

*The*

# AGRICULTURAL EDUCATION

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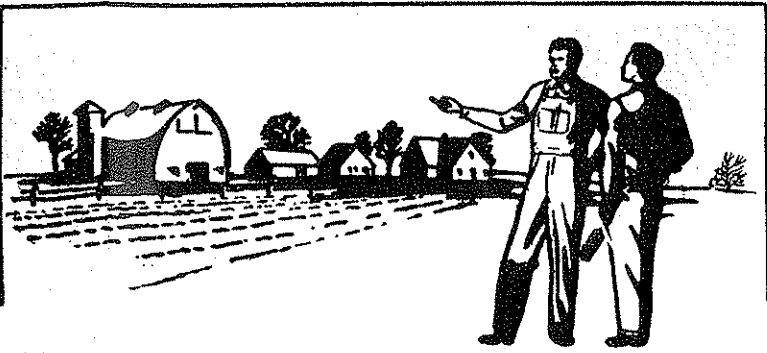
NUMBER 2



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*Featuring*—Professional Organizations  
for Teachers of  
Vocational Agriculture

# The Agricultural Education Magazine



A monthly magazine for teachers of agriculture. Managed by an editorial board chosen by the Agricultural Section of the American Vocational Association and published at cost by Interstate Printers and Publishers, Danville, Illinois.

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## Contents

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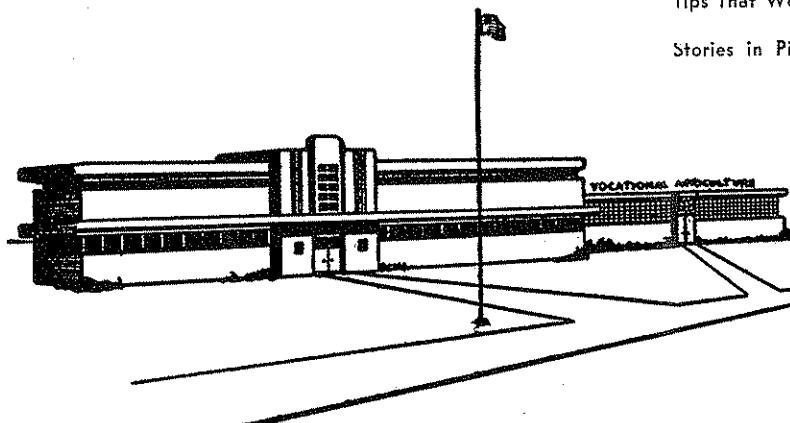
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### Editorial

It Will Take Courage.....	27
Administrator, Vo-Ag Instructor Meeting.....	
Alfred Bang.....	28
How Do You Rate As a Committeeman?.....	
Clarence S. Anderson.....	28
The Cover Picture.....	29
Professional Improvement.....	
Marion Morgan.....	29
A Second Year of Agricultural Education in Iraq.....	
J. H. Lintner.....	30
Determining the Course of Study in Farm Mechanics.....	
Frank Anthony.....	32
Index to Volume XXXI	
Contents.....	35
Authors.....	38
Implications of Sputnik for the Teaching of Vocational Agriculture.....	
W. R. Brown.....	39
Adapting Instruction to Individual Differences.....	
Ray H. Simpson.....	40
A Professional Spirit in Vocational Agriculture.....	
James L. Rose.....	44
Texas Vocational Association Formed.....	
H. G. Barber.....	45
A Common Philosophy in the School.....	
James Pollan.....	46
Book Reviews.....	46
News and Views of the Profession.....	47
Tips That Work.....	47
Stories in Pictures.....	48



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# Editorials

## *From the Editor's Desk . . .* **It Will Take Courage . . .**

There has existed, for some time, a code of ethics for all teachers. Recently, a creed for teachers of vocational agriculture was made available to all teachers of vocational agriculture. This is a small step toward the accomplishment of one of the responsibilities of a profession, the responsibility for enforcing adherence to the ethics of the profession. How much farther can the vocational agriculture teachers' organizations go in developing among its membership a strong sense of professional responsibility? Is it possible for teachers of vocational agriculture to take action against fellow teachers who fail to live up to the code of the profession?

The examples commonly cited when discussing what professional organizations can and should do about unethical behavior are the medical and legal professions. The American Association of University Professors also has a procedure for considering situations involving staff-institution disputes. Imperfect though these examples may be, they do represent a start. Can teachers of vocational agriculture do as much?

Is it possible, for example, for each state organization to have a professional ethics committee which would be responsible for investigating situations involving violation of the code of ethics by a teacher as well as infringements of a teacher's rights by a school? The committee could be appealed to by either a teacher or a school. The committee could request certain information as a basis for deciding whether or not it should investigate the case. If an investigation seemed to be warranted, the committee could proceed and submit a report to the state organization executive committee, the teacher, and the school. Recommendations could range anywhere from supporting the discharge of the teacher by the school to supporting the teacher. Recommendations could also take the form of suggestions for change on the part of the teacher and/or school to be effected during a trial period. The committee might decide that it was unable to secure enough information on which to base any recommendation.

There may be better ways to tackle the problem of enforcement of adherence to the code of ethics of the profession. Certainly, the suggestion made leaves most of the questions and problems regarding enforcement unanswered. However, if we are ever to achieve full professional status, action of some kind must be taken regarding this very difficult problem. The members of the profession must be willing to take action to estab-

lish and maintain a high level of professional competence and behavior.

Teachers of vocational agriculture form one of the strongest and most closely knit teaching groups. If vocational agriculture teachers are unable to enforce adherence to their code of ethics, it is extremely doubtful that it can be done by any group of teachers. It will take courage to try. □

## THAT TO WHICH WE HAVE DEDICATED OURSELVES - - -

### CREED

- I am a teacher of vocational agriculture by choice and not by chance.
- I believe in rural America; I dedicate my life to its development and the advancement of its people.
- I will strive to set before my students by my deeds and actions the highest standards of citizenship for the community, state and nation.
- I will endeavor to develop professionally through study, travel and exploration.
- I will not knowingly wrong my fellow teacher. I will defend him as far as honesty will permit.
- I will work for the advancement of vocational agriculture and I will defend it in my community, state and nation.
- I realize that I am a part of the public school system. I will work in harmony with school authorities and other teachers of the school.
- My love for farm youth will spur me on to impart something from my life that will help make for each of my students a full and happy future.

*Note: The above creed was taken from the back of the NVATA membership card.* □



Dist. 6 of Nebraska Association conducts - - -

## Administrator, Vo-Ag Instructor Meeting

ALFRED BANG, Vo-Ag Instructor, Grand Island, Nebraska

On Wednesday, October 8, the vo-ag instructors of District 6 of N.V.A.A. entertained the administrators of their schools at the Regal Steak House in Holdrege. The evening started with a steak dinner at 6:30. Following the dinner, Al Bang, President of N.V.A.A., spoke to the group concerning the values and importance of the district, state, and national organizations of vo-ag instructors. Leland McDowell, with the use of a flannel board, explained the structure of the vo-ag program and the relationship of class, shop, and supervised farming in a well-balanced program. C. A. Cromer told of the opportunities for boys in farming, even in the face of decreased numbers of farms. He also pointed to the value of vo-ag

training for boys who plan to go into related fields of agriculture.

