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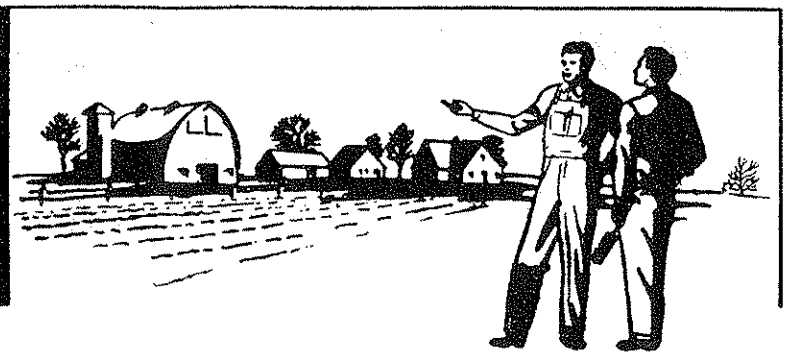
Featuring—Vocational Agriculture—Agricultural College Relationships

The Agricultural Education Magazine



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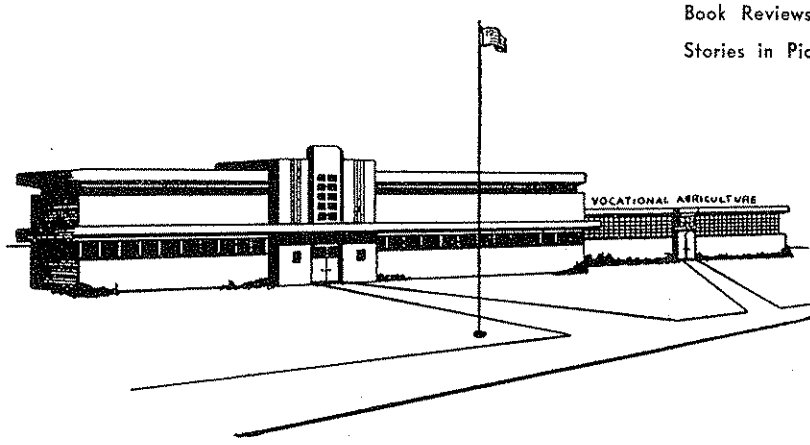

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Editorials

SUMMIT TIME

LEO L. KNUTI, Teacher Education, Montana State College

Vocational agriculture and agricultural college relationships leave much to be desired. These two important arms of agricultural education are far from a "kissing cousin" status. During time of stress, family ties need to be strengthened rather than weakened. In a few states working relationships are outstanding while in others they are practically nonexistant. Vocational agriculture workers have a warm spot in their heart for their Alma Mater. What separates the two groups are legalistic and administrative channels that widen the gulf of mutual understanding, appreciation and cooperation .

Agriculture, as an industry and as a people, now finds itself a minority group confronted with seemingly insurmountable problems. If there ever was a need for teamwork on the part of all concerned, it is now. This teamwork could encompass all agricultural agencies and organizations.

Whether vocational agriculture teacher training should be in a college of agriculture or education is important, but relationships are more important. Fundamentally, we, in vocational agriculture, are primarily educators even though we are agriculturalists. About one-half of the teacher training departments are administratively housed in each. Both arrangements can be satisfactory.

Colleges of agriculture have suffered from "Sputnikitis" much as have our vocational agriculture programs. Vocational programs have decreased some in numbers of students and departments. Even in the famous Land-Grant college system, many of the agricultural divisions are presently the smallest in numbers of students. Some indications point to an increase in agricultural college and local high school vo-ag enrollments.

Agricultural experiment stations and extension services, along with resident instruction, are integral parts of a college of agriculture. How vocational agriculture might join this triumvirate on a team basis is a sound objective in terms of public service and mutual benefit.

Summit meetings between vocational agriculture and agricultural colleges are gravely needed at this time and on a permanent basis. Try to recall of AVA, a regional conference, or a national meeting of vocational agriculture and college of agriculture representatives or a state meeting where this problem of working relationships has been the major topic of discussion. Few, if any, can recall such a meeting.

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From the Editor's Desk . . .

Some Thoughts for Colleges of Agriculture

Colleges of agriculture have been deploring the fact that they are not enrolling an adequate supply of capable students. Some agricultural college personnel have even implied that both the low number of students and their low scholastic aptitudes were a responsibility of the teachers of vocational agirculture. The truth is that the future welfare of our agricultural colleges and of vocational agriculture is very closely related and that colleges of agriculture must assume much of the responsibility for the quality and quantity of their student bodies.

The responsibility of the colleges starts with the extent to which they encourage students to take vocational agriculture in high school. Some agricultural colleges recognize vocational argriculture; others encourage capable farm boys to take the traditional college entrance program, avoiding vocational agriculture. Such negative attitudes on the part of colleges of agriculture toward vocational agriculture may have adverse effects on student enrollments in and public attitudes toward colleges of agriculture.

One possible effect might be that teachers of vocational agriculture could lose their feelings of loyalty to their alma maters and refuse to encourage students to attend these schools.

A second effect could be that many capable farm boys do not enroll in vocational agriculture, become interested in nonagricultural areas of study, and do not attend agricultural colleges.

A third effect might be that public attitudes toward agricultural professions become negative with the result that these professions become less attractive to young people. If colleges of agriculture have no faith in the ability of their graduates to teach boys effectively, why should anyone outside of agriculture have any respect for either the colleges or agricultural professions?

The net result of negative attitudes on the part of the public towards agriculture as a life work is reduced enrollments at the college level as well as at the high school level. Unless agricutural colleges work with the entire agricultural occupation family to establish respect for all members of the family, it is likely that they will continue to feel the pains of decreasing enrollments and deteriorating professional status.

Agricultural colleges can make a start toward improving the status of agricultural occupations by recognizing that a good high school vocational agri-

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Some Thoughts - - -

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culture program is good preparation for college; that enrollment in vocational agriculture does not mean the student takes no mathematics or science; that the quality of teaching is far more important in determining how well students are prepared for college than is the selection of particular courses; that seeking languages, science and mathematics as bedfellows will not automatically make agriculture respectable.

If vocational agriculture programs are in direct competition with colleges of agriculture with regard to content of instruction, then it is probably time for revisions in both programs.

If the vocational agriculture programs are inadequate, then agricultural colleges had best study ways to provide better teachers instead of encouraging capable students to by-pass the high school vocational agriculture program. □

Summit Time - - -

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Specific areas of misunderstanding which plague us currently are:

(1) Do college courses duplicate or compliment what is taught in high school vocational agriculture?

(2) Does high school vocational agriculture endanger a student's college preparation or vice versa?

(3) Does vocational agriculture actually deter many future farmers from attending an agricultural college or vice versa?

(4) Should vocational agriculture broaden its present objectives on the high school level?

(5) Should teacher training for vocational agriculture stress the basic sciences and humanities rather than technical subject matter?

Strange as it may seem, facts and figures do little to alter personal opinions and observations. What is needed is a series of face-to-face contacts between vocational agriculture and college of agriculture groups. In a college of agriculture, this would primarily be the resident instruction section. State meetings might be the most productive. Pilot meetings in some states could set a good pattern.

Vocational agriculture workers and extension workers have recognized that their programs are different and complimentary. Many an outsider would think that too much duplication exists. A similar working relationship with colleges of agriculture per se is urgently needed. □

The Cover Picture

Instructional material suitable for California's diversified agriculture is a much-sought commodity in that state. To meet some of the needs, California State Polytechnic College, one of the two Vo-Ag teacher education institutions in the state, launched a major program in the preparation of filmstrips, handbooks, agricultural mechanics plans, production guide lines, and other teaching materials. One member of the agricultural education staff, Dr. Dale Andrews, was given a part-time assignment to give leadership to this program, working with the agricultural division and the audio-visual staff of the college. Materials are made available through the college bookstore. During the annual conference of the California Agriculture Teachers Association, materials were displayed at "The Farm," as the commercial exhibit is called. The annual conference, bringing together nearly 400 agriculture teachers in California, is held on the Cal Poly campus at San Luis Obispo. Making available these much-needed instructional materials has proved a most valuable and much appreciated service and an outstanding illustration of a vocational agriculture—agricultural college relationship. □

What do studies show? - - -

College Success of Former Students of Vocational Agriculture

FREDERICK K. T. TOM, Teacher Education, Cornell University

Should a boy who wants to go to a college of agriculture study vocational agriculture in high school?

One approach to answering the above question is to look into the research which has been done on the subject of how well former students of vocational agriculture have done in college. With this thought in mind, the author reviewed the thirteen editions of *Summaries of Studies in Agricultural Education*, U. S. Department of Health, Education, and Welfare, Office of Education. The reader will recall that these publications contain brief summaries of all the studies done in the field of agricultural education in the United States. Most of the investigations were performed at land-grant institutions by advanced degree candidates, but some were done by teacher trainers and state supervisors. Thirty-two studies relating to this subject were found.

Generally speaking, the researchers attempted to compare the success of former students of vocational agriculture with those who had not taken this course in high school. In the studies reviewed, what constituted a former student of vocational agriculture ranged from a person with five to seven units of vocational agriculture to anyone with at least one unit of vocational agriculture. This variability also extended to the various criteria used for measuring college success. Among them were scholastic achievement, election to honor societies, the college attrition rate, the number who entered agricultural occupations, and participation in extra-curricular activities.

Furthermore, for the purpose of this report, only results pertaining to scholastic achievement will be cited. Former students of vocational agriculture will be referred to as the vocational group while their counterparts will be referred to as the nonvocational or control group.

The three earliest investigations on this subject reported in *Summaries of Studies in Agricultural Education* were completed in 1929. Maddox and Dickinson (21), who studied the records of 230 University of Missouri, College of Agriculture students, found that the average college grades for the vocational and nonvocational groups were *2.0* and *1.8* respectively. They also found, upon stratifying their data, that the vocational group *excelled* in the three groups of subjects studied, namely, technical agriculture, sciences, and academic subjects. It should be noted that the aver-

Editor's Note: This is one of a series of articles sponsored by the A.V.A. Agr. Ed. Research Committee to review research findings and point up possible applications to our programs.

age high school grade for the vocational group was 2.51 compared with 2.25 for the nonvocational group. Peeler (27) of North Carolina found that the vocational boys in his survey were *superior* in animal husbandry and chemistry, *slightly superior* in botany, English, social sciences, education, zoology, and other agricultural subjects, and equal in horticulture, poultry, and farm crops. In the third 1929 report, Farmer (13) studied the records of 7,765 freshman students at three Virginia colleges and noted *no significant difference* between vocational students and other students in scholastic standing in history, mathematics, art and language, but that the vocational students *performed better* than others in agricultural and science subjects.

In Missouri, Singleton (29) studied 426 students in 1931 and reported that the vocational group earned an average of 2.25 in courses in agriculture compared with 2.11 for the nonvocational group. Fay's (14) 1932 Wisconsin report on 526 freshmen showed that in terms of first-year grade point ratios, the vocational agriculture group *did better* than two check groups, those who took vocational subjects other than agriculture in high school and those who took no vocational work at all. Bradford (4), pairing 500 Nebraska students according to their high school grades and intelligence quotients, found that the vocational group had an average grade in all subjects of 78.1 as contrasted with 76.8 for the nonvocational graduates. The former group *did better* than the latter group in agricultural subjects but *approximately the same* in English, mathematics, economics and natural science. In a Louisiana study in 1933, Hester (19), in a sample of 224 boys, found that former students of vocational agriculture excelled in all subjects in college except engineering drawing. Moss (24), in a 1947 Texas study involving 100 former students of vocational agriculture and 100 control students, said that there was *no significant difference* between the two groups when the criterion was their total grade point average for all college work. However, the vocational group did *slightly better* than the nonvocational group in agricultural subjects. In North Carolina, 219 students were studied by Santorum (28) in 1950. He found that the vocational group did *slightly better* in courses related to vocational agriculture, like agricultural engineering and field crops, than the control group. However, they did *just as well* in mathematics, physics, chemistry, science, history, farm shop, livestock, and crops courses, and *poorer* in English. Using first-quarter grade-point average as the criterion, Bunten (7) found in 1951 in Colorado that 106 students who took vocational agriculture in high school were prepared *equally as well* for college agriculture as 284 students who took the more traditional college preparatory courses. Wiggins (32) reported in a 1953 Pennsylvania study that *no significant differences* in college honor-point averages were found among 93 students divided into three groups: those with four years of vocational agriculture, those with one to three years, and those with none. Also in 1953, Bell (1) showed in Oklahoma, after studying the records of 417 students, that those who had vocational agriculture in high school *did consistently better* work in those college subjects directly related to agriculture. After his investigation in North Carolina in 1954 involving 169 students, Watson (31) could not say that non-vocational students *do any better* in agriculture, mathematics, or science than do vocational students. In South Carolina, Hall (17), in 1955, found *no significant difference* in college grades between the two groups.

