angeles high schools or the graduate students enrolled at the University of California.

Some segments of our agriculture industry are being affected more than others by the small enrollments in certain major fields of study. The number of graduates in 1964, listed alphabetically by major fields of study, was: Agronomy, 367; Animal Husbandry, 920; Agricultural Economics, 739; Agricultural Education, 714; Agricultural Engineering, 285; Dairy Husbandry, 160; Dairy Industry, 132; Farm Management, 102; Food Technology, 91; General Agriculture, 436; Home Economics, 3, 685; Horticulture Fruit and Vegetable Crops, 228; Ornamental Horticulture, 111; Poultry, 61; Soils, 109; Veterinary Medicine, 789; and other majors not classified, 459. It is easy to understand why the opportunities for trained people in Food Science and Poultry, for example, are good when there are so few students enrolled in these programs.

The statement has been made that the land-grant universities are graduating approximately 8,500 students annually with B.S. degrees in agriculture and that there is a need for at least 15,000. A nationwide study needs to be made to determine whether there are this many jobs available in agribusiness. In California plans are underway to conduct a study to determine the actual number of job opportunities in agribusiness. Steps are being taken to identify the current need for employees in agriculture and its closely related fields as well as developing estimates of future needs for trained employees in agriculture as it concerns numbers, kind of jobs, and qualifications. The need to accomplish these objectives was recognized some time ago when the state colleges and university department chairmen and deans of agriculture met at Fresno State College and selected a committee to explore the possibility of obtaining funds from agribusiness industries to conduct such a study. Since that time the U. S. Office of Education, through the Commissioner, has indicated that federal funds are available to conduct special studies. Approximately 10 million dollars has been set aside annually since the Vocational Education Act was passed in 1963. This information was made available to deans of resident instruction at the land-grant college meeting held in Washington, D. C., in November, 1964. During the 1964-65 school year, the Liaison Committee on Agriculture for the state colleges, junior colleges and the University in California recommended that the teacher education department of the University of California prepare a written proposal asking for funds from the U. S. Commissioner of Education to conduct a study to determine the total jobs available in agribusiness. Although the original title of this project had to be redefined or restated

and a second submission made, it now appears that approximately \$200,000 will be forthcoming to conduct a study where the following objectives will be considered:

1. Determine the current status of education in agriculture in the high schools, junior colleges, and four-year institutions.
2. Identify the current need for employees in agriculture.
3. Develop estimates of future needs for trained employees in agriculture pertaining to numbers, kinds of jobs, and qualifications.
4. Identify current, emerging, and future competencies needed by workers in agriculture.
5. Develop guidelines to determine current, emerging, and future curricula needed to prepare workers for agriculture.
6. Develop criteria which high schools, junior colleges, and four-year institutions may use to determine whether or not instruction in agriculture should be offered and, if so, to determine the proper emphasis of the curricula.

In this proposal, positions have been established for a full time director and assistant directors. There will be an advisory committee of key decision-makers representing agricultural education in the high schools, junior colleges, state colleges, and the University of California, the State Department of Education, the State Department of Employment, agricultural industry, farms, and the related social science disciplines.

The vastness of the agricultural industry will demand that sampling procedures be used so that data obtained will represent the sub-populations under study. For example, in the fertilizer industry a list of the dealers will be obtained from the California Fertilizer Association and the State Department of Agriculture. A random sample of employers will be drawn from this list. Similar procedures will be followed with the pesticide manufacturing industry and other groups such as the Agricultural Council of California. It is hoped that this study will be completed by June 30, 1968.

This study will give us figures that will be meaningful in working with high school counselors in our future recruitment efforts. I am sure it will cause certain agribusiness industries to see why it is important for them to take a more active part in helping to tell about the need for more graduates in scientific agriculture. Certainly, there are many unknowns regarding the availability of jobs for high school, junior college, and college students in this 3.4 billion dollar agricultural industry in California.