A panel of three vo-ag instructors, four administrators, and one supervisor of agricultural education, moderated by Lee Moore, District 6 Chairman, discussed two important questions facing vocational agriculture. These questions were: "What should be the purposes of an up-to-date course of vocational agriculture?" and "What guidance should be given students and prospective students of vocational agriculture?"

Conclusions concerning the above questions would indicate that a modern course in vo-ag should prepare the student for any of three general areas: farming, agribusiness, and agricul-

tural college training. Most of the emphasis should still remain on farming. As to guidance, it was recommended that an early start be made, usually while the student is in the eighth grade, in guiding those students who can profit from agricultural college training into the course of vocational agriculture. However, it was pointed out that the vo-ag instructor's responsibility for guidance extends into guiding the student into other courses that will be of greatest benefit to him. The vo-ag instructor should feel responsible for making sure that students who are capable of college training are enrolled in courses that will give them a proper background in mathematics, science, social science, and English.

This program was under the direction of Neil Scott, Vice-Chairman of District 6, and was planned at a special meeting of the instructors of the district which was held in Minden on Saturday, October 4, 1958. □

For analyzing OTHERS read - - -

## How Do You Rate As a Committeeman?

CLARENCE S. ANDERSON, Teacher Education, Emeritus, The Pennsylvania State University



C. S. Anderson

SOMETIMES it seems that educators spend a disproportionate amount of their time attending endless, time-consuming meetings of committees. But, since the committee technique is an accepted way of getting things done in a democratic society, teachers should face the situation and try to be the best committeemen possible.

Furthermore, we have a responsibility to train our students in the art of becoming able, efficient committeemen. A good way to do it is by example. And of course, teachers of agriculture will capitalize on student participation on Future Farmers of America committees to accomplish this teaching objective.

Seventy-five percent, or more, of all school committees are what are often called "change committees." These committees usually come into being because of an expressed dissatisfaction with an existing situation, or because of a growing felt-need to do

things differently. In other words, because of a demand for "change."

Someone proposes that a committee be appointed to look into a matter, and bring back a report. Before you know it, perhaps you find that you are a member of the investigating committee. How are you going to function as a member? Do you generate new and constructive ideas, or do you specialize in mostly just vetoing the proposals of others? Can you express your ideas clearly and concisely, or are you regarded by others as a double-talker? If you are the former, then you will not only be a valued member, but you will be in a position to do something about the problem of the unending, time-consuming meetings mentioned above.

Let us assume that you are a member of a committee, the work of which concerns the introduction of new ideas and new ways of doing something. In other words, you are a member of a "change" committee. I am not able to tell my readers exactly how to always be good committeemen, but I will mention some types of persons whom I have found to be very poor committeemen. If you do not fall within any of these categories,

you are probably safe.

### (1) *The Status Quo Type*

The committee member who says, "I am satisfied with the plan we have followed in the past," has by his own admission a mind closed to "change." He may be a balance wheel on a committee that is inclined to go off the deep end, but otherwise, he seldom serves a useful purpose on a committee.

### (2) *The Double Talk Type*

If you cannot be brief and to the point in your remarks, you probably do not have anything worth saying. Verbosity and indulgence in double talk are dangerous practices. Both are habit-forming. They can render you almost useless as a committeeman, to say nothing of what they do to those who must listen to you.

### (3) *The Skeptic Type*

The person who dismisses new ideas or proposals by saying "They will not work" without explaining why he arrives at his conclusion is a poor person to be on a committee which is dealing with "change." Unsupported negative responses do not contribute to the solution of a problem and chairmen should not accept them.

### (4) *The Snap Judgment Type*

Occasionally, there are com-

mittee members who discount the value of even limited deliberation. An idea sounds good to them! They wish to vote and get it over. Members who operate this way usually do not have the work of the committee at heart. Snap judgment and quick decisions can prove disastrous.

(5) *The Let Others Try It First Type*

If you are convinced of the merit of a plan, or an idea, you should also be willing to risk trying it. Persons whose thinking runs in this vein may be very conscientious individuals and they may even be very helpful in certain aspects of committee work; but unless they are willing to see their plans effected, they are not the best committee members.

(6) *The Yes-Man Type*

Some individuals will consent to practically any and every proposal. They are the head-nodders around the conference

table. Sometimes they blindly follow a friend or a leader on the committee and will assent to even his most spurious suggestions. Some try to vote as they believe the chairman would vote. Often limited in originality, they are the members who are least able to think independently.

(7) *The Penny Pincher Type*

The work of many committees involves the expenditure of funds. When finances enter into the consideration, there should always be full and clear understanding on the part of all members. No one member can, or should, be the self-appointed keeper of the purse. And a member who holds the coin so close to his eyes that he sees only the buffalo is often a real roadblock to committee progress.

(8) *The Mañana Type*

On most committees, certainly on large ones, there are likely to be one or more persons who

want to delay decisions. They are never ready to vote. They want to let ideas "jell." Procrastination like this seldom helps the situation and can grind committee progress to a standstill.

Committee work is a responsibility of all teachers. It can be a real joy and satisfaction if you have a crystal-clear conception of the purposes of the committee on which you are named to serve, if you believe in what the committee is trying to accomplish, and if you continually do your part to keep the progress of the committee moving forward with dispatch. □

### The Cover Picture

The strength of an organization lies in the ability of the membership to work together toward common goals and to interest other people in the activities of the organization. This is a group of Austin businessmen, agricultural education staff members, and Future Farmers planning the Texas FFA Convention.

## Professional Improvement

### —going forward in a profession of teaching

MARION MORGAN, Teacher of Agriculture, Bardstown, Kentucky\*

\*Note: Mr. Morgan is just completing his second year as a teacher of vocational agriculture.

We all agree that boys and young men should grow in the business of farming—that they should make improvements in their farming programs, year by year. How about ourselves? Are we growing professionally, in the job of teaching vocational agriculture? Do we expect more of our students than we do of ourselves? Do we need to improve as teachers of agriculture? Let's look at a few aspects of self-improvement.

*Self-Evaluation:* Does a Master's Degree make a master teacher? My answer is "no." One may take all the courses in education and agriculture available in a given field and if he does not stop and ask himself the question, "What kind of a job am I doing as a teacher?" he cannot improve as a teacher. In my opinion, we must evaluate our teaching daily, weekly, monthly, and at any time we feel we are not bringing about desirable changes in the behavior of our students. May I ask a few more ques-

tions?—Have you ever felt (as I have) a lack of interest on the part of your students in the solving of a problem? Have you sensed the feeling of "I'll do it just because he is watching," or "I'll study just because he says to"? Does your teaching ever fail to result in improved practices being carried out in the farming programs of the boys?

If and when such things happen to us, I suggest that we stop and ask ourselves a few questions regarding our teaching. What happened? What caused it to happen? What did I do wrong? Did my students come to believe that the practice is a good one and were they clear and definite as to "how" to carry out the practice? What can I do to make my teaching-learning more dynamic, revealing, and a self-discovery process?

*Graduate Work:* Having a Master's Degree does not make a master teacher. But graduate courses in agriculture and agricultural education can help us become better teachers. Are we, at times, like some of our students and think of a certain idea as a good one

but say it won't work in our case? I believe graduate courses carefully selected on the basis of individual need can help us improve our teaching more than any other one thing, save self-evaluation.