In one of the largest studies reported, involving 1016 students, Burch (6), in 1957 found that students with one or more units of vocational agriculture consistently *earned better grades* than did students without vocational agriculture in the following basic agriculture courses at the University of Missouri: Farm Shop 10, Animal Husbandry 1, Dairy Husbandry 1, Field Crops 1, and Poultry Husbandry 1. Furthermore, the former group also *did somewhat better* in Zoology 1. There was very little contrast between the two groups in their achievements in Botany 1. In another 1957 report, Circle (9) of Kansas showed that the vocational groups (5-7 units of vocational agriculture) had a *significantly higher mean* grade point upon graduation than the control group. A population of 185 graduates was used in Circle's investigation.

In a University of California study at Davis, Thompson (30), in 1958, working with 75 vocational students and a like number of nonvocational students, showed that there was *no demonstrable difference* in grade-point averages between students who had three or more years of vocational agriculture in high school and those who had not taken agriculture in high school. Similarly, studying the records of 260 vocational and 364 nonvocational students at Oregon State College, Pedersen (26), in 1958, found *no difference* in scholastic achievement at the end of the freshman year between the two groups. On the other hand, Cunningham's (11) research in 1958 in Ohio on 429 students showed that the vocational agriculture group had a *higher* scholastic record in technical agriculture, mathematics, and total program than did the control group, but did *poorer* in English. From the University of Minnesota, Hanson (18) reported in 1958 that when he divided his 720 students into eight high school course-pattern subgroups and analyzed their scholastic achievements, he could find *no significant differences* in (1) first-quarter honor-point ratios; (2) first-year honor-point ratios; and (3) first-year honor-point ratios of agriculture courses. However, when the criteria of honor-point ratios in basic science and mathematics were used, the vocational sub-group did *poorer* than those which had a high level of high school course work in science and mathematics.

In discussing the scholastic achievements of the vocational versus the nonvocational group, the reader might be interested in knowing that some studies specifically report upon the intelligence level or the scholastic aptitude level of the groups. Among them are the four to be reported below. According to the summary of McCalley's (23) research in Iowa in 1930 involving 287 vocational boys, although the intelligence rating of the vocational graduates was slightly lower than others in college, the vocational group earned grades in all subjects *approximately at the average* for all college students, *had higher grades* in the first year of college, and made *slightly higher grades* in mathematics and in three introductory animal husbandry courses. In another case where the vocational group had a lower intelligence rating, Clark (10), also in 1930, worked with the records of 286 students in New York and found that the vocational group who had had at least six units of vocational agriculture had average grades in all college subjects *as high as* those of the nonvocational group. He also discovered that although the difference in grades was not great, the vocational group did *better* in agri-

cultural and science courses but *poorer* in English, economics and mathematics. In Merritt's (22) survey of 272 students in New York in 1938, he found the vocational group to be lower in scholastic aptitude, ranking at the 6.7 decile in comparison with the 8.3 for the control group. Nevertheless, in spite of the lower aptitude, the scholastic achievement of the vocational group was *generally the same* as the other group. In an investigation similar to Merritt's, Brooks (5), in 1954, using 170 students, reported that his vocational group had an average ACE percentile rank of 31.16 while the control group averaged 49.60. This wide difference notwithstanding, the vocational group had the respectable grade point average in all courses taken of *2.61* as compared with *2.64* for the control group. Brooks seems to feel some justification, when the intelligence level of the students was considered, in saying that the vocational agriculture curriculum was more satisfactory than others in Maryland high schools for students entering the College of Agriculture curricula at the University of Maryland.

Perhaps the institution that has done the most research in the area of college achievements of former students of vocational agriculture is Iowa State College. In addition to McCalley's study already reviewed, seven others were completed at that institution between 1947 and 1950. Gamble (16), Drake (12), Carter (8), and Bicknell (3) used the commendable analysis of co-variance technique, controlling on ACE scores and English marks. Gamble found *no significant differences* between the two groups (N = 164) in terms of the final mark in the beginning poultry husbandry course. Drake *did likewise* in the case of the introductory course in dairy industry (N = 256). On the other hand, Carter (N = 224) showed that the vocational group *significantly excelled* the control group by one-third of a letter mark in first year botany. Similarly, Bicknell, working with 997 students, found that the vocational group *did better* in honor-point rates earned in first-quarter agriculture courses than did the three other groups in the study. From his findings, one may also conclude that the vocational group *did poorer* in chemistry than one or more of the other groups.

In 1947, Bicknell (2) studied the records of 337 freshmen. Based on their ACE scores and high school grades, the vocational group *did better* than predicted while the control group *did poorer* than expected in their first-quarter grade point average. Using a similar prediction technique, O'Brien (25) found that in his study of 184 freshmen, based on their ACE scores and their first-quarter English marks, the vocational group *did better* than expected in the beginning farm mechanics course. In contrast, the control group *did poorer* than expected. An analysis of co-variance showed a difference favoring the vocational group which was significant at a level higher than five per cent.

The remaining Iowa study, done by Fulton (15), in 1956, involved 237 students. With the final mark in the introductory farm mechanics course as a criterion, it was found that the vocational group *did significantly better* than did the nonvocational group.

Practically all the studies reviewed compared vocational and nonvocational boys in their achievements in a *college of agriculture*. In a very interesting variation, Long (20) in 1958, studied the scholastic achievement in the *freshman engineering curriculum* at Oregon State College of 90 students who had had two or more years of vocational agriculture. He found that the mean grade-point average for the vocational group in freshman engineering was 2.57 as compared with *2.36* for the control group, with 4.0 being the perfect grade-point average. This shows that the vocational group *did slightly better* than other freshmen students in engineering at Oregon State College.

Summary

Since 1929, a total of thirty-two investigations on the subject of how well former students of vocational agriculture have done in college have been reported in *Summaries of Studies in Agricultural Education*. The most common criteria for measuring achievement were grades in all college work after four years, grades in all college work after specified periods, grades in various *groups* of courses, and grades in specially selected *individual* courses. The records of more than *17,800* students in *twenty* states were analyzed in the thirty-two studies reviewed.

Table I shows a summary of the major findings revealed in the review. It can be noted that 53.8 per cent of the total number of findings showed that the vocational group did better than the nonvocational group, 36.6 per cent showed they did as well, and only 9.6 per cent showed that the vocational group did poorer than the nonvocational one. These results should be interpreted with the realization that the criteria for college success varied from study to study, as mentioned earlier in this article.

TABLE I

Summary of Major Findings of Thirty-two Studies, 1929-1958 on the College Success of Former Students of Vocational Agriculture

Classification	*Major Findings*	
	Number	*Per Cent*
Vocational group did better than nonvocational group	50	53.8
Vocational group did as well as nonvocational group	34	36.6
Vocational group did poorer than nonvocational group	9	9.6
TOTAL	93	100.0

Conclusion

The question with which this article began cannot be categorically answered in a yes or no fashion because of the various individual differences one would find among students. Nevertheless, the weight of the evidence presented above does seem to indicate that vocational students, taken as a group, seem generally to do either as well as or better than do nonvocational students in colleges of agriculture. Vocational agriculture seems to be equal to other high school programs as preparation for college. Certainly, there appears little basis for discriminating against vocational agriculture, and only poor grounds exist for counselling out of vocational agriculture those boys who aspire for professional careers in agriculture.

Furthermore, people enter the kind of college in which they are interested. Therefore, during their high school career, this interest should be developed, nurtured, maintained, and enhanced. The daily exposure to work in vocational agriculture can keep boys interested in things agricultural with the hopeful result that the college-bound student chooses to enroll in a college of agriculture. Surely, no other high school course is better fitted for this purpose than vocational agriculture.

Therefore, because of what the above studies show and because of his belief that the vocational agriculture course is the best one in high school for stimulating a boy's interest in agriculture, the author concludes that unless special circumstances mitigate against doing so, one can, with a great deal of confidence, advise a boy who wants to go to an agricul-

tural college to take vocational agriculture while in high school.

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Note: The number in parenthesis following each citation is the number given the study in the U.S. Office of Education "Summaries of Studies in Agricultural Education" Series, Bulletins 180, Supplement 1 to Bulletin 180, 237, 242, 246, 248, 251, 253, 256, 263, 265, 272, and 275.

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A working team - - -

Agricultural Colleges and High School Vocational Agriculture

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Walter T. Bjoraker

HIGH school departments of vocational agriculture and the colleges of agriculture *should* and *must* continue to operate as a working team. They have been noted for the high level of understanding that has existed between them throughout the years. However, occasional notes of discord are voiced by some people and this raises questions as to what should be the essence of this relationship. I believe that this relationship must be one of teamwork for the common good and for the good of all persons served by them. Why do I believe that this *should* and *can* be? For the answer, let us first examine these respective educational programs.

In the vocational agriculture program, in the high school, the study of agriculture is conducted through a course of study designed for prospective farmers. This offering is concerned with the educational experiences that contribute to the total development of the individual student enrolled. Actually, the study of science is fundamental in vocational agriculture. This offering provides a background of understanding and expands the experiences of the student as he studies the broad field of agriculture. In addition to the scientific study, both basic and applied, a student undergoes experiences in the management field. All this contributes to the total development of the individual as well as to his preparation as a prospective farmer. We must not fall into the pitfall of assuming that vocational agriculture was initiated to give all the education needed for agriculture. Most thinking people realize that it is not a terminal program, but a contributing program which may lead in any direction. A very common direction is that of further education in agriculture, whether it be in short courses offered by the colleges of agriculture or in the regular four-year collegiate course.

Bob Hiltbrand, former chapter FFA President, discussing his freshman program with Dean V. E. Kivlin.

If we look at the offerings in agriculture at the college level, it appears logical to divide the offerings into three broad areas. First, the study of science is basic. Then there are the studies contributing to the liberal education of the individual, and finally there are the professional courses necessary to prepare him for his chosen occupation. From this it appears that for those going to an agricultural college, the high school level experience is a natural preparation for the collegiate program. In fact, we find in practice that this is very definitely the case for a large number of students. An examination of the freshmen class at the University of Wisconsin, 1958-59, revealed that of the Agricultural College freshmen claiming the farm as a place of residence when enrolling, nearly 71 percent had been students in vocational agriculture. This would indicate a high degree of continuity in their educational experience. Several other studies have indicated that the vocational agriculture instructor has held a very significant role in the guidance which the student had received while making his decision to enroll as a student in the College of Agriculture.

The question often is raised, "What if the student enrolls in a college other than in agriculture?" What has been the role of vocational agriculture at the high school level in this student's preparation? I am concerned that college professors, as well as many other people, have been pointing at vocational agriculture as an influence that prevents "adequate" preparation of students for success in college. Research evidence indicates this is not so. Dr. Walton in the March, 1957, issue of the *Agricultural Education Magazine* in his article entitled, "Does Vocational Agriculture Prepare for College?" indicates that the great body of evidence in the U.S. concerning the quality of college performance on the part of students with vocational credits as compared to students with nonvocational credits is repetitious with such phrases as: "No significant difference, superior in agriculture, equal in other fields, vocational agriculture is as satisfactory as other curriculum for college preparation, no significant differences, former students of vocational agriculture excelled by one-third of a mark." It seems that a great number of self-designated spokesmen have ignored this evidence when they present the point of view that vocational agricul-

ture is a detriment to the college student.