The placement offices in our state colleges and university have been providing a service to our seniors and graduates for the past few years that tells us how well our agriculture graduates are doing salary wise in comparison with graduates from other major fields of study. The overall monthly average salary from the four colleges (University of California at Davis, California State Polytechnic College at San Luis Obispo and at Pomona, and Fresno State College) was \$502, or \$6,024 annually, for all major fields of study. The College Placement Council, Bethlehem, Pennsylvania, in its **Study of**

**1964-65 Beginning Offers**, listed the average monthly salary for the first period "by curriculum for all types of employers" as follows: Chemical engineer, \$639; electrical engineer, \$637; aeronautical engineer, \$633; mechanical engineer, \$631; metallurgical engineer, \$627; industrial engineer, \$618; civil engineer, \$607; physics, chemistry and mathematics, \$587; accounting, \$544; business-general, \$508; marketing and distribution, \$501; humanities and social sciences, \$485. You can see, then, that if we add the average agriculture figure for California to this list it would rank 12th out of 13 by curriculum for all types of employers. These figures represent actual salary and do not take into consideration any fringe benefits such as housing and other factors that could change this picture considerably. In making a similar comparison with other curriculums here in California we found a similar pattern in salary differential. The average beginning salaries for graduates with master's degrees and doctoral degrees from the University of California at Davis were \$625 and \$766 per month, respectively. These figures are below the average monthly figures for business administration, industrial management, or commerce which was \$648; considerably below the 779 for electrical engineering; and below the \$735 figure for mathematics and physics. The spread between beginning monthly averages as identified by the University of California at Davis and the figures shown for doctoral candidates reported by the Placement Council was much greater than that cited for B.S. and M.S. degrees. The University of California average for agriculture graduates with doctoral degrees in 1965 was \$766 as contrasted with \$1106 for electrical engineers; \$1032 for chemical engineers; \$1031 for mechanical engineers; \$1168 for mathematics; \$1016 for physics; and \$996 for chemistry. From this data we can conclude that agriculture is lagging somewhat in its beginning salaries paid to college graduates when compared to other types of curriculums.

It would be helpful if we had data to show comparable salaries after five to ten years of employment. Unfortunately, I have no statistics on this as it concerns either state or national averages for agricultural graduates. In 1962 a study of the 1952 to 1961 agricultural graduates of Fresno State College was made to determine how much they earned after one to ten years in industry, and the average salary for this period was \$7300 per year.

There are many fringe benefits offered to agricultural graduates, depending on the type of employment. All agricultural graduates entering teaching or county, state and federal positions have set schedules for advancement in pay, have paid vacations, retirement benefits, hospitalization plans, sick leave provisions, and a set work week which they can usually rely upon. The agricultural sales field which represents one of the largest employers of our agricultural graduates has a varied list of fringe benefits depending upon whether it is in mechanized agriculture, animal science, or plant science. Many of these companies provide vehicles for both on-the-job and off-the-job use. Per diem while away from home with liberal expense accounts is provided.

This area of employment represents one of the most competitive segments of our agribusiness industry and there seems to be a relatively higher turnover in personnel as compared to the county, state and federal positions.

There are more questions asked today by the college graduate about such benefits as health, accident, or medical care; group life insurance; profit sharing plans; availability of an automobile; paid vacations; and bonus sharing opportunities. As a result, more companies are thinking about how they can improve their fringe benefits to compete more favorably for qualified youth. I believe industry can do much to establish programs that will encourage more young people to enter a particular profession by **establishing worthwhile scholarships**, by **developing a more aggressive recruitment program**, and by **studying the long range needs of their organization** more carefully. Work experience is a good way for young people to decide what profession they wish to pursue. Several agencies, such as the Soil Conservation Service have trainee programs that permit the individual to work during the summer months and become acquainted with the organization. Those who work as trainees have an opportunity to start at a higher rating when they become a part of the permanent work force. The chemical companies have a wonderful opportunity to establish programs of this kind where they can employ summer help to do extra tasks at a time when the work load of other employees is at a peak. This gives the company a chance to evaluate the work habits of the individual, to learn how he assumes responsibility, to size up his ability to work independently or cooperatively in the organization — and perhaps most important of all — to study his overall attitude which plays such an important role in determining whether he will fit into the organization.

A company that will give a maximum of encouragement to its employees to advance on the job to the highest level of management in accordance with the individual's capabilities is bound to have a more stable and capable work force than the one who neglects to encourage this system. There is a real need to pay more attention to how we handle or manage our work force — at least it has been said that it is time we devote as much careful planning to our work force as we do to the planting of a crop. With a dropout rate of approximately 5 percent a year, farming is a hazardous business. The type of management required must be trained to get the most out of the employees, the machinery, and to work with it in such a manner that it will bring the greatest returns. Only by using good judgment and drawing on our past experience can we succeed in meeting our competition. This statement reminds me of a story I read in the **Washington Post** that told about a young fellow who wanted to get ahead in the world so he decided to seek advice from Old Zeke, the wisest man in the county. After seeking out Old Zeke, the youngster respectfully asked him the secret of his wisdom. "Good judgment," Zeke replied. "But how do you get good judgment?" asked the young man. "'From experience,'" was Zeke's

reply. "But how do you get experience?" asked the young man. "From bad judgment," Old Zeke wisely replied.