Graduate courses can help us improve our teaching when they are determined by the individual teacher through a self-evaluation. If we are having trouble with a young-farmer program, why not enroll in an appropriate course to strengthen this weakness? If we are weak in farm mechanics, why not take courses to strengthen this weakness?

*Keeping Up-to-Date:* How can we be good teachers of agriculture if we teach farming practices that are out of date? The principles of learning remain the same, but agriculture changes with each new discovery.

Reading good agricultural magazines and circulars dealing with agriculture is a good method of keeping up-to-date in agriculture. Have you been confused as to what to do with the many magazines and publications which come to your desk? If we tried to save all the things that we thought were good in agriculture that came to our desks, the file would be so large we would never be able to find what we wanted when we needed it.

I have found it very helpful to take a few minutes of the first free period

during the day and rapidly look through the mail for the day. When I find something in a magazine that will be useful in teaching, I tear it out and file it in the appropriate bulletin box and throw everything else away. When a new extension publication comes to my desk which I can use in teaching, I order the number of copies I need immediately. Those publications which have no place in my instructional program, either as group work or individual work, I throw away.

We teachers know enough about the learning process to know that we can't learn everything that is good and new in agriculture. So why not resolve ourselves to keeping up-to-date on those things which we should be teaching in our respective communities?

How can we keep up-to-date in farm mechanics? I have found work shops most helpful in keeping me up-to-date in servicing and maintaining farm tractors, in servicing and maintaining farm machinery, in electricity and other areas. The local tractor and machinery dealers are ready and willing to help me keep current of the changes in farm machinery. Some teachers work out agreements with local machinery dealers whereby the dealer provides their departments with new pieces of farm machinery for study in the farm mechanics shop.

This serves a very useful means of keeping the teacher and students up-to-date on new machines as they come out.

We must not overlook keeping our course of instruction up-to-date — abreast of the changes in our communities. In general agriculture areas, the crop and livestock enterprises may change in importance from time to time. We should make periodic community surveys to make sure we are teaching those things which are relatively most important in our communities.

*Improving the Profession of Teaching Agriculture:* As a professional group, we cannot lift ourselves much above the opinions which other educators have of us and our profession. How do we fit into the total school program in our school? Do we find ourselves on the outside or in a corner to ourselves? Do our school faculties try to de-emphasize vocational studies with the "new" emphasis on mathematics and science?

We must work with our school administrators and faculty members in determining the place of vocational agriculture in the total school program. In my opinion, one of the most damaging things to a good program of vocational agriculture is the enrolling of boys in agriculture who cannot benefit from the *vocational* aspect of the program. How can we work

with our fellow faculty members and school administrators on the importance of vocational agriculture in the total school program when they are all aware that we have boys in our classes who live on town lots where they cannot have an acceptable farming program?

The trend in agriculture is obvious — in the future, there will be a need for fewer farmers and thus it is logical that we should have fewer boys taking vocational agriculture each year. However, for those who are to farm, vocational agriculture will become increasingly more important. Therefore, we will need to train fewer boys for a vocation of farming but each must be trained much better. All school people should be led to see and understand this fact.

As professional people, we should support our professional organizations. Not only should we support our vocational organizations, but we should support the overall professional educational organizations. We do not deserve to share in the benefits brought about by our professional organizations unless we support them.

Teaching is a profession. Let us be professional in our teaching of agriculture, strive to improve ourselves as individual teachers, and to improve the profession by supporting our professional groups. □

## A Second Year of Agricultural Education in Iraq

J. H. LINTNER, Advisor, Vocational Agriculture,  
U. S. Operations Mission to Iraq



J. H. Lintner

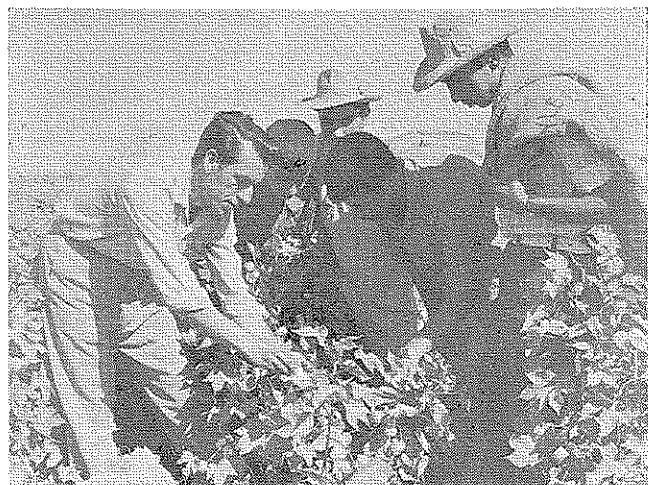
TWO years ago (February 1957), a summary of progress in Vocational Agriculture during the initial year of my two-year tour in Iraq was written in the hope that it might be of interest to readers

of "Agricultural Education Magazine." The second year was completed on Feb. 11th, 1958, and the two-day holiday (February 15-16) to commemorate the union of Iraq and Jordan provides ample opportunity for me to appraise the progress which again may be of interest to fellow

workers in the United States.

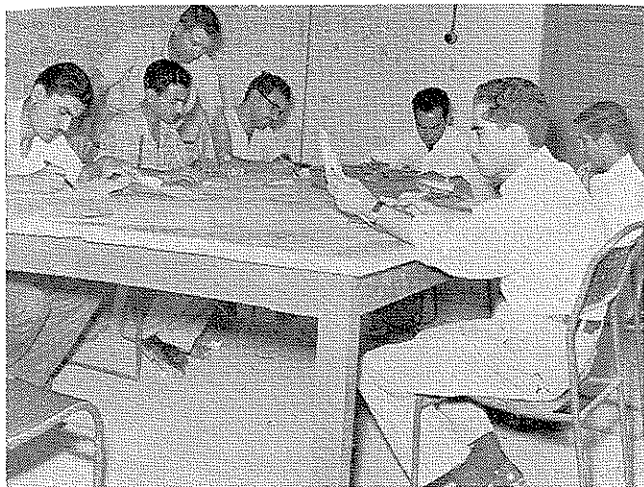
Qualitatively there has been little progress during the second year. The good aspects, including (1) the concept of teaching on the basis of solving problems

growing out of the operation of individual student projects on the school farm, (2) the training of students to become self-proprietors of family-sized farms on government reclamation projects, (3) the place of farm shop work in teaching vocational agriculture, and (4) the use of the



The teacher (left) Khazal Latif instructs some of his students in the proper method of picking cotton. Khazal is the first teacher of Vocational Agriculture in Iraq and will be in the United States to observe methods of teaching Vocational Agriculture as a participant in the PIV Training Program.

College of Agriculture graduates as teachers, are all still readily accepted in high government and educational circles. The difficulty lies in the operating level where inexperienced teachers with limited backgrounds in farming and only "token" pre-service training attempt to make an entirely



Mr. L. W. Coyne, Vocational Agriculture Specialist from Texas, assists the beginning teachers in preparing their annual programs of instruction during the summer work-shop.



All Vocational Agriculture students learn to operate the farm tractor during their first year of training.

new educational program function within an outmoded administrative system.

From the standpoint of quality of instruction and the programs of individual schools, the present development in Iraq is undoubtedly similar to what took place in the United States about 1920. Quantitatively, the picture is more satisfactory. The three Vocational Agricultural Boarding schools started in 1956 with a total of five teachers and 100 students have doubled in size. Six additional schools were opened in 1957, each with two vocational agriculture teachers and 40 students. Teacher-training has formally been incorporated in the curricula of the College of Agriculture and 15 teachers are receiving two semesters of pre-service training this year. A three-year program is in the process of development.