Briefly, this cooperative working relationship is a "must" because each group needs the other for mutual benefit. Vocational agriculture needs the agricultural colleges: (1) as a source of teachers, (2) for the technical information that is made available to them, and (3) for the services that are performed for them. The colleges of agriculture in turn need the vocational agricultural program because: (1) they are a prime contact with prospective students, (2) because favorable attitudes are developed towards agriculture as an occupation at the high school level (if this is missed at this point, where can a favorable attitude be developed at a later date?), and (3) colleges find that departments of agriculture in the high schools are a great bridge in disseminating the latest research findings. For example, at the University of Wisconsin, the films developed by the Agricultural Journalism Department were developed with the vocational agriculture student in mind; and the use of these films by teachers of vocational agriculture far exceeded that of any other group.

In view of the school situations, it seems inconceivable that the vocational agriculture departments and the agricultural colleges should move in any direction other than that of even closer cooperation. □

Need More Vocational Agriculture in Missouri

Small School Districts Deny Many Missouri Farm Boys the Opportunity to take Vocational Agriculture

EARL T. CARPENTER, Graduate Student, Agricultural Education, University of Missouri

There are 20,649 rural boys in Missouri who would probably take vocational agriculture if they had the opportunity; however, only 12,075 attend schools where it is offered. And most of the boys denied this opportunity live in areas of the state offering the most and the best chances to commence farming. These findings were recently reported by the Department of Agricultural Education of the University of Missouri.

It has long been known that many students who later become farmers never receive instruction in vocational agriculture, and others who have received such instruction never have the opportunity to farm. These considerations prompted the attempt to determine the extent to which the program is available to the rural boys of Missouri.

The study was founded on the assumption that schools of similar size have a similar number of students who would enroll in vocational agriculture if the opportunity were universally available. The procedure, therefore, was simply one of calculating the per cent of high school students enrolled in these courses in each of several size of school groupings. These percentages were then applied to schools of like size which did not offer the courses. For example, 1,955 students attended schools offering vocational agriculture which enrolled fewer than 100 high school students. Of these, 801, or 40 per cent were boys enrolled in vocational agriculture. Thus, it was assumed that 40 per cent of the enrollment in all other high schools in the same size category would also elect to enroll in the courses if they had the opportunity. The enrollment for each such school was, therefore, multiplied by the factor (.40), and the resulting product was regarded as the number of "potential students" of vocational agriculture for that school. This procedure was repeated for the other sizes of schools; and data were then summarized by counties, type of farming areas, and for the state as a whole. All data were taken from records of the Missouri State Department of Education for the 1958-1959 school year. Schools known to have few rural boys were excluded from the study.

TABLE I

COMPARISON OF ENROLLMENTS AND PROBABLE ENROLLMENTS IN VOCATIONAL AGRICULTURE BETWEEN PUBLIC SCHOOLS OFFERING VOCATIONAL AGRICULTURE AND THOSE NOT OFFERING VOCATIONAL AGRICULTURE

Size of School	Schools Offering Vocational Agricultural				Schools Not Offering Vocational Agricultural		
	No. Schools	*Total Enrolled	Total Enrolled in Vo-Ag	Per Cent Enrolled in Vo-Ag	No. Schools	*Total Enrolled	Potential Vo-Ag Students
Less than 100	26	1995	801	40	125	8451	3381
100-199	91	13872	3876	28	77	10208	2859
200-299	64	15609	2954	19	22	5211	991
300-399	41	14417	2059	14	6	2471	347
400-499	14	6196	836	13	6	2637	344
500-599	11	5950	735	12	3	1588	192
600-699	6	3896	278	7	1	640	45
700-799	1	738	39	5	0		
800-899	4	3402	212	6	3	2535	152
900-999	1	982	36	4	1	970	39
1000-2500	3	3753	165	4	5	7463	299
2500 and up	1	4575	55	1	0		
Totals	**263	75385	***12000		249	42174	8649

* Boys and girls

** Three districts: Hayti, Charleston and Ralls County RI, have two departments of vocational agriculture. Warrensburg and Drumm Institute were not included in this study. Missouri schools operated 268 departments of vocational agriculture in 1958-1959.

*** Drumm Institute enrolled 29 students in vocational agriculture and Warrensburg 46. The total enrollment in vocational agriculture in Missouri in 1958-59 was 12,075.

Table I shows that a smaller per cent of the students in the larger schools enroll in vocational agriculture. This would be anticipated, of course, as a result of the expanded curricular offerings and the smaller per cent of farm boys in attendance. It is also apparent from Table I that most of the students not able to take these courses attend smaller schools. Of the 8,649 "potential students," 3,381 attend schools which are smaller than 100 in total enrollment; another 2,850 attend schools enrolling between 100 and 199 students in high school. Schools of these two sizes account for 72 per cent of those denied the opportunity to take vocational agriculture.

Perhaps most revealing of all from this study is the geographical distribution of the students who are denied the vocational courses in agriculture. Figure 1 indicates the number of "potential students" attending schools not offering the program in each Missouri county. Many of the better agricultural counties in North Missouri and Western Missouri have enough students for three, four, or even more, additional departments of vocational agriculture.

It was recognized that there are limitations to a study of this sort. The indicated number of "potential students" is dependent upon a constant size of school. It is more likely, of course, that re-organization of school districts will continue. As schools become larger, the number electing vocational agriculture will become smaller than indicated by these calculations due to the broader curricular offerings which generally accompany school enlargement. The net result of this should be more of the "right" boys, i.e., those who will become farmers, enrolled in vocational agriculture even though the total number will likely be less than indicated in the study.

The study did show conclusively that there are many boys who are denied vocational education in agriculture because of the limited offerings of the school districts in which they happen to reside. Many of these students become farm operators without the benefit of these courses. It is due to the manner in which farm tenure is currently acquired that these students compete successfully with those who have received instruction in agriculture for opportunities on the farm. Vocational agriculture is under a great handicap in trying to establish a high percentage of its graduates in farming when it is serving less than 60 per cent of the right boys. □

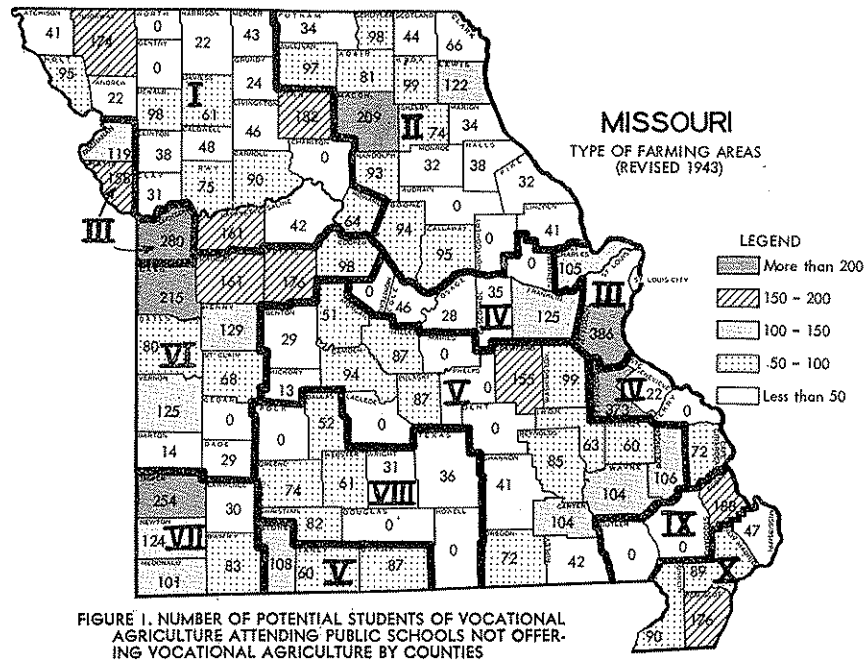


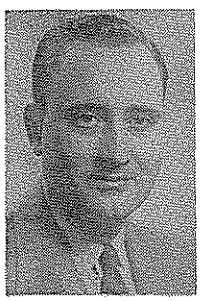
FIGURE 1. NUMBER OF POTENTIAL STUDENTS OF VOCATIONAL AGRICULTURE ATTENDING PUBLIC SCHOOLS NOT OFFERING VOCATIONAL AGRICULTURE BY COUNTIES

The role of - - -

A College-Agricultural Teacher Advisory Committee

JOE P. BAIL, Teacher Education, Cornell University

Organization and Purposes



Joe P. Bail

THE importance of teachers of agriculture as members of the team providing agricultural education to the citizens of a state cannot be overlooked. In an effort to develop closer working relationships with the College of Agriculture at Cornell University, a College-Agricultural Teacher Advisory Committee was established. The membership consists of the following: three teachers of agriculture appointed by the Association of Teachers of Agriculture of New York, three members of the College of Agriculture appointed by the Dean of the College, one supervisor appointed by the Chief of the Bureau of Agricultural Education, the Head of the Agricultural Education Division appointed by the Dean and serving as chairman, and the Instructional Materials Specialist who is secretary and ex-officio member of the committee. Members serve at the will and pleasure of the appointing agency or head.

The purposes of the committee were set forth as follows:

1. To aid in creating a mutual understanding of each other's program.
2. To advise the College of Agriculture relative to services they might render to teachers of agriculture.
3. To advise on instructional materials for teachers of agriculture.
4. To consider problems submitted by members of the committee representing the various groups relative to vocational agriculture or college activities, programs, and offerings affecting vocational agriculture.

Accomplishments

During the two years of existence, the committee has dealt with a variety of problems. Chief among these were:

1. Activities and programs for agricultural students during the annual Farm and Home Week.
2. Agricultural college entrance requirements and the guiding of high school pupils into voca-

tional agriculture.

3. Off-campus courses for teachers of agriculture.
4. Graduate program in agricultural education for teachers.
5. Role of teachers of agriculture in cooperating with the admissions counselor of the College of Agriculture.
6. Relationship of teachers of agriculture to other groups and agencies.
7. Instructional materials for teachers of agriculture.

As a result of the discussions on these topics, suggested practices and recommendations were made to the groups concerned. Various special activities were set up and carried out by teachers of agriculture and by the College of Agriculture as a result.

Advantages of the Committee

Several advantages seem to accrue as a result of having a College-Agricultural Teacher Advisory Committee. Teachers have cited the following:

1. They feel that the college is more cognizant of the work of the teacher of agriculture.
2. Teachers have opportunity to present problems directly to a group which is concerned with aiding them to do an improved job of teaching.
3. The teachers feel that they are a part of the college and that their needs and interest are not being overlooked.

Members of the college staff have expressed satisfaction with the work of the committee. Specifically, they have stated that:

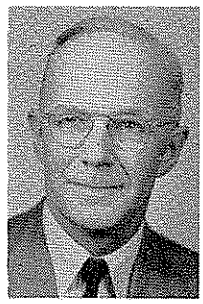
1. The committee provides an orderly channel for directing questions or problems relating to vocational agriculture.
2. The college is in a better position to serve the teacher of agriculture by being aware of the program of agricultural education in the public schools.
3. The college is also interested in securing the opinions and advice of this large group of alumni relative to the work of the College of Agriculture.

And lastly, representatives of all groups have found that when the opportunity is provided to sit down and air problems, reasonable solutions can be arrived at. After all, both groups are concerned with providing a sound educational program for their constituents. Mutual respect and understanding has been the greatest gain from such a group. □

Adjusting Vocational Agriculture Programs

to changes in agriculture

LOUIS M. SASMAN, Supervisor, Wisconsin



Louis M. Sasman

"AGRICULTURE at the Cross Roads" was a widely read book in agricultural circles about thirty years ago. Agriculture today is again at the crossroads, as are all of us whether we are engaged in agriculture or not. The world is immersed in a process of continual, rapid, and accelerating change.