Ernie Blackwelder, owner of Blackwelder Manufacturing Company, Rio Vista, California, has made this statement, "Agriculture is in the same position now that other industries have been in for several years. We must now put the right man in the right job, and he must be trained to fill it. Agriculture is no longer the place to solve the social problems of society. We must start upgrading the type of man who is going to do the work. He will no longer be a farm laborer, but will be upgraded to the position of a farm technician. As we mechanize, wages will increase. Therefore, we will need to be more competitive with other industries. As we automate and become more like a factory these types of jobs will undoubtedly become unionized which will result in higher wage rate for the workers. The supervisors of these workers must, of necessity, receive specialized training and their salaries will need to be competitive if the work is to be accomplished properly. It is obvious that not just any worker can be put on a \$20,000 machine and operate it without adequate training."

I am sure that the junior colleges, the state colleges, the universities, and the high school vocational agriculture instructors are all anxious to cooperate with all segments of agribusiness across the nation in establishing the kinds of training programs that will minimize the amount of time that must be spent in training the individual when he gets on the job. I hope that agricultural organizations will not hesitate to call on the agricultural schools to provide short term classes for industrial employees that will help keep them up-to-date with an ever-changing agricultural technology. As taxpayers, all industry has the obligation to take time to visit schools, colleges and universities to see if their programs are in keeping with the times. Only by working together cooperatively can we be assured of meeting our competition successfully in the future.

## **Judging Contests— A Motivating Factor**

**F. B. HOUGHTON**

**Animal Science**

**Northwest Missouri State College**

Webster defines judging as "to form a conclusion, to pronounce judgment or form an opinion upon." A contest is defined as "a struggle for supremacy."

Judging contests can then be described as a struggle for supremacy in forming logical conclusions concerning certain situations or conditions. A livestock judging contest becomes a struggle against active opposition to excel in evaluating the animals as to their merits for the purpose they were

produced to fulfill. The soils judging contest becomes a matching of knowledge and skills to see which team can come the closest to the "official appraisal" in their evaluation of the various soil types in question. The meats judging contest becomes a challenge to prove the superiority of the individual, or team, in appraising the merits of various carcasses and meat cuts.

Any contest becomes a challenge for supremacy. To the average student, a challenge creates more interest in the activity. The more interest the student has in the activity the more active will be his participation, both mental and physical. Learning is active, not passive. To the degree that there is more mental activity, or even physical activity, to that degree will be the learning process. Interest is one of the strongest motivating factors we have in formal education. Without it learning proceeds at a much slower pace or may even cease to occur at all.

If we accept the premise that judging contests create more interest in a particular field, then we may conclude that they can be used as a motivating factor in the educational process. Granted that the master teacher may be able to build into a student the internal satisfaction which would motivate him toward acquiring data or solving problems, the fact still remains that for the majority of instructors, every potential motivating factor must be explored for possible use to bring about more effective teaching.

Judging contests might just as well be termed appraisal contests, or contests in evaluation, because they are just that. Aside from their value as interest stimulators, they have merit of their own from a purely educational standpoint.

Judging contests train students in the ability to make logical analyses. Judging is an art based on careful and correct observations. A student must cast aside all prejudiced ideas and approach the task in an honest and open-minded manner. This means that early in his judging activities he must develop a spirit of fairness without prejudice. A student soon learns that when he allows personal prejudices or biased opinions to enter into his judging activities, he basically disqualifies himself as a competent judge. Judging contests aid students in developing the art of being open and fairminded and gives them training in rendering sound judgment which are two basic purposes in education.

Judging contests enable the student to develop independence of thought. The opinions of others, the judgement of fellow students are listened to, but the conscientious student who wishes to achieve a degree of excellence in judging, soon becomes aware of the fact that his own judgment may be as valid, or more so, than the student who is learning with him, and consequently concludes that it is best to be honest with one's self and rely on his own independent thinking. Students who are engaged in judging activities soon see that if they observe accurately, weigh the facts carefully, and make logical conclusions, their "busts" are reduced to a minimum.

Judging contests help train students to have a keen power of observation. This keen power of observation comes about as the result of intense