Each of the existing vocational agriculture schools will double their enrollment at the opening of 1958-59 school year and two new schools will be opened. By 1962, the goal of a 200 student boarding school in each of the 14 liwas (states of Iraq) should be achieved.

As far as the number of schools is concerned, the program has progressed as rapidly as contemplated. However, the number of students enrolled approximates only a quarter of the goal set up, largely due to the continual postponements of the building program and the difficulty in securing teachers.

Following the Suez incident, the hope of having complete sets of new buildings ready for the opening of the schools in September 1957 was abandoned because of lack of time and reduced national revenue from oil. To adjust to these two circumstances, a new plan was developed

for using prefabricated buildings and providing accommodation for a limited number of students each year. Each school starts with a vocational agricultural building, a dormitory building to accommodate 40-50 students, a block of four teachers' houses, and a farm building or barn.

The vocational agriculture building will be large enough to provide for the needs of 200 students and no additions would be necessary. It will have a classroom (24' X 32'), a farm shop (40' X 80'), a farm machinery compound (60' X 80'), teachers' offices, etc.

The dormitory (30' X 50') will initially be a multiple purpose building and will provide a classroom for academic classes, sleeping accommodations and cafeteria facilities. It will gradually be converted into a single purpose kitchen and dining hall as additional dormitory buildings are completed to handle 40-50 new students each year. The academic classrooms will be concentrated in a single building when additional dormitory space has been completed. An additional block of four teachers' houses will be built each year until accommodations for the entire school faculty of 12 are completed. The barn (30' X 40') would be a basic farm building, largely for dairying and feed storage. Additional buildings for fattening livestock, breeding sheep and poultry will be built by the teachers and students out of locally made mud bricks.

Although the tenders for the basic sets of buildings were closed on August 1, 1957, the unnecessary but usual delays in such proceedings resulted in the contracts not being awarded until January of this year. However, the reduced time required

for prefabricated construction should permit their completion by the opening of school in late September, 1958, and put an end to the unsatisfactory rented, borrowed and unfinished facilities which are presently used because of no other alternative if schools were to be started.

The supply of teachers from the first pre-service training class of one semester in the College of Agriculture should have been adequate to staff the new schools. Elaborate plans were made to provide farm mechanics training in a six-weeks summer workshop. The college graduates are obligated to work for the Government in return for their education and no difficulty was anticipated in providing at least partially trained teachers to open the schools in September 1957. However, it is one thing to make plans and another to make them work. The students did not wish to give up their vacation to attend the summer workshop even though they would receive pay. Teachers are exempted from two years of military service training but six preferred to serve the Ministry of Defense rather than the Ministry of Education. However, the Minister of Education persuaded the Minister of Defense to detail six graduates of the College of Agriculture who had completed one year of military training to replace those who had some teacher training but did not want to teach. The schools started a month late. The second teachers were not required to wear their uniforms but otherwise were under military contract. Some received less than a week of pre-service training and some were required to go to less desirable locations because they were ordered as soldiers rather than because they had a desire to serve as teachers.



In spite of inadequate facilities and untrained teachers, the schools are operating. All of the students can drive the school tractor, where none could before, and the farming operations are going on. The Animal Husbandry students actually care for the school livestock assigned as individual and group projects. There have been no serious accidents or losses aside from one tractor tire cut beyond repair, a school truck overturned on a slippery road, a batch of baby chicks burned up when the oil brooder caught fire and one high-priced ewe which died from causes even the official government veterinary could not diagnose. With adequate American technicians to provide in-service training, even these incidents might not have happened.

In addition to an Advisor to the Ministry of Education, it was contemplated that three American vocational agriculture teachers would come to Iraq to provide intensive in-service training with one week per month spent in each school. Only

one has arrived and although he has attempted to service all of the nine schools, it has been an impossible task. If this article excites the curiosity of several good American vocational agriculture teachers enough to come over and see how eager the students are to learn and how appreciative the teachers are for an in-service training visit—even once in six months—it will be worth more than the value to all the other readers combined. We need another man in Iraq as soon as he can come and other countries need many more.

One of the high lights of my two-year tour has been the opportunity to visit adjoining countries to see how the American technicians were developing progress of vocational agriculture to meet the specific needs of the different situations. After visits to Jordan and Iran, it was apparent that much good could come from an annual meeting of all personnel working in vocational agriculture in middle eastern countries similar to the conferences held each spring in the

various regions of the United States by program specialists of the U.S. Office of Education. The visit of Dr. M. B. Mobley, Executive Secretary of the American Vocational Association, to Pakistan in October 1957 for a survey of the educational needs, provided the focal point for such a conference in Karachi.

Three countries (Iran, Iraq and Pakistan) were represented at the meeting arranged on very short notice. The opportunity to discuss similar problems and their different solutions with Dr. Mobley and each participant was so valuable that the group considered it the first annual Vocational Agriculture Conference in the Middle East.

It is hoped that from this informal beginning, a full scale annual conference for American technicians in agricultural education will be arranged. Dr. Mobley readily agreed to carry back to the United States the needs and opportunities for vocational agriculture personnel which is the paramount problem of the area. □

Sales data aid in - - -

## Determining the Course of Study In Farm Mechanics

FRANK ANTHONY, Teacher Education, Pennsylvania State University

It is quite evident from the increase in farm mechanization that the program in vocational agriculture must show an increase in this important area of instruction. If we think of instruction in farm mechanics to include the areas of Farm Power and Machinery, Farm Buildings, Rural Electrification, Soil and Water Management, and Farm Shop Work, what should be included in these areas to meet current needs on modern farms?

A recent study revealed that it would take 30 hours to teach selec-

tion, operation, adjustment, preventive maintenance, and minor repair for the tractor alone. To treat other machines on the farm and several models of each means that all of the program of farm mechanics could easily be absorbed by Farm Power and Machinery at the expense of the other four areas of instruction. In fact, the minimum time needed to teach the basic skills for all of the areas in farm mechanics would take at least 610 hours. Allowing 40% or 576 hours in farm mechanics in the four-year

program, it would be impossible to teach all in this time; therefore, a continuous program of *farm mechanics* in vocational agriculture for the young and adult farm phase is necessary. However, for the four-year program, the teacher of agriculture should ask himself, "What should be given priority in the four-year program in the area of Farm Power and Machinery?"

To devise some means of detecting what should be taught in Farm Power and Machinery seems imperative. The following tables show the results of a survey\* of the sales of spare parts for the common machines found on Pennsylvania farms and indicate one means for determining what should be taught.

Even though the highest sale indicated 134 oil filters sold per hundred tractors, the figure appears to be low. Since the operator's manual recommends that the oil filter should be changed every 240 hours of tractor operation, and since the average use of the tractor in Pennsylvania is 600 hours per year, the number of filter sales should be two to three times the reported figure.