Coupled with the changes, at least in the United States, whether as a cause or an effect, is an extreme nervousness and anxiety which causes difficulty in the development of sane judgments.

Vocational agricultural education is deeply involved in this situation. It is under critical scrutiny by both friends and foes of vocational education and of public schooling. Workers in vocational agriculture are under all sorts of pressures and have been besieged by a wide variety of ideas regarding the continued development of farming, agriculture, and agricultural education.

The following developments are, it seems to me, as certain as anything can be:

- Farming will continue to be the basic occupation of a large number, even though a declining percentage, of the population.
- Agricultural service occupations will continue to require an increasing number of workers.
- Farming will continue to become more technical, to require an increasing investment in land, buildings and equipment, and constantly to require ever increasing knowledge and skill of farm operators.
- The percentage of farm youth which will have the opportunity to become established in farming will continue to decrease.
- Schools will continue to increase in size with the enrollment of a decreasing percentage but, in many cases, an increasing number of farm youth.
- Urban youth and nonfarm rural youth will comprise, in most cases, the larger percentage of school enrollments.
- In addition, the following developments are probable:
  - —There will be increased amounts of federal aid for schooling.
  - —These aids will have a material effect upon school curricula.
  - —"Guidance" services will strongly affect school decisions of parents and pupils.

The following adjustments in the program of vocational agriculture will then be necessary:

- Instructors in vocational agriculture, or at least some of them, will need to be more specifically prepared than they have been in the past.
- Especially where programs are conducted "for those who have entered upon the occupations of the farm," the teacher load will have to be restricted so that the instructor can give individual and group instruction based upon thorough knowledge of the problems of his students.
- Vocational agriculture, trade and industry and distributive occupations will need to share some responsibility for training for nonfarm, agricultural occupations (realizing that it is not feasible to provide specific training for all occuptions).
- There will need to be some specific correlation of agricultural extension and vocational agriculture from the national level through the states, and to the local communities, to provide the most effective and efficient use of personnel. (This will not necessarily require legislative action.)
- Vocational agriculture will probably either become more truly vocational than it has been or else consist of two more or less separate systems: one system designed for those who are preparing to enter upon agricultural occupations, and one system "designed for those who have entered upon the occupations of the farm."

If these things come to pass, it

will be necessary to return to one of the basic assumptions of the federal vocational education acts: that vocational education because of the inherent pupil-load limitations of the instructor is more expensive than general education and there must be some increased means of equalizing these costs on a national level. □

Why Former Teachers of Vocational Agriculture in North Dakota Left the Profession

LEO VOSSLER, Vo-Ag Instructor, Parshall, N. Dak. and MARTIN AASER, Vo-Ag Instructor, Lakota, N. Dak.

What prompted teachers of vocational agriculture to leave the profession in North Dakota? The answer to this was sought by the North Dakota Vocational Agriculture Teachers' Association and made a part of their program of work for the year 1957-58. The study was assigned to the authors, who in turn surveyed the men who had left the profession and compiled the answers in the following report.

What reasons did former instructors give for leaving the profession? To determine this, a two-page questionnaire was mailed to former teachers of vocational agriculture who had left the profession since 1947. Since 1947, 62 men had left the profession. Of the 62 who had left, the addresses of 54 were obtained and questionnaires were mailed to these men. Forty-four questionnaires were returned either in time or were complete enough to be usable. The former teachers were asked to check from a list of factors the ones which influenced them in leaving the profession. After checking the list, they were asked to go back over the factors checked and rank them in order of importance, i.e., (1) before the factor most important, (2) before the factor next most important, (3) before the third most important factor. Blank spaces were left for writing in other factors which influenced them to leave. Some teachers listed as few as two factors, while one listed eleven.

TABLE I

WHY TEACHERS OF VOCATIONAL AGRICULTURE LEFT THE PROFESSION

Reason given for leaving	Reason Ranked								
	1st	2nd	3rd	4th	5th	6th	7th	Mentioned	Total
1. Training inadequate for vo-ag	2	1	0	1	0	0	0	0	4
2. Limited opportunity for advancement	13	8	4	1	5	2	0	0	33
3. Salary not commensurate with work	2	6	5	6	2	2	0	0	23
4. Living conditions undesirable	1	2	1	2	1	1	0	0	8
5. Work not challenging	1	0	0	0	0	0	0	0	1
6. Work day too long	2	3	1	2	0	0	0	0	8
7. Not satisfied with opportunities offered family	2	1	1	0	2	0	0	0	6
8. School administration unsympathetic to vo-ag	4	2	1	0	0	0	1	0	8
9. Students difficult to manage	0	1	2	0	1	0	1	0	5
10. Uncertainty of employment	2	2	4	1	1	0	1		11
11. Desire for a more permanent home	2	5	4	2	1	1	1	0	16
12. Didn't enjoy teaching	3	2	0	0	0	2	0	0	7
13. Retirement plan inadequate	0	3	1	2	0	1	1	0	8
14. Too many extra curricular activities and community responsibilities	1	0	2	3	6	0	2	0	14
15. Health	0	3	0	0	0	0	0	0	3
16. Facilities not adequate for vo-ag	1	0	3	4	1	1	0	0	10
17. Not satisfied with state administrative policies	3	0	0	4	1	1	0	0	9

Table I is a summary of the factors listed as reasons for leaving. Reasons most often mentioned for leaving were:

a. Limited opportunity for advancement (mentioned 33 times) (13 men gave it as their number one reason).
b. Salary not commensurate with work (mentioned 23 times).
c. Desire for a more permanent home (mentioned 16 times).
d. Too many extra-curricular activities and community responsibilities (mentioned 14 times).
e. Uncertainty of employment (11 times).
f. Facilities not adequate for vo-ag (mentioned 10 times).

Other reasons mentioned for leaving but not tabulated in the accompanying table included such statements as:

1. Too many contests.
2. Couldn't teach enough people.
3. Enjoy the challenge of working for myself.
4. Frowning of local and state administrative people on side earnings from other activities.
5. Couldn't relax from the pressures of the job.
6. Too much paper for the importance of it.
7. Results of work too slow in appearing.
8. Need two men in each department to cut down ulcers, do a

good job and have a decent family life.

9. Failed to adjust from teaching adults to high school students.
10. Too small percentage of vo-ag students entering farming—need other subjects more.

How long did these former teachers work in the field of vocational agriculture? It was found that the greatest majority left the field before they had completed five years of service. Another question then presented itself. Did these men intend to teach vo-ag as a lifetime occupation? Fifty-six percent of the men surveyed indicated that they planned teaching as a career while 31% indicated they planned to use teaching as a "stepping stone" to something else. The other 13% were uncertain as to whether they wanted to teach as a lifetime career.

The attitude of the men leaving the field was another question which needed answering. Would they advise young men to enter the field of vocational agriculture? Table II gives evidence that a majority of the men surveyed were well pleased with their training and experience in vocational agriculture and would advise young men to enter the profession as a stepping stone, if they intend to return to the farm, and as a lifetime profession.

The study also indicated that most former teachers did not receive a large financial increment when going into another profession. Some received a smaller salary. However, the survey indicated that salaries and income of the men increased somewhat faster in their new jobs. The average earnings of the former teachers in 1958 were $6922, while the average salary of vo-ag teachers in N. Dakota was $5269 for the same period. The average earnings of the former instructors were increased somewhat by several individuals who earned large incomes by establishing successful businesses of their own.

TABLE II

WHAT DO FORMER TEACHERS THINK OF ADVISING YOUNG MEN TO ENTER THE PROFESSION OF TEACHING VOCATIONAL AGRICULTURE?

Possible uses of training for teaching profession	Yes	No	No comment
Plans on teaching vo-ag as a lifetime profession	28	13	1
Plans on using it as a "stepping stone" to some other vocation or profession	36	6	1
Plans ultimately to return to farm	32	7	1

In summary, the findings of this study suggest a number of important conclusions and implications. Some of the major ones are:

1. Generally speaking, former teachers of vocational agriculture changed to work closely related to agriculture and teaching.
2. Experience and training secured as a teacher in most cases were of great value in the new work.
3. Abilities acquired in the teaching of vocational agriculture which contributed most to the person's success in his new work were the combined abilities to "understand people" and "to get along with people."
4. Limited opportunities for advancement was the major reason given for leaving the teaching profession.
5. A majority of the men surveyed thought enough of the experience and training secured in the teaching of vocational agriculture that they would advise young men with farm backgrounds and average or above abilities to enter the profession of teaching vocational agriculture. □

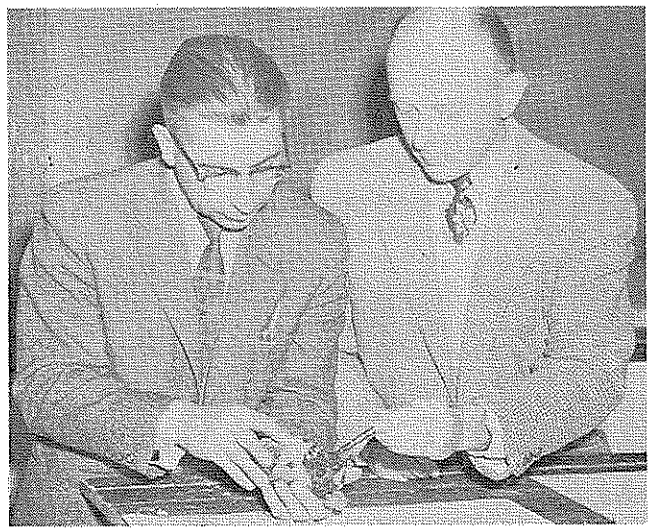
A look into - - -

The Place of Television in Vocational Agriculture

LYLE WICKS, Vo-Ag Instructor, Gouverneur, N. Y.

Lyle L. Wicks

TELEVISION, to be considered a successful educational medium, must present information that cannot normally be made available through the usual classroom or laboratory facilities. Its usefulness must be measured in terms of educational values. Failure to meet those standards essential to effective teaching will tend to nullify some of the advantages to be gained through the use of TV as a means of instruction. If a note of pessimism is observed in this introduction, you are thinking along with me. If you have suffered with disturbing dreams of being replaced by a 24-inch screen, then relax! Our experiences in teaching a unit in vocational agriculture over television has reaffirmed our opinion of the need for flesh and blood as a permanent fixture in the classroom.



(Photo by E. R. Heuvelton)

Ralph Work, Soil Scientist with the S.C.S. in Canton, N. Y., is explaining a local rock formation to Lyle Wicks.

Perhaps it would be best to brief you on the background of this TV series. Since agriculture is one of the mainstays of the North country of New York State, a committee of Vo-Ag teachers from the St. Lawrence County group was selected last fall to work with the St. Lawrence Educational Television Council to develop a series of programs dealing with some phase of agriculture. We selected the topic, SOILS, THEIR ORIGIN, CHARACTER AND USE.

Over a period of six weeks, at the rate of one-half hour per week, we traced the earth from a ball of flaming gases through tomorrow's conservation practices. Since it had taken some millions of years to accomplish this the first time, our feat was considered by some of our critics as being the outstanding feature of the show.

From the standpoint of the experiences gained, the series provided an opportunity for teachers. The comments would have been most gratifying, I am sure, had the programs been presented in a classroom with live teachers and a live audience. The instructors in charge of the various programs spent long hours in preparing drawings, pull-outs, demonstrations and many other devices to describe and portray the properties and uses of soil. The Agronomy Department at Cornell University, the Extension and Conservation services, and the TV program directors gave freely of time and materials to aid the cause.

It would be grossly unfair to my colleagues who worked with me and to the director of the TV educational series to leave the impression that our efforts were to no avail. Some of the demonstrations in the areas of the causes and effects of erosion and on the needs of plants for food and its utilization were excellent. Those students who were able to view the programs should have acquired an understanding of soil processes which they will not soon forget. But the number of students and teachers viewing the series was low in relation to the potential. Some of the audience voiced comments which, while not derogatory, were a far cry from enthusiastic. Our committee has made inquiries and given serious thought in an effort to arrive at reasonable answers to certain basic questions. First, "Does television have a place in the vocational agriculture education program?" Secondly, "What limitations exist which must be overcome before education by means of television will become an accepted means of teaching in vocational agriculture?"