Engineering experts report that contaminated oil which is not changed

Table 1. Spare Parts Sold Per 100 Tractors in 1954 in Pennsylvania

Name of part	Number sold	Number of companies reported	Total number of tractors	Total number of sales of parts
Filter elements	134	5	98,329	131,241
Spark plugs	98	2	50,086	48,819
Radiator hose	26	2	23,027	6,053
Front wheel bearing	23	1	19,086	41,342
Fan belt	22	4	93,728	20,354
Muffler	14	3	74,312	10,506
Battery	14	2	25,432	3,458
Hour meter	.009	1	20,491	2
Hour meter	100	1	31,000	31,000

\*Anthony, Frank—An Evaluation of the Current Objective of the Farm Mechanics Phase of Vocational Agriculture in Selected Pennsylvania High Schools, Ph.D., 1956, 128 p., The Pennsylvania State University, University Park, Pennsylvania.



on schedule will hasten engine wear. This excessive wear will result in loss of power on the piston strokes, and a compression gauge would reveal this fact. The teachers of agriculture, however, did not include the use of the compression gauge as an activity in the instructional program.

The high sales of spark plugs, which rank second on the list, may be a result of excessive piston wear, which causes oil pumping that fouls the plugs, and lack of proper adjustment.

The high sales on radiator hose may be traced directly to engine overheating or to using a poor type of antifreeze, for water alone at a normal running temperature of 180° or lower cannot deteriorate the rubberized corded hose. The fact that the fan belt sales are high indicates that engine overheating could result from a loose, worn-out fan belt. Many farmers are inclined to wait until they see steam pour from the radiator cap, an occurrence which is generally due to an unadjusted fan belt. A loose fan belt tends to wear much faster because of slippage, whereas one kept tight will last at least twice as long. The operator's manual recommends a three-quarter-inch "play" in the belt, and this condition should be checked every ten hours of operation. The cheaper forms of antifreeze, as methanol, deteriorate rubber. Possibly the continued use of this alcohol is also the cause for the hose replacement.

The high sales of front-wheel bearings, 23 for every 100 tractors yearly, supports the statement of farm machinery dealers that "farmers do not bother greasing this bearing." With proper yearly maintenance, this bearing should last the lifetime of the tractor. Since this job is recommended once a year and takes approximately only 20 minutes, this greasing will save a farmer \$9.50 per pair of bearings. If the tractor is used with the poor bearing, the spindle becomes scoured, and on such a spindle a new bearing will last only a few hours. The spindle costs \$22.50 to replace, an expense that may often be prevented by means of following the instructions in the operator's manual.

The battery sales (14 per 100 tractors) also rank high on the list of spare parts. The operator's manual recommends cleaning the outside of the battery with baking soda and using enough distilled water to cover the plates. Possibly the lack of use of these materials curtails the normal

life of the battery. Many farmers insist upon using ordinary tap water rather than distilled because "that's what the garage men use." On the other hand, experts maintain that tap water adds to the battery certain minerals which reduce its normal life expectancy to about one-half.

It is interesting to note that paint sales (13.1 gallons per 100 machines) are listed as a fast-moving item. The larger and more progressive farm machinery dealers have reported that they are encouraging painting the tractors and decorating them with decals in order to encourage the farmer to give the tractor the proper care as prescribed by the operator's manual. A few of the dealers are offering paint jobs at cost of materials after every major overhaul job, which of course is the critical time at which the tractor should not be overheated and at which it should receive proper lubrication.

Since there are maintenance jobs which should be performed on a 10-, 100-, 200-, and 480-hour operation schedule, the farmer could be reminded of these intervals by a special hour-meter which may be mounted on the tractor. The average price is \$25.50, but the sales for this spare part are approximately two for 10,000 tractors.

One company installs the hour or "proof-meter" with each tractor as standard equipment. In general, the teachers of agriculture have not encouraged the farmers or local farm machinery dealers to indicate that some farm machinery dealers are insisting that the hour-meter be mounted on every new tractor before it leaves the salesroom.

The high number of steel shares points to the importance of instruc-

tion in hard-surfacing the shares themselves, or seeing that the job is done. Farmers may get their shares hard-surfaced in some communities for \$2.50 per share. The cost of the welding rod is twenty-five cents; but unless the job is done well, the life of the share may not be prolonged. Since the original price of a steel share is \$6.50 and the life may be prolonged from 3 to 6 times, the expenditure of \$2.50, if the job is well done, would be an economical practice. Competitive prices, along with the lack of knowledge of the value of a treated share and the lack of trained welders to do a good job, probably account for the infrequency of hard-surfacing plow shares, cultivators, and farm tools. Also, for the first time, one company is placing treated steel plow shares on the market this year.

Since cast shares do not lend themselves to heat treatment, the farmers are only concerned that they be used in land free from stones. Cast shares are harder and wear longer, but in the event of contact with a large stone the new share may crack within a half hour. The farmers continue to gamble on cast shares because they wear better than the steel shares.

The data in Table 3 show that even though the underserrated knife is relatively new and self-sharpening, farmers in true traditional fashion are still using an equal number of smooth knives.

It is interesting to note that the sales of guards are 97 per hundred mowers. In most cases the guards are not needed, but it is the ledger plate which needs replacing. Since there is a definite skill required in removing the ledger plate, farmers feel that it is simpler to buy the whole guard complete for 80 cents than to replace

Table 2. Spare Parts Sold Per 100 Plows in 1954 in Pennsylvania

Number of companies reported	Total number of plows	Total number sales parts	Name of part and number sold per 100 plows	
			Cast shares	Steel shares
1	12,272	76,579	534	95
1	17,300	52,117	274	95
1	unknown	12,000	(combined)	
1	unknown	3,961	(combined)	

Table 3. Spare Parts Sold Per 100 Mowers in 1954 in Pennsylvania

Number of companies reported	Total mowers	Total sales by parts	Knife serrated	Knife smooth	Guards	Sickle assembly
						100
1	3,678	75,143	104	100		
1	3,678	35,710			97	
1	3,678	1,420				39

the plate which sells for 15 cents. With the proper tools and skill, a ledger plate may be replaced in approximately four minutes. However, with improper technique, the whole guard may be ruined in attempting to remove the old plate and it may take 15 minutes to a half-hour to repair each guard.

The data in Table 4 show that the blades are sold at the rate of approximately 74 per 100 discs. Experiments in many agricultural experiment stations have shown that plow shares and blades properly hard-surfaced will last three to five times longer. Lack of trained personnel to do this job and the farmers' lack of desire to get his job done account for the low rate of hard-surfacing of the blades. Teachers of agriculture are asking for special workshops in which they may learn the skills for doing the job.

The high sales of shovels and sweeps for the cultivators in Table 5 may be considered normal (240 per hundred cultivators), but hard-surfacing these parts will prolong the life as in the case of the disc blades and plow shares.

If all ground wearing spare parts were hard-surfaced, it is reasonable to assume that the sales of these parts could be reduced at least one-half. On this basis an educational campaign of hard-surfacing steel shares, cultivator teeth, and blades on discs could effect savings of \$500,000.00 for the Pennsylvania farmers.

The data in Table 6 reveal that parts which come in contact with fertilizer such as tubes and top feedgates and tar feeds—appear as fast-moving items. The failure of the farmer to care properly for the drill immediately at the end of use causes the fertilizer to rust the metal parts within a few months. Machinery manufacturers realize the problem but say that to make machines of metal resistant to fertilizer corrosion would make the price too high for competition. Experiments are now being conducted with aluminum alloys and plastics which may provide an answer to fertilizer corrosion.

In the meantime, if recommendations of the operator's manual were followed, grain drills would have a normal life expectancy of 18 years rather than four to seven, which is now the common occurrence with the use of high-analysis fertilizers.

For the All-Crop-Harvester, which is increasing in popularity with the

Table 4. Spare Parts Sold Per 100 Disc Harrows in 1954 in Pennsylvania

<i>Number of companies</i>	<i>Total No. harrows</i>	<i>Total No. sales by parts</i>	<i>Total No. blades</i>
1	13,681	10,069	74

Table 5. Shovels and Sweeps Sold Per 100 Cultivators in 1954 in Pennsylvania

<i>Number of companies reported</i>	<i>Total cultivators</i>	<i>Total sales shovels and sweeps</i>	<i>Shovels and sweeps</i>
1	36,312	87,040	240
1	unknown	11,884	

Table 6. Spare Parts Sold for Grain Drills in 1954

<i>Number of companies reported</i>	<i>Total grains grain</i>	<i>Tubes</i>	<i>Total sales by parts</i>		
			<i>Disc boot</i>	<i>Feedgate</i>	<i>Tar feeds</i>
1	unknown	14,612	1169	360	176

Table 7. Spare Parts Sold for All-Crop-Harvester in 1954

<i>Number of companies reported</i>	<i>Total harvesters</i>	<i>Knife sections</i>	<i>Ledger plates</i>	<i>Mower guards</i>	<i>Wearing plates</i>	<i>Sickle assembly</i>
1	6,393	64,378				
1	unknown	19,276	13,700	7,953	4,496	2,634

advent of grass farming, the data in Table 7 show that knife sections, ledger plates, guards, sickle assembly and wearing plates are the fast-moving items. Proper adjustment of these parts as prescribed in the operator's manual should receive emphasis in the farm mechanics program to insure longer life for the parts.

In summary, the inspection of sales parts for the common farm machines reveals many areas of instruction which should be emphasized in the present farm mechanics program. They are as follows:

1. Greater emphasis on preventive maintenance, as proper lubrication and parts adjustment on the tractor and other farm machines.
2. Greater use of operator's manual to determine the proper adjustments on the machines which would result in reducing repair bills and increasing the life of the machines.
3. A campaign to effect the general practice of hard-surfacing all parts which receive constant wear by coming in contact with the soil such as cultivator teeth, plow shares, and disc blades, in order to increase the life of these parts.
4. Emphasis on proper care of machine parts that come in con-

tact with fertilizer until such time as those parts are manufactured to be resistant to high-analysis fertilizer.

5. Greater emphasis in the instructional program concerning use of rust inhibitors in the radiators and the use of non-corrosive antifreeze.

Teachers of agriculture should realize the major activity of farm mechanics is on highly mechanized farms and not in the high school shops; therefore, the establishment of a well equipped home farm shop should receive the highest priority in a well balanced farm mechanics program. □

### Next Month

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# The Agricultural Education Magazine

## INDEX TO VOLUME XXXI July, 1958 - June, 1959

### CONTENTS

EVALUATION  
FARMING PROGRAMS  
FARM MECHANICS  
FUTURE FARMERS  
GUIDANCE  
PROFESSIONAL  
SCHOOL-COMMUNITY  
RELATIONS

SUMMER PROGRAMS  
TEACHING METHODS  
AND MATERIALS  
YOUNG AND ADULT  
FARMER EDUCATION  
MISCELLANEOUS  
BOOK REVIEWS

#### EVALUATION

	Year 1959
Using Our "Report of Programs" as a Yardstick—H. D. Brum, Supervisor, Ohio .....	February
Evaluation—Stepping Stone or Stumbling Block?—D. S. Cross, Vo-Ag Teacher, College Area Schools, State College, Pennsylvania .....	March
Evaluation—Gerald B. James, Teacher Education, North Carolina State College .....	June
With Your Own Rope—A. H. Krebs, Teacher Education, University of Illinois .....	June
Teachers Evaluate Their Pre-Service Preparation—F. T. McQueen, Teacher Education, Tuskegee Institute .....	June
Agricultural Adjustment and Resources for Vocational Agriculture—Ted R. Robinson, Teacher Education, and Raymond R. Beneke, Department of Economics, Iowa State College .....	June
Evaluating by Sight—Leland Foote, Vo-Ag Instructor, Wheeler County High School, Bartlett, Nebraska .....	June
Analysis as an Integral Part of Evaluation—R. L. Hoeft, Vo-Ag Instructor, Omro, Wisconsin .....	June
Ammunition for Rebuttal—Glenn H. Masters, Vo-Ag Instructor, Chadron, Nebraska .....	June

#### FARMING PROGRAMS

	Year 1958
Motivation Toward Broad Supervised Farming Programs—H. W. Gadda, Teacher Education, South Dakota State College .....	September
Theory and Practice—A. H. Krebs, Teacher Education, University of Illinois .....	September
The Supervised Farming Program—Wm. Paul Gray, Nat. Exec. Sec. of FFA, U. S. Office Education .....	September
Well-Planned Farming Programs—Claude McGhee, Vo-Ag Instructor, Kingwood, West Virginia .....	September
Learning to Farm—Louis M. Sasman, Supervisor, Wisconsin .....	September
Planning and Replanning the Farming Program—Kenneth Allen, Vo-Ag Instructor, Monroe, Wisconsin .....	September
What Studies Show About Farming Programs—Milo J. Peterson and D. W. Martens, Teacher Education, University of Minnesota .....	September
Family Farming—Glen Boling, Vo-Ag Instructor, Wooster, Ohio .....	September
Farm Management Planning—Daniel E. Koble, Vo-Ag Instructor, Middleburg, Pennsylvania .....	October

#### Year 1959

Factors Related to the Amount of Manipulative Responsibility Assumed by Vocational Agriculture Students—Paul E. Hemp, Teacher Education, University of Illinois .....	February
Supervised Farming Programs in Relation to Off-the-Farm Occupations in Agriculture—Harold M. Byram, Teacher Education, Michigan State University .....	April
Making On-Farm Instruction Contribute to the Young Farmer's Individual Farming Program—Arthur P. Bell, Teacher Education, Agricultural and Technical College, Greensboro, North Carolina .....	May

#### FARM MECHANICS

	Year 1958
Improve Instruction in Farm Mechanics—Paul R. Lynch, Vo-Ag Instructor, Presque Isle, Maine .....	November
	Year 1959
Let's Use More Group Instruction in Farm Mechanics—John W. Matthews, Teacher Education, Univ. of Illinois .....	January
Need Effective Use of Farm Shop—A. H. Krebs, Teacher Education, Univ. of Illinois .....	January
Farm Machinery Workshops—Ernest F. Nohle, Supervisor, New York .....	January
How Do Vo-Ag Graduates Perform in Farm Mechanics?—Wilbur P. Ball, Agricultural Education Specialist, ICA-Stanford University Contract Team, Central Luzon Agr. College, Philippines .....	January
Farm Shop Safety Instruction Warrants Your Consideration—Robert C. Day, Vo-Ag Instructor, Carey, Idaho .....	January
Farm Mechanics Instruction—Edgar N. Hinkle, Jr., Vo-Ag Instructor, Barneston, Nebraska .....	January
The Farm Shop Goes to the Fair—Earl Schweikhard, Exec. Sec., Oklahoma FFA Association .....	January
Scale Models Provide Building Experience—Dwight L. Peck, Vo-Ag Instructor, Calvin, Oklahoma .....	January
Teaching Farm Electrification—J. R. Hamilton, Teacher Education, East Texas State College .....	January
Improving the Farm Mechanics Program—H. W. Gadda, Teacher Education, South Dakota State College .....	January
Organizing the Farm Mechanics Program—Charles B. Smith, Vo-Ag Instructor for Farm Mechanics, Middletown, Connecticut .....	March
Establishing a Home Farm Shop—Harry L. Strouth, Vo-Ag Instructor, Clintwood, Virginia .....	April
How Far Shall We Go in Farm Mechanics?—Robert E. Bennett, Vo-Ag Instructor, Litchfield, Connecticut .....	May
The Place of Farm Mechanics in Farming Programs—A. E. Weiner, Vo-Ag Instructor, West Bend, Wisconsin .....	June