Place of TV in Vo-Ag

It will be recalled that a statement was made at the outset contending that for television to have a place in education, it must present worthwhile material of a type or in a manner which cannot be duplicated by any other reasonably accessible teaching device. I doubt whether a study of soils would meet this test. Frankly, I would be hard pressed to come up with many subject areas which could not be more effectively presented by such means as field trips, demonstrations, flannel boards, movies, slides, or just plain old-fashioned classroom instruction. Television is simply another means of audio-visual presentation. Professional actors are in agreement that it is the most difficult medium in use in the field of entertainment. Unlike moving pictures, there is no opportunity for revision unless the production is filmed and run at a later date. This not only adds to the expense but takes away some of the value of presenting material in this manner. Hundreds of movies are available in almost every subject area. Many have been filmed with professional talent; they are in color and have been carefully edited. They can be obtained for showing when they best fit into the teaching program and can be re-run, stopped, started and re-shown according to the needs of the class.

How, then, can television be used? It certainly has a place in providing an opportunity for Vo-Ag students to see and hear messages presented by agricultural and government leaders on subjects which may have an important bearing on the present or future status of the farming business. New developments in animal management, crop production and machinery could be presented while the information is still news and is not yet readily available through the usual channels. Yes, television may have a place in teaching boys who are training in agriculture but it is extremely doubtful whether it can be used to replace subject matter presentation through existing teaching methods.

Problems and Limitations

Now for the second question, "What are the problems and limitations?" We ran head on into at least a dozen, a few of which were real obstacles.

Percentage wise, the number of students taking vocational agriculture is small in terms of the whole student body. To justify the time and expense, consideration must be given to the selection of topics which will be of interest to boys and girls in other areas such as biology and earth science.

The programs must obtain the unqualified approval of all school administrations within the viewing area. Time must be set aside and facilities made available so that *all* of the schools can view the program. Since class schedules for different schools are seldom the same, a successful compromise on this point would fall little short of a miracle.

Course calendars vary with different departments. Not all teachers of agriculture would be willing to set aside the job at hand to consider a topic in which there existed no particular degree of interest in their group.

Adequate lesson plans and follow-up discussions may be difficult to develop. The argument has been presented that television has a use in presenting information about which the teacher is poorly informed. It hardly seems reasonable that on that basis he could be considered well qualified to lead a discussion on the subject matter under consideration.

Our generation has been reared on the assumption that television is a means of entertainment. This could be a bigger mental block than most of us realize. To create and maintain student attention, there must be a good portion of showmanship. Programs within the field of agriculture are a far cry from dancing girls, juggling acts and gun-slinging cowboys.

Conclusions

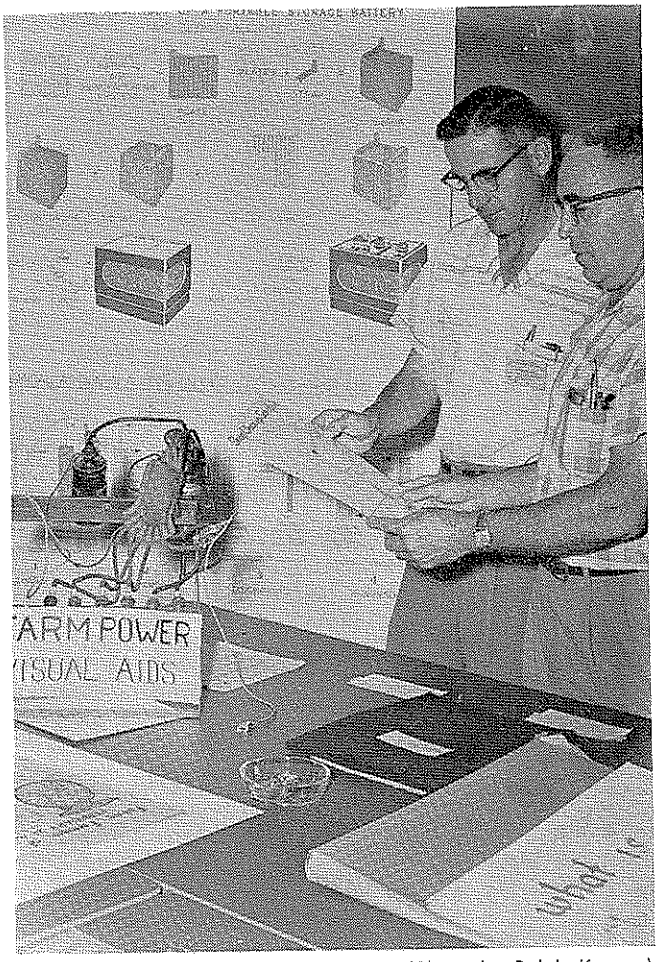
These are some of the major obstacles. The safest conclusion is to suggest that they are tough but not insurmountable. It has been proven that education through television does have a place in areas of high population concentration and when the material presented carries values for a large percentage of the student body. Extension services have found it to be a valuable aid in getting information into rural areas as a substitute for classroom instruction. But in the area of vocational agriculture our advice based on our limited experience is to proceed slowly. There still remains a great need for experimentation directed toward solving some of the problems which presently limit the effectiveness of educational TV in vocational agriculture. □

— Correction —

F. Marcus and L. Freeh, authors of the article "Student Exchange Program" published in December, are both associated with Michigan State University.

(Photo by Ralph Kramer)

Instructors of vocational agriculture in Wisconsin, during their annual 1959 summer conference workshop session, discussed the use of local resources in teaching and became more familiar with the use of a vugraph in teaching. Instructors, left to right, are Al Weber of Stoughton; John Perkins of Neillsville; Theodore Hillert of Tomah; Clifford Nenzel of Stanley; George Sledge of the University of Wisconsin; and Ray Gilbertson of Stevens Point.



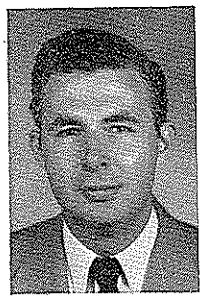
(Photo by Ralph Kramer)

Kenneth Wall, the WAVAI president during 1958-59, and N. C. Nicholson, the vocational agriculture instructor at Hartford, Wisconsin, view some of the locally-developed teaching aids on display during the 1959 annual summer conference which was held on the University of Wisconsin Campus, Madison.

What use have you made of - - -

Local Resources in Teaching Vocational Agriculture

GEORGE W. SLEDGE, Teacher Education, University of Wisconsin



George W. Sledge

IDEALLY, instruction in vocational agriculture has been closely associated with the problems and needs of individuals in *their* local communities. This community concept of education in agriculture necessitates the understanding, appreciation, and use of local resources if vocational instruction is to be most meaningful.

A wealth of resources in teaching vocational agriculture is available in each community across our nation. Used or not—the reservoir of these valuable aids exists. One definition of a "resource" is a new or reserve source of supply or support. A local resource, therefore, becomes the new or reserve source of supply or support available in many forms at the local school community level, useful in the teaching-learning process. Essentially, by effective use of these local resources, instruction can be more meaningful for high school agricultural students, young farmers and adult farmers.

Involved in the interpretation of a local resource are a number of important elements. Considering that a resource can be (1) a new source of supply, (2) a reserve source of supply, (3) a new source of support, or (4) a reserve source of support, the ultimate scope of local resources in teaching becomes tremendous. These resources can be in the form of human support or in a non-human form of supply of teaching materials and aids. The number and varieties of support and supply for an instructor from teaching assistants and teaching aids almost become endless when interpreted in this light.

Why Use Local Resources?

There must be a reason—a purpose—when and if an instructor uses local resources in teaching. Among these reasons are the following: A local resource—

1. Stimulates student interest and aids in retention of new information associated with the local resource.
2. Stimulates development of understandings and attitudes.
3. Contributes to learning more effectively since the student perceives through several sensory mechanisms—the eye by seeing—the ear by hearing—the experiencing by doing "something" with or about the local resource.
4. Pertains to local problems and consequently meets immediate "felt needs" of the individual and, through skillful direction by the instructor, can be an asset in helping individuals recognize problems and needs which previously might have been "unfelt." This perception of need is essential to expediting the desirable change in behavior in individuals—if we are concerned with being effective in teaching, and indeed we are!
5. Begins with the "Known"—and a part of the individual student's environment, and makes possible the application of the oft repeated principle of "taking the individual from where he is—to where he desires to go."
6. Allows the individual: identification—association—with the resource

—therefore recognition and awareness of the need for change.

As the local DIRECTOR OF LEARNING, the local instructor should know why, how, and when each resource will be used in his instructional program.

When to Use Local Resources

The only generalized and sound response to this question of when to use local resources would be—AT EVERY OPPORTUNE TIME. "Opportune" time would be interpreted to mean *whenever learning would be enhanced by their use*—whether the instructor is teaching a manipulative skill, a problem involving a solution and a decision to be made, or developing favorable attitudes, understandings and appreciations. Dependent upon the community, the instructional needs in relation to the local teaching resources available, and the awareness of the instructor of the "potential energy" stored in the local resources, an instructor would, no doubt, use local resources throughout the entire year with each and every organized class as well as frequently in consultation with individuals in personal, face-to-face relationships.

Which Resources to Use

Perhaps it would be wise to suggest certain criteria if a logical answer as to which resources should be used can be established. Some general criteria which might be applied to local resources include:

1. *Appropriateness*—the local resource can be characterized as having adaptability—it adapts itself specifically for the community; yet because of the principles involved in its use, the application of that which is learned becomes more universal, useful and adaptable—therefore appropriate for educational use.
2. *Practicality*—the local resource can be obtained with reasonable or no cost and is readily available for use in the organized, systematic courses of study.
3. *Motivational qualities*—the local resource would enhance and reinforce learning under the direction of the instructor.
4. *Perceptible*—the local resource can be perceived in such a manner that it is either consciously or unconsciously a part of the physical and psychological environment of of the individual learner—to provide focus and to develop meaning for subject materials in a familiar setting.
5. *Understandable*—the local resource communicates the basic, intended message which contributes to the learning of individuals.
6. *Thought provoking*—the local resource effectively used will be a source of creative thought—a stimulus to further the developmental processes of the learner.
7. *Operational*—the local resource has possible perpetual usage, not necessarily consumed in its usage, thereby being functional over time as a new or reserve source of support or supply. Time of instructor is saved over the years if resources are constantly, or with ease, available and operational with limited additional preparation.

These, and other criteria, applied to available local resources will reveal numerous "teaching assistants and teaching aids and materials" in communities served by vocational agriculture. Attention must be focused on the principle that the useage of *particular local resources* should be dependent upon WHICH ONES, when properly used, will contribute most in ACHIEVING THE EDUCATIONAL OBJECTIVES IN THE LOCAL COMMUNITY.

No attempt will be made to provide an exhaustive list of resources generally available in local communities. An attempt, however, to point out through illustrations the general types of resources at the disposal of instructors is made.

Resources may take the form of *verbal contributions*, i.e., *support* a position taken or an action planned by the instructor; or *supply* information, insight, experiences, and understanding. Resources might also take the form of audio-visuals, i.e., aids to the teaching-learning process; "anything" to be seen, heard, felt, or otherwise experienced. Still another form or type of resource is reflected by institutions, businesses, and the like which involves a fundamental concept that might be desirably taught; i.e., a conceptualization of a farm business, or efficient farm management, of cooperative actions, and evaluation.

Some Local Resources

Local resources—the human type—are illustrated by the leading farmer who is capable of aiding the instructor in some way. It might be that he provides a class of dairy cattle for judging experiences with high school groups or participating in trial plot tests in commercial fertilizer use. The local feed dealer could supply up-to-date price quotations for computation of feed costs of locally produced or home grown feeds or supply samples of feed products for use in a classroom teaching situation. The local lawyer might assist in teaching a farm law unit to adult farmers, serving as a resource person on highly technical points of law. The local banker might discuss with a senior farm management class on farm credit problems, mortgage provisions, and a host of other financial matters. The rural school teacher can supply the instructor with a list of eighth grade graduates interested in enrolling in vocational agriculture.