## FUTURE FARMERS

	Year 1958
It's Time for a Change—I. W. Gerhardt, Vo-Ag Instructor, Madison, Wisconsin.....	August
FFA Forestry Project Proves Profitable—Wesley F. Kent, Vo-Ag Instructor, New Augusta, Mississippi.....	September
Year 1959	
What Is the Obvious in FFA?—Jack Ruch, Teacher Education, University of Wyoming.....	March
Two Kernels of Truth—A. H. Krebs, Teacher Education, University of Illinois.....	March
Providing Leadership for FFA—John B. Swecker, Teacher Education, West Virginia University.....	March
Training for Aggressive Rural and Agricultural Leadership—Zeno E. Bailey, Teacher Education, East Texas State College.....	March
A Student Exchange Program Between FFA Chapters—Donald Hansen, Vo-Ag Instructor, Plattsmouth, Nebraska.....	March
Should Jim Show at the County Fair?—Denver J. Kaiser, Vo-Ag Instructor, Barnesville, Ohio.....	March
Developing State and American Farmers—W. A. Gaharan, Vo-Ag Instructor, Delhi, Louisiana.....	March
Training a Chapter Meeting Team—Ernest Muncrief, Vo-Ag Instructor, Marlow, Oklahoma.....	March
Establishing a Local FFA Scholarship—Rex C. Bishop, Vo-Ag Instructor, Miami Jackson High, Florida.....	March
Collegiate FFA Helps Prepare Future Teachers—Jarrell D. Gray, Teacher Education, Texas A & M College.....	March
Effective FFA Meetings—Wilmer L. Harris, Vo-Ag Instructor, Mechanicsburg, Pennsylvania.....	March
How to Help Your FFA Reporter—Bruce H. Strickling, Vo-Ag Instructor, Frankfort, Ohio.....	March
Training Judging Teams—Olen Smith, Vo-Ag Instructor, Guthrie, Oklahoma.....	March
Mix Business with Pleasure—Clarence R. Evans, Teacher Education, University of Tennessee.....	March
An FFA Mother's Club—John D. Vallot, Vo-Ag Instructor, Sulphur, Louisiana.....	April
Let's All Build a Fair Booth—Joseph B. Randolph, Vo-Ag Instructor, Ceres, California.....	April
Improving Future Farmer Exhibits—P. F. Pulse, Teacher Education, Ohio State University.....	May
The FFA Trip—Roy R. Koss, Vo-Ag Instructor, Algoma, Wisconsin.....	June
The FFA Serves the Community—Art Mullen, Vo-Ag Instructor, Plainfield, Wisconsin.....	June

## GUIDANCE

	Year 1958
Vocational Agriculture Is Good Training for the Part-Time Farm Student's "Other Vocation"—Dallas Cornett, Vo-Ag Instructor, Pleasant School, Marion, Ohio.....	August
Who Should Take Vocational Agriculture in High School?—C. C. Beam, Vo-Ag Instructor, Herndon, Virginia.....	August
Student Development Through On-Farm Instruction—Gerald Yerxa, Vo-Ag Instructor, Madison, Maine.....	September
Year 1959	
Resources for Occupational Guidance in Agricultural Education—Claud Marion, Teacher Education, Maryland State College.....	April
Capsuled Wisdom—A. H. Krebs, Teacher Education, Univ. of Illinois.....	April
Students of Vocational Agriculture Succeed in College—Ralph E. Bender, Teacher Education, The Ohio State University.....	April
Showing the Way—Carmon Parks, Vo-Ag Instructor, Hazel, Kentucky.....	April
Meeting College Entrance Requirements—Wilmer L. Harris, Vo-Ag Instructor, Mechanicsburg, Pennsylvania.....	April
Problems Related to Establishment in Farming—Wayne W. Wolfe, Vo-Ag Instructor, Hermann, Missouri.....	April
Relation Between Home Characteristics of Farm-Reared Senior Boys and Their Occupational Choices—Melvin R. Salmela, Graduate Student, Iowa State College.....	April
The Role of the Vo-Ag Teacher in Occupational Guidance—Robert D. Herr, Vo-Ag Instructor, Boyertown, Pennsylvania.....	April
Are Vo-Ag Graduates Successful in Nonfarm Occupations?—Richard H. Bittner, Graduate Assistant, Iowa State College.....	April
Relation Between High School Vocational Agriculture Training and Status of Graduates in Nonfarm Occupations Related to Farming—Don N. Christensen, Graduate Student, Iowa State College.....	May
Relation Between Home Characteristics of Farm-Reared Male High School Graduates and Their Status in Nonfarm Occupations—Carl Wells, Graduate Student, Iowa State College.....	May
A Ten-Year Study of Former Students of Vocational Agriculture in Six Reorganized School Districts in Missouri—1946 Through 1955—Amos B. Rougeau, Teacher Education, Arkansas State College.....	May
Why Did Johnny Quit Vocational Agriculture?—Philip E. Schmidt, Vo-Ag Instructor, Oconto, Wisconsin.....	May