Other individuals, such as the local seed dealer who could supply seed samples or seed tags, can be instrumental in helping the local instructor provide the most effective instruction possible. From various professions, businesses, and vocations, there exist representatives who would gladly aid the local instructor if given the opportunity. Among them would typically be such persons as: the local farm machinery dealer, the rural electrification representative, the druggist, the co-op manager, the forestry specialist, the nurseryman, the hatcheryman, the county agricultural agent, the soil conservationist, the local welding shop operator, the local newspaper editor, the departmental advisory committee, the TV farm program director, the local locker plant manager, the local stockyard operator, the insurance agent, and the local veterinarian. Obviously, this is no complete list of the types of individuals in various businesses and walks of life who, by one way or another, are interrelated with the problems and needs of individuals receiving vocational agriculture instruction and who can assist in this function in some logical procedure. Regardless of the resource persons or aids utilized, the local instructor is charged with the responsibility of providing sound instruction which will help accomplish the educational objectives of the local program. Within this framework, the local instructor becomes the determiner of which local resources are to be used.

Some of the apparent resources available and long-used by instructors are physical ones—not human. The different soils in the community —or in profile mounts—furnish a wealth of instructional background and adaptation. The relation of plant

growth and development under various fertility practices, with a scientific knowledge of soils, can enable the instructor and his students to replace "chance in farming" with technology unknown in days gone by. Plants grown in the community, either in their germination and growth phases or in preserved specimen mounts, can be effectively used throughout the year. For example, a field of alfalfa might be used to show boron deficiency symptoms. Animals, of all kinds and types, provide a ready access of instructional aids. Records on production of dairy cattle, over a period of time—under known and recorded conditions, could serve as a "backdrop" to the study of feeds and feeding or as a means of motivation of increased production and greater feeding efficiency. A host of other types of physical resources awaits the use of the observant instructor, i.e., machinery and equipment, chemicals, fertilizers, insecticides, insects, disease specimens, weeds, seeds, orchards, gardens, school forests and farms, and the supervised farming programs of his students to mention a few. In addition to these, the instructor has general access to these and other resources of which he can make 2 x 2 slides, black and white photographs, charts and graphs, clippings, recordings, posters, and mountings; or he might otherwise use them in conducting field trips, open houses, and in preparation of fair exhibits, radio and TV productions.

Education—the function of the instructor of vocational agriculture—is effective when it becomes a part of the learner. The instructor of vocational agriculture by using local resources effectively can help create an environment, physically and psychologically, which will allow for effective teaching and learning. □

Evaluation of Farm Educational Programs of Electric Power Suppliers in the United States

ELWOOD F. OLVER, Dept. of Agric. Engin., Pennsylvania State University

The United States with only 6% of the world's population uses 41% of the world's electric power. Well over 95% of the farmers in the United States have electricity and practically all farmers have electricity who want it.

The ever increasing use of electrical equipment on our farms creates a growing need for farmers to be able to use this commodity wisely. Conservation of our natural resources as well as the farmer's economic welfare emphasizes the need to curb waste of electrical energy. The most effective way to provide our farm consumers of electrical energy with the knowledge they need to make the best use of these electrical servants is to raise the standards of our educational programs. In this way farmers will learn how to apply electric power most efficiently and effectively to increase farm production and make farm living more enjoyable.

The author has been in rural electrification work for many years with The Pennsylvania State University and in industry with the Iowa Rural Electric Cooperative Association and The Pennsylvania Power and Light Company. Due to his intense interest in farm electrification, he made a study of power supplier farm programs throughout the United States in 1957 at The Iowa State University. At that time it was the Iowa State College.

The objective of this study was to summarize, compare, and evaluate the practices in prevailing farm educational programs of power suppliers in the United States and to point out worthwhile implications to suppliers. Usable returns from questionnaires were obtained from suppliers that served over 90% of the total electrified farms in the United States. The returned questionnaires used were from 485 cooperatives, 41 municipals and 127 utilities.

The value of this study might be to encourage better programs and in having a coordinating effect on many existing programs. Better farm programs could mean more farm and power suppliers profits, strengthening of the agricultural economy and eventual lowering of electric rates.

The Middle Atlantic region had the larger power suppliers and the better programs. Larger suppliers tended to have the better programs whereas the type of organization as cooperatives, municipals and utilities showed little relationship to the quality of program. Many agricultural development programs were reported which, with few exceptions, were carried on by the suppliers with superior programs.

The practices generally included in the better programs were used in the following order: giving technical advice to farm consumers, work with high school teachers, dealers encouragement, work with farm youth and sales promotion. The use of these practices varied little with the size of organization or from region to region, but the better programs tended to use them.

The standards by which the suppliers judged the success of their programs in the order of occurrence were: revenue increase, consumer goodwill, fulfillment of organization's responsibility to farm consumers, appliance surveys, sales increase and farm visits. The better programs tended to adhere to all six of these standards.

The techniques most widely used by suppliers to increase consumption in the order of occurrence were: dealer cooperation, use of an incentive rate, sending of literature, sales promotions, free electricity for certain purchases, appliance trials and others. All techniques tended to be used by the better farm programs.

The utilities did much more merchandising than did the other types of organizations. The larger suppliers and those with better programs tended to merchandise major and minor items.

Most of the cooperatives, but few of the municipals and utilities, sent an interorganizational publication to consumers. The monthly publication was most popular, but the larger suppliers and those with the better programs sent them less frequently.

The larger power suppliers and those with the better programs tended to use such farm program aids as cameras, movie and slide projectors, commercial films, flannel boards and current farm literature in this order.

The advisers of over 50% of the suppliers made yearly visits in the following order of preference to:

county extension personnel, electric dealers, vocational agriculture teachers, newspaper editors and key farmers. The larger suppliers and those with the better programs tended to employ the activities of advising farmers, settling farmer complaints and promoting dealer sales and farm electric loads.

The larger suppliers tended to have their advisers participating in county extension, vocational agriculture and electrical organization meetings. Over three-fourths of the suppliers had advisers giving farm meeting talks and well over half the suppliers sponsored such meetings.

In summary, suppliers, at the time of this study, were placing great emphasis upon a farm educational program. A power supplier will be able to enhance the quality of its program by noting the techniques and practices prevailing in the more satisfactory programs now in existence. □

"Live or Tape"

A new kind of resource for teaching

A. J. PAULUS,
Subject Matter Specialist,
University of Tennessee
J. R. WARMBROD, Vo-Ag Instructor,
Winchester, Tennessee

Have you ever wanted to use a resource person for an adult farmer class but found that he was not available? Perhaps he was a specialist at the State University some 200 miles away, or maybe he was a farmer in the community who could not attend the class due to other commitments. In either case you now have an alternative. To borrow a phrase from the television industry—"If you can't get them live, put them on tape."

This was our problem in an adult farmer class last year. We were studying agricultural economic problems and wanted some needed information on preparing income tax returns. We decided that our State University would be our best source, so we wrote our agricultural education subject matter specialist to check that end for us. We offered to send him a list of questions from the group and a tape to record the interviewer if he could arrange it. His answer reached us in time for the next meeting of the class and was just what we wanted to hear.

With high hopes we prepared a list of questions the way we wanted them asked and placed them in the mail. Before time for the next class the tape was back with our own questions, the specialist's answers and some suggested page references. Holding farmer attention was no problem at that meeting. We took the questions one at a time with plenty of discussion before going to the next one. Some we played back several times. We found the experience most satisfying.

We now feel that a tape recording will be of greatest value for an adult farmer class if it includes specific information that the class members desire. Farmers will not be interested in hearing a recording of some specialist "talking," but they will appreciate a recording where this same specialist answers the questions they have raised during class discussions. For this reason, the class members must formulate a list of questions they wish the resource person to answer. This list of questions can be made during the class by the instructor listing the questions on the chalkboard as they come from the class members. The instructor can then combine similar questions, clarify wording, and arrange them in proper order to arrive at the final list that will be used during the interview. The adult class members should be involved to the greatest extent possible in selecting the resource person or persons to be interviewed. The recording should include both the questions as asked by the instructor and the answers of the resource person.

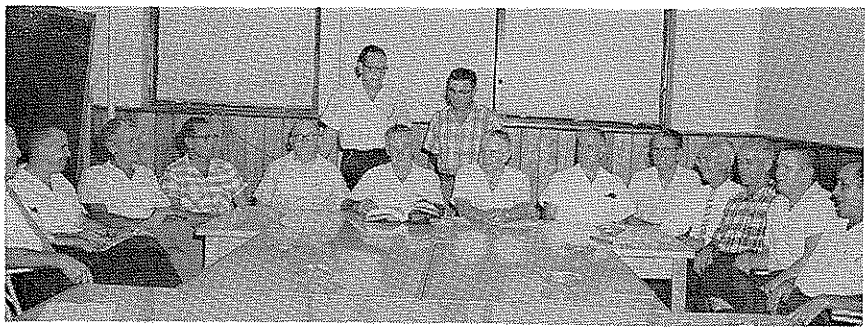
The instructor is now armed with the material needed for an interesting and informative class session. Since this is the "pay off" step in the procedure, careful plans must be made for an effective presentation. Each class member should be furnished a mimeographed list of the questions that were used in the interview. In preparing this list of questions, it is helpful to leave some blank space after each question which may be used by the class members in making notes as the recording is played and during the resulting class discussion.

The instructor should lead the class in a discussion including the adequacy of the resource person's comments, the applicability of the solutions and proposals given, discrepancies or omissions in the comments, and the feasibility of the solutions proposed. Further questions that arise should be noted by the instructor. Provision should be made for obtaining further comments from the resource person that the group needs and wants.

It is apparent that the use of tape recordings in securing the services of resource persons is advantageous in teaching adult farmers. First of all it is a unique teaching procedure where information is presented in a different, interesting, and effective manner. By the use of tape recordings, information and the services of resource persons are made available to the class that would not be available if the resource person had to appear in person. The procedure also allows the instructor and class to exercise more control over the comments of the resource person than when he is personally present. The class exercises control over the comments of the resource person by defining precisely the topics or questions to be discussed. Then, of course, the class can very easily turn off the recorder if, in their opinion, the comments are out of line. Perhaps both the resource person in his comments and the farmers in their reactions to the comments will be more objective and to the point than might be the case in face to face discussion.

Drawbacks to the procedure are evident also. The resource person's comments can easily be misunderstood since he is not present to clarify misleading interpretations by the instructor or the farmers. Immediate answers are not available to any further questions raised as is the case when he is present. It would not be practical for the subject matter specialist on the teacher training staff to handle large numbers of requests for assistance with recordings. For this reason recordings must be limited in number but should be brought in often enough to take advantage of their special motivating value.

Most teachers of vocational agriculture now have access to a tape recorder either in the vocational agriculture department or in the school, thereby eliminating the problem of securing a recorder. Like any good teaching teachnique, tape recordings cannot be used indiscriminately. The procedure is not a cure-all. Teachers of vocational agriculture have used the procedure successfully and effectively. It is another way of providing needed and useful information to adult farmers. □



Participants in joint conference of agricultural education and agricultural extension leaders.

State Staffs Plan Continued Cooperation

In Agricultural Extension and Agricultural Education

E. W. GARRIS, Teacher Education, University of Florida

E. W. Garris

THE Agricultural Extension Service and agricultural education leaders have always worked in harmony in Florida. I can vouch for this fact since 1925 when I joined the staff in agricultural education. During this long period of time, however, there have been no definite written policies to guide the friendly cooperation among the workers in the two organizations.

This summer, Dr. M. O. Watkins, Director of Agricultural Extension Service, and Mr. H. E. Wood, State Supervisor of Agricultural Education, decided to hold a joint staff meeting on the campus of the University of Florida. The meeting was held on September 1, 1959, with fifteen members present. General discussion of mutual problems proved to be so valuable that it was decided to make such a conference an annual event.

The main area of discussion centered around the FFA and 4-H programs in relation to contests and fair exhibits. It was definitely agreed that the *Golden Rule* would be used as a guide, keeping in mind the best interest of each rural boy.

Some of the specific areas of agreement were the following:

1. For agricultural projects running more than a year, no transfer may be made after September from one organization to another. Each project will be continued until August 31 in the organization in which it was started. If transferred in September, the teacher or agent concerned will inform the other agency.
2. Seasonal projects (less than one year in duration) will not be transfered from one organization to the other.
3. A state winner (individual or member of a team) in one organization is not eligible to participate in the same activity in the other organization.
4. If a boy qualifies himself to participate on a state team or activity during the year he must make a choice—he is not eligible to compete in both organizations.
5. Separate exhibits and prizes are recommended to fair officials for FFA and 4-H club members.

The public is invited to visit the various fairs in Florida to observe how well these agreements are being followed. It is also suggested that the public contact teachers and agents on the local level where any policies are finally tested. □

How the School Farm Operates

at the U. of Nebraska School of Agriculture

GLENN W. NICKLAS, Vo-Ag Instructor, Curtis, Nebraska

Glenn W. Nicklas

THE University of Nebraska School of Agriculture, located at Curtis, Nebraska, has a 450-acre farm in connection with the school. The school is operated by the University of Nebraska and it provides a high school education for students in the immediate vicinity, for many who attend from the sand hill area of Nebraska, and for a few youngsters from out of state.

The school farm is under the direction of a farm manager who is an instructor in the school and through him the vocational agriculture program has been given the opportunity to take over production enterprises as far as it seems logical to do so.

Vocational agriculture became a part of the school's curriculum in July of 1956, and this past year the swine, sheep, and poultry were managed by the boys who purchased them from the school. These projects became a part of their supervised farming program.

There are some definite advantages, as I see it, that a school with a farm can provide the students. Some of them are:

1. Students with production projects on the school farm have to take all of the care of them.
2. There is a very close relationship between the teacher and the student. All management problems are solved between the two.
3. It allows the boys who do not have the facilities at home to get actual experience in a production project they think they would be interested in.
4. Very accurate records are kept, and the cost of production is easily determined.
5. Comparisons are easy to make and a student's success or failure can be pointed out to others. This provides good motivation for educational experiences.
6. Requires students to work together on problems in the classroom and share the equipment available.
7. Provides students with the opportunity to see some of the newer methods being used and realize some of the advantages and disadvantages.
8. The farm offers opportunities for improvement projects in class by actually being able to plan and carry them to completion.

9. Improves the shop program because of the opportunity it affords students to construct projects.
10. The animals of the students are readily available for class use. Many demonstrations are given and new skills developed.

The ten advantages which I have given are far from being all of those which could be listed. I do feel that they are of most importance.

The picture would not be complete if we did not turn the page and have a look at the other side, that is, a few of the disadvantages. They are:

1. A full teacher load is reached with fewer students.
2. Each individual student cannot operate completely separate from the others.
3. Vacation time presents a problem because most of the students with projects on the school farm come from some distance and they go home during vacations.
4. The size of the project has to be limited.
5. The cultivated land on the farm does not fit into a satisfactory farming program as most all vocational agriculture students return to their homes during the summer.

The above obstacles, however, are being met to a degree in that: (a) It is a two men department, the only one in the state of Nebraska. (b) All students involved in similar projects are given the opportunity to voice their opinion as to how they think they should be managed. Individuals with similar ideas are grouped together, and it has proven quite satisfactory. (c) During vacation periods, the farm help cares for the livestock and poultry at a reasonable fee. (d) Although the facilities are limited on the school farm, the majority of students have production projects on their home farm or ranch to increase the size of their farming program. (e) Some crop demonstrations are carried out on the school farm so the students get the advantage of making comparisons.

The method used in operating the school farm in our school seems most logical and is very satisfactory. The facilities are made available for the students in vocational agriculture under the supervision of the instructors. The continuous management by an instructor hired for that purpose carries on the farming operations with hired labor; the vocational agriculture teacher does not find he has to neglect his duties of teaching and supervised farming visitation to get a needed job done on the farm.

For actual learning, the school farm provides a wonderful opportunity for students interested in farming. It fulfills our FFA motto, "learning by doing" more completely than it could possibly be done without the convenience of the farm. □

Using a problem farm for - - -

Teaching "Farm Management"

JOSEPH W. HOOPES, Vo-Ag Instructor, Monroe, Iowa

Are you satisfied with your teaching of farm management? Does the textbook used as a reference deal with the problems of your community? If your answer is no to the previous questions, you find yourself with the same problems as I had three years ago. I decided right then to do something about it. At the summer conference of the Iowa vocational agriculture teachers, I got an idea from John Sprugel, Vo-Ag Instructor, Council Bluffs, Iowa. He said he used a written type farm problem for his management class. With this as a start, I developed the following farm management problem for my Vo-Ag IV students.

The first part of the problem is a review of farming principles and practices using the Doane Agriculture Students' Digest as the text.

The second part of the problem is the actual setting up of a farm plan for an actual farm in the community. During the summer, I contact a farmer near town and make arrangements for using his farm for this class. Each student is a renter moving on the first of March and he must develop his farm plan independent of the other members of the class. The following areas are covered:

1. *Map of Farm.* This map must show fences, ditches, farmstead, etc., and show any future changes to be made.
2. *History of Farm.* This history should cover the last 5 years, covering such things as cropping system, livestock program, etc.
3. *Lease.* An Elridge Lease is secured from the bank and is drawn up covering all items necessary for the operation of this farm.
4. *Buildings and Fences.* Description of each building is given and changes to be made and costs of such changes. Condition of fences is given and recommended changes.
5. *Machinery.* A complete inventory is made out and cost of additional machinery figured. Additional machinery must be justified.
6. *Livestock Enterprises.* All costs, yields, gains, etc., are given and the student must come up with the best combination of livestock for his cropping system for maximum profit. All management and feeding procedures must be written out for all classes of livestock.
7. *Crop and Soil Enterprises.* A soil map is made showing per cent slope, soil type, and conservation practices suggested. Fertilizer tests are made on all fields. A rotation is selected and all production items are written down—(varieties, seeding time, fertilizer, weed control, harvesting, storage, and marketing). Yields, values, and costs are given.
8. *Records.* A balance sheet is figured for each enterprise and these are brought together into one financial statement for the farm.
9. *Finances.* A complete statement is written on how money for this operation is to be secured and repaid.

At the close of the problem, each student makes his report to the class and hands in the written report.

Now you probably wonder what the results and reactions were to this type of a problem? Well, the first reaction was quite surprising. Farmers of the area, seeing us on the farm regularly, stopped to see what we were doing and, after an explanation was given, five volunteered their farms for the class next year. The students liked the problem because it became a management challenge to see who could come up with the greatest net income. Even greater than either of these were the devel-

oping of three farm plans by students of their home farms, two father and son agreements, and one boy who is now a student at Iowa State University majoring in agriculture business.

If I were to make any changes in this type of problem, it would be to use individual farms for each student. However, the problem of supervision during class time spent on the farm would make it prohibitive, so the one farm for the class is used. □

Experimental work—North Marion, Oregon.

Vo-Ag students working in experimental plots.

Our programs should include - - -

Experimentation - Learning by Doing

ELVAN PITNEY, Vo-Ag Instructor, North Marion High School, Aurora, Oregon

We are living today in a world of continuous experimentation. In all walks of life we are constantly experimenting with new equipment, with new methods, with new combinations. Industry values it to the extent of maintaining complete departments for the sole purpose of research and experimentation.

I believe that we as vo-ag teachers must strive to educate our students to the realization of the importance of research and experimentation to them.

There are two general methods of doing this. One is by teaching the use of experimentation done by other people and is probably being done by most of us to a reasonably satisfactory degree. The other is the one that deals with "learning by doing." This is the one on which I wish to place my emphasis. After putting this method to work in my own chapter four years ago, I am convinced that not only have my students learned how to successfully complete important experimental work but they have come to value more highly the experimentation done by others. I believe that the experimental work that we have done on our chapter farm has benefited not only our members, but farmers of our community and farmers of other communities as well. Also, in the process, we have gained much favorable publicity for our department and for a local seed cooperative with which we have worked.

It is not my place to tell you what experimentation to carry on. I only urge you to teach this important area of vocational agriculture on a "learn by doing" basis. Whether it be experimentation with livestock or with crops, it will help you do a better job of teaching the value of research in agriculture.

Four years ago when we first decided to set up experimental work with crops on our chapter farm, I knew very little about the procedures for doing experimentation. Consequently, we called in a local seed cooperative manager and the crops specialist from the Extension Service. We finally decided the experimental work would be done with fall planted wheat. The objectives of the work would be:

(1) To compare fall versus spring application of nitrogen.
(2) To compare combined fall and spring applications of nitrogen.
(3) To evaluate rates of nitrogen applications.
(4) To evaluate phosphorus response.

We then met with a specialist from the Soils Department of Oregon State College who helped us plot the experimental work. It was at this stage that I began to realize how little I really knew about the procedures for carrying on such work. It was decided to run 3-plot trials of each type to avoid the chance of dead furrows, back furrows, etc., affecting the results of a single plot trial. We planned to run twelve trials which, when each was duplicated twice, would mean 36 total plots. A system of "randomizing" the plots was mapped out.

The next step was to run soil tests on the area. Then the soil was worked and the plots laid out and seeded in the fall. The fall applications of nitrogen and phosphorus were made using a fertilizer spreader furnished us by the college. This also involved the boys "calibrating" the spreader for accurate application.

The following spring, the spring applications were made as planned. Paths were mowed through the plots so that easy observation could be made. A large sign was erected along the road calling attention to the experimental work and explaining the work. Small signs were made and placed by each plot.

In the late spring, a field meeting was held for all who were interested in the work.

At harvest time, accurate yields were taken from each plot. When school began in the fall, each yield was weighed and a quality test (based on weight) was run on each plot. When all weights were recorded, the analysis of data began. Keeping in mind the four objectives of the work, comparisons were made. To keep our work on a practical basis, all costs of fertilizers were used in making the comparisons. When all comparisons had been made, they were worked into a table form. This table, along with our observations and analysis, was duplicated and distributed throughout our community and to anyone else who desired one. The state college used our results in their records also.

Since that time, we have run some type of accurate, well-planned experimental work within our chapter

each year. As a result of it, I am very sure that:

(1) The State College and the Extension Service have come to know our chapter.
(2) The boys have gained a working understanding of the Extension Service and the State College.
(3) The community has shown more interest in our chapter.
(4) Valuable information has been gained from our experimental results.
(5) The boys have learned the procedures for experimenting.
(6) The boys have learned to practically analyze experimental data in terms of what it means to them.
(7) I personally gained much knowledge and a certain degree of prestige.

I am not an expert on conducting experimental work within chapters, but I do have some opinions gained from my own experiences with experimental work on crops. For what they are worth in any area of experimentation, I will present them.

(1) *Plan carefully and cooperatively.* I suggest bringing in other persons such as county extension men, state college men, and persons from appropriate local concerns. In doing this, I believe that you will get generally better ideas, more community interest, possible use of specialized equipment, better understanding between the students and the represented groups, and, possibly, financial backing.

(2) *Experiment for specific practical purposes.* As a teacher, one of your purposes is to educate your students concerning experimentation in agriculture. However, over and beyond this purpose, I believe that the experimentation itself must have a practical purpose on its own merit. Thus I believe that it must work toward aiding a local problem and that it must be planned and set up so that specific written data can be obtained.

(3) *Keep your work attractive and accurate.* Confidence of the public in your work will be lost if it is not kept accurately and neatly. It is imperative that your work be laid out and marked neatly with painted stakes; that plots, paths, etc., be kept trimmed; that weeds be controlled; and that signs be clearly worded and attractively made.

(4) *Publicize your work.* The interest of both your students and your community is bolstered by good informative publicity. I suggest then that first of all, locate your work so that it is accessible to the public. Secondly, place signs which clearly tell the public what they need to know to observe the experimentation properly. Then, of course, keep progress articles in the newspapers, hold one or two field meetings, and distribute as widely as possible the results of your work.

(5) *Follow through completely.* Too often our so-called experimental work stops with observation. I believe, to be of real value to students, experimental work must result in yield and cost analysis. Anything less is not enough. I believe that students must record on paper all data and then analyze and summarize, on paper, their findings. □

A solution to the problem of - - -

Training for Farm Related Businesses

R. J. AGAN, Teacher Education, Kansas State University

Raymond J. Agan

FOR the teacher of vocational agriculture who wants to train for farm-related occupations, here is the answer! Do a better job with your present program of vocational agriculture; teach the solution of local farm problems which face farmers in your community; train for proficiency in farming, stressing farming programs, farm mechanics, and a full program of future farmer activities, and you will graduate a young man from your curriculum who will be sought after as an employee by many an owner of farm-related businesses. Under your teaching and direction as his teacher of vocational agriculture the young man will have shown his ability to learn, cooperate, get along with others, and advance under self initiative. Then let the farm-related business employer do the rest of the training. He'll be glad to!

A sampling of owners of farm-related businesses who were employers of graduates of the vocational agriculture curriculum in Kansas had such statements to make as: "The boys who take vocational agriculture know how to work." "The high school should offer more courses like vocational agriculture." "The boys who take vocational agriculture are good welders and know how to do mechanical jobs; we need more like them."

On a formal evaluation sheet designed to measure the employer's opinion of the efficiency of his employee, the same employers rated the graduates of vocational agriculture as "above average" in most categories with several reaching the level of "exceptional and outstanding." Of the 38 men so rated, there were two who frequently were rated as "below average" by the bosses.

The graduates of vocational agriculture were, as a group, well satisfied with their occupations in the farm-related businesses. There were a few who felt they were not placed in a life's occupation according to their abilities, but the outlook for the most part was a healthy one. The attitude toward farming was generally one of desiring to farm someday. Those who held this desire strongly expressed the need of starting on a small scale as a part-time farmer while holding their present positions and working gradually into the business of farming.

The attitude of the men toward their high school training was generally good. Usually those who felt that several parts of their training in high school had been deficient felt that most parts had been deficient. When the high school areas of study were ranked in order by the number of men who indicated that they felt that their training had been adequate in the various areas, they were as follows: 1st, mathematics; 2nd, mechanics; 3rd, English and writing; 4th, business principles; and 5th, science.

The majority of the men felt that their training in vocational agriculture was beneficial to them in their present work. When asked to identify phases of the program in vocational agriculture which helped them with specific traits in their present work there were many and varied answers, but a pattern developed from all the responses as a group which indicated some degree of relationship between

some of the phases of the training given in vocational agriculture and the ability of the graduate to do certain activities well on the job. For example, Future Farmer activities were credited by a majority of the graduates as being helpful toward their present character, reputation, and appearance on the job. The supervised farming program was credited as helping employees co-operate with supervisors and to plan programs and show initiative for personal self advancement through a sound business-like approach. Classroom activities were cited by the majority as giving training in attendance and punctuality on the job. Farm mechanics or shop work was given much of the credit for the quality of the work they were able to do.

The responses given by the sampling of Kansas employers who operate farm-related businesses and their employees who were graduates in vocational agriculture supported the belief of many specialists in agricultural education who advocate that the best possible job of training for the broad field of farm-related businesses may be accomplished by the present program of vocational agriculture with its goal of training for proficiency in farming. Proficiency in farming is the only common element woven throughout the many farm-related businesses. The teacher of vocational agriculture who does a good job with his program of training in vocational agriculture not only prepares the farmer of tomorrow for his occupation but also starts many young men well on their ways toward careers in farm-related businesses. This start may be by preparing him for further training in agricultural college or by giving him a basic skill—that of proficiency in farming—which will help him in farm-related occupations.

The men included in this study indicated several ways vocational agriculture had helped train them for success in their farm-related occupations. Some of these "ways" referred to by the men were broad in nature but never-the-less were counted as important by the employers who rated the men as employees.

Following is a list of educational experiences based upon the responses given by the sample of 38 men when asked which phases of the program in vocational agriculture helped them in specific abilities on their present job.

SUPERVISED FARMING

Initiative on job—experiences in planning a program of advancement for self.

Steadiness on job—a realization that progress is made by planning and patiently following the plan.

Cooperation with supervision—experiences in taking advice from the teacher and applying it to the task at hand.

Carrying out instructions—experiences in developing a plan with the teacher and father and following through on the plan.

Personal effort for self advancement—experiences in planning a program to build up personal net worth and advancement in the business of farming.

FUTURE FARMERS OF AMERICA

Organization of work—experiences in organizing a year's program of work for the chapter and carrying it to completion.

Cooperation with fellow workers—experiences in working together co-operatively with peers to complete cooperatively the task at hand.

Cooperation with company policies—experiences in following policies set up for the efficient functioning of an organization.

Personal appearance—experiences in dressing neatly for FFA functions.

Character and reputation—a realization of the worth of such character and reputation that an FFA boy ideally has.

AGRICULTURAL CLASSROOM

Thoroughness of work—experiences in solving rational problems thoroughly and applying them to specific situations.

Attendance and punctuality—experiences in being at a certain place at a certain time.

Judgment—experiences in making decisions and choices about farm problems.

FARM MECHANICS PROGRAM

Accuracy and knowledge of work—experiences and development of proficiency in doing many of the skills required in farm-related businesses.

Volume of work—experiences in making time count while in farm shop class.

Neatness of work—experiences in neat dress and work habits while working in the shop.

Self confidence and ability to advance—experiences in constructing projects and the feeling of assurance of own ability.

Supervisory ability—experiences in taking responsibility for various shop functions and supervising others in such jobs as clean up, tool storage and repair, etc.

JUDGING AND CONTESTS

Self confidence—experiences in making decisions and applying knowledge and being right.

Judgment—experiences in thinking through and analyzing a situation, arriving at a logical decision and abiding by it.

PUBLIC SPEAKING AND PARLIAMENTARY PROCEDURE

Self confidence—experiences in expressing ideas clearly to others, to speak for self and groups.

Initiative—experiences in using power of speech in obtaining goals. □

BOOK REVIEWS

TRACTOR OPERATION AND DAILY CARE by G. E. Henderson and C. E. Turner. Issued by the Southern Association of Agricultural Engineering and Vocational Agriculture, Barrow Hall, Athens, Ga. 116 pages; 200 illustrations. 1959. Price, single copy, $2.00.

This new publication, written on the student level, presents the fundamentals of daily care and operation of the farm tractor. The basic knowledge necessary to service, adjust, and operate a tractor under various conditions and situations are clearly given. Numerous illustrations aid materially in getting the story across and in presenting the "Why" as well as the "How" of tractor operation.

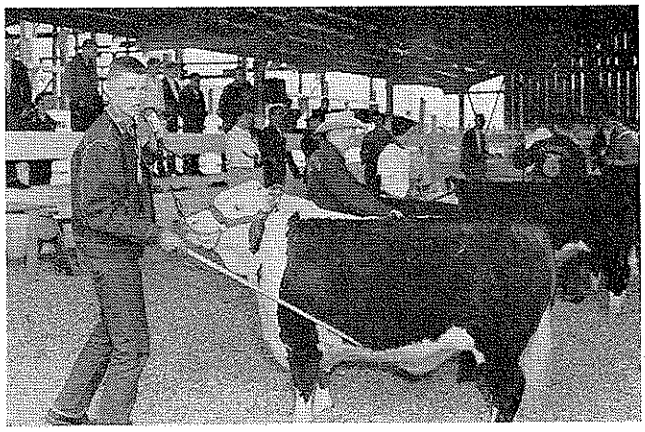
Areas covered include: doing the 10-hour service jobs, making adjustments to meet operating needs, starting the tractor, controlling tractor movement, hitching to equipment, operating the tractor under field conditions, doing routine operational jobs, operating on the highway, unhitching equipment, stopping the tractor, and refueling. *Safety* is treated throughout each section with emphasis on those practices leading to safe operation and use of the tractor. This publication received the 1959 CERTIFICATE OF COMMENDATION award from the National Safety Council, Farm Division.

Mr. G. E. Henderson is coordinator of the SAAE and VA and Mr. C. E. Turner is illustrator for the publication.

JOE P. BAIL,
Teacher Trainer,
New York

At the Nevada State FFA Convention: R. Reid, Vo-Ag Teacher, Virgin Valley High School, Mesquite, Nevada; W. Carnes, Editor, National FFA Magazine; C. Scott, Ass't State Supervisor, Indiana; B. Hafen, Immediate Past National FFA Vice-Pres., Mesquite, Nevada.

Four U. S. Regional FFA Star Dairy Farmers for 1959 are all smiles as they chat with Carol Ralphs of Utah, National Dairy Princess of the American Dairy Association. The picture was taken at the National FFA Awards Dinner held recently in Waterloo, Iowa in connection with the National Dairy Cattle Congress. The Star Dairy Farmers are left to right: Philip Yetter, 18, Newton, New Jersey, National Star Dairy Farmer; Richard Doeberiener, 18, Fort Atkinson, Wisconsin; Bruno Sala, 17, Salinas, California; and Lynn Ivey, 17, of Macon, Georgia.



Bert Benton, Tolt-Carnation FFA, was named Grand Champion Novice Beef Showman at the North-West Junior Livestock show, Auburn, Washington. Later, the animal was named Grand Champion of the show in the FFA Division. (Not a bad record for a sophomore, exhibiting and raising a beef animal for the first time.) R. D. Walen, Carnation, Wash.

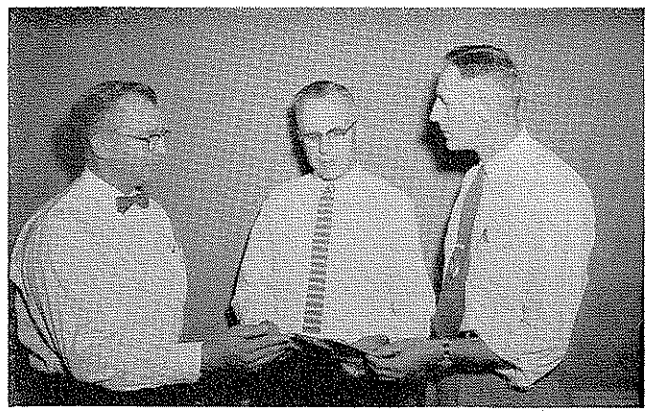
North Dakota Vocational Agriculture Association Officers, 1959-60

Front row—left to right: Shubel D. Owen, NDAC, Fargo, N. Dak., Treasurer; Leo Vossler, Parshall, N. Dak., President; Clifford Nygard, Bismarck, N. Dak., Past President; Donald Erickson, Rugby, N. Dak., Secretary; Claude Ridgeway, Larimore, N. Dak., Vice P. Dist. VI.

Back row—left to right: Clifford Simek, Maddock, N. Dak., Vice-P. Dist. I; Charles Moilanen, Rolla, N. Dak., Vice P. Dist. V; Norman Howe, Minot, N. Dak., Vice P. Dist. IV; Wayne Dittmer Mott, N. Dak., Vice P. Dist. III; Charles Challey, Valley City, N. Dak., Vice P. Dist. II; Wesley Wankel, Turtle Lake, N. Dak., Vice P. Dist. VII; Ernest L. DeAlton, NDAC, Fargo, N. Dak., State Supervisor.

Stories In Pictures

Dr. William Knight, Department of Agricultural Education at the Ohio State University, meets with a group of first-year vocational agriculture teachers for an evening session on evaluation of farming programs. Dr. Knight says that the three set sessions which he holds with each group of beginning teachers each year is one of the most effective means he has found in bringing about professional growth on the part of these teachers.



J. Wall, Executive Secretary, NVATA; J. Hamilton, Vice-Pres., Region III, NVATA and Dr. A. W. Tenny discuss plans for the Agricultural Hall of Fame.