## PROFESSIONAL

	Year 1958
Who Makes Policies for Vocational Education?—Bonard S. Wilson, U. S. of America Operations Mission to the Philippines.....	July
With These to Guide Us—A. H. Krebs, Teacher Education, University of Illinois.....	July
Local-State-National Cooperation in Agricultural Education—H. M. Hamlin, Teacher Education, University of Illinois.....	July
Viewpoints of School Administrators Regarding Local, State and Federal Relationships in Agricultural Education—Ralph R. Bentley and Frank J. Woerdehoff, Teacher Education, Purdue University.....	July
Administration and Policy Making—Leo L. Knutti, Teacher Education, Montana State College.....	July
Preparation in Soils for "Ag" Instructors—James Blackwell, Vo-Ag Instructor, Joseph, Oregon.....	July
How to Make a Multiple Teacher Program Work—Denver J. Kaiser, Vo-Ag Instructor, Barnesville, Ohio.....	July
What About Training for Agri-Business in the High School?—O. E. Thompson, Teacher Education, University of California.....	August
Agricultural Education in Colombia, South America—Rufus W. Beamer, Teacher Education, University of Tennessee.....	August
Planning the Program in Vocational Agriculture—E. V. Walton, Teacher Education, A. & M. College of Texas.....	August
These Forty Years—James H. Pearson, Assistant Commissioner for Vocational Education, U. S. Office of Education.....	August
No Students Here, Teacher—A. H. Krebs, Teacher Education, University of Illinois.....	August
Vocational Agriculture at the Crossroads—E. V. Walton, Teacher Education, Texas A. & M. College.....	August
Let's Stop Being Our Own Worst Enemy—G. Allen Sherman, Dean of Agriculture Education, Mt. San Antonio Junior College, V. Pres., California Agriculture Teachers' Association.....	August
Future of Agricultural Education—Loyal J. McCann, Vo-Ag Instructor, Marshall, Minnesota.....	August
Looking Ahead in Vocational Agriculture—Louis M. Samsan, Supervisor, Wisconsin.....	August
A Positive Approach to Program Support—Guy E. Timmons, Teacher Education, Michigan State University.....	August
What Basis for Program Adjustments?—W. A. Smith, Teacher Education, Cornell University.....	September
A Voice from Outer Space—W. H. Martin, Teacher Education, U. of Connecticut.....	October
Is It Policy or Action That Is Needed?—A. H. Krebs, Teacher Education, University of Illinois.....	October
How Can I Find the Time?—J. E. Dougan, Supervisor, Ohio.....	November
Ohio's In-Service Training Program—D. R. Purkey, Supervisor, Ohio.....	November
The Land Judging Workshop—Zeno E. Bailey, Teacher Education, East Texas State College.....	November
Teacher Training in Agriculture in Non-Land-Grant Colleges in the United States—William F. Brazziel, Teacher Education, Southern University, Louisiana.....	November
A Method of Professional Improvement—E. W. Garris, Teacher Education, University of Florida.....	November
Need for Passion for Teaching—C. B. Jeter, Area Supervisor, Virginia.....	November
Training for Farming and Agricultural Occupations Other Than Farming—Ward P. Beard, Assistant Director of Vocational Education, U. S. Office of Education.....	December
Tailor to Fit—Paul J. Emerling, Vo-Ag Instructor, Springville, New York.....	December
Let Our Light Shine—John R. Fisher, Vo-Ag Instructor, Pearisburg, Virginia.....	December
Year 1959	
Replanning Agricultural Education in Illinois—H. M. Hamlin, Teacher Education, Univ. of Illinois.....	January
Growing Professionally—Jesse A. Taft, Supervisor, Massachusetts.....	February
Pioneering Spirit Needed!—A. H. Krebs, Teacher Education, University of Illinois.....	February
Pre-Service Teacher Education in Farm Mechanics—Paul N. Stevenson, Teacher Education, Kansas State College.....	February
A Forestry Curriculum for Your School—Luther R. Hiltbrand, Vo-Ag Instructor, Ellington, Missouri.....	February
Why Teachers of Vocational Agriculture Leave the Profession—Edwin E. Lamberth, Vo-Ag Instructor, Spring Hill, Tennessee.....	February
General Agriculture in the Public Schools—Leo Keskinen, Vo-Ag Instructor, Duluth Public Schools, Minnesota.....	February
The Magazine Story—H. M. Hamlin, Teacher Education, University of Illinois.....	February
The Forward Look in Vocational Agriculture—H. N. Hunsicker, Program Specialist, Agriculture Education, U. S. Office of Education.....	March
Could These Problems Be Our Concern?—W. H. Martin, Teacher Education, University of Connecticut.....	April
About the Preparation of Teachers of Agriculture—Henry S. Brunner, Teacher-Education, The Pennsylvania State University.....	May
Professional Growth Is an Active Process—Harold M. Byram, Teacher Education, Michigan State University.....	June
Blind Spot—A. J. Paulus, Teacher Education, University of Tennessee.....	June
The Role of the Area Supervisor—Jesse C. Green, Area Supervisor, Powhatan, Virginia.....	June



SCHOOL-COMMUNITY RELATIONS

	Year 1958
Public Understanding Through Public Relations Programs—Emil S. McCarty, Vo-Ag Instructor, Ringgold, Louisiana.....	July
The Story of Vocational Education on Radio—Forrest S. Aumiller, Vo-Ag Instructor, Tunkhannock, Pennsylvania.....	July
Is It Really a Problem?—T. O. Beach, Vo-Ag Instructor, Casa Grande, Arizona.....	July
Public Relations Program Through Service—James F. Gallant, Educational Manager, Essex County Agricultural School, Massachusetts.....	September
Make Your Work Easier—Duane D. Mortimer, Vo-Ag Instructor, Columbus, Wisconsin.....	October
Let's Not Sell Ourselves Short—J. A. Marshall, Asst. Dir., Agricultural Education, Texas.....	December
How It Happens—A. H. Krebs, Teacher Education, Univ. of Illinois.....	December
Public Relations—Jim J. Pickren, Vo-Ag Instructor, Lewisville, Arkansas.....	December
Interpersonal Relations in the Communications Program—Harold M. Byram, Teacher Education, Michigan State University.....	December
Let's Cooperate with Industry—V. R. Cardozier, Teacher Education, University of Tennessee.....	December
Public Relations Through Exhibits—J. C. Atherton, Teacher Education, Arkansas.....	December
The Coleman Adult Education Advisory Council—Ray Reiff, Vo-Ag Instructor and Principal, Coleman, South Dakota.....	December
Long-Time Advantages of the Advisory Committee—Ralph J. Woodin, Teacher Education, Ohio State University.....	December
Effective Public Relations—Everett D. Edington, Graduate Student, U. of Arizona.....	December
Winnboro Advisory Council—R. E. Johnson, Vo-Ag Instructor, Winnboro, Texas.....	December
	Year 1959
Public Relations—A Critical Problem in Rural School Improvement—Curtis E. Sheehan, Vo-Ag Instructor, Sun Prairie, Wisconsin.....	January
The Vo-Ag Teacher—A Resident School Ambassador—Lacy E. Cochran, Vo-Ag Instructor, Mathias, West Virginia.....	January
Do People Like You?—Robert H. Hargrave, Vo-Ag Instructor, Winter Garden, Florida.....	January
Public Relations Devices—Lester A. Armand, Vo-Ag Instructor, Kinder, Louisiana.....	February
Teacher's Responsibility to Keep Public Informed—W. R. Brown, Teacher Education, University of Georgia.....	February
Public Relations and Adult Farmer Classes—L. P. Hudson, Vo-Ag Instructor, Huddleston, Virginia.....	June

SUMMER PROGRAMS

	Year 1959
Plan or Drift—Charles W. Hill, Teacher Education, Cornell University.....	May
Something to Fight For—A. H. Krebs, Teacher Education, University of Illinois.....	May
Summer Adult Farmer Program—Lloyd J. Phipps, Teacher Education, University of Illinois.....	May
Making Hay While the Sun Shines—E. Glenn Fogle, Vo-Ag Instructor, Kenova, West Virginia.....	May
Summer Preparation and Organization of Facilities for the Coming Year—D. A. Storms, County Supervisor, Plant City, Florida.....	May

TEACHING METHODS AND MATERIALS

	Year 1958
Good Farm Visits not "just a dream"—Nathan Knight, Vo-Ag Instructor, Keene, New Hampshire.....	July
Conducting On-Farm Instruction—Lewis Chambers, Vo-Ag Instructor, Smethport, Pennsylvania.....	July
Improving Techniques of Instruction—C. E. Bundy, Teacher Education, Iowa State College.....	November
"Student Planning" or "Student-Teacher Planning"?—A. H. Krebs, Teacher Education, University of Illinois.....	November
A Land Laboratory—T. A. Cochran, Vo-Ag Instructor, Fort Meade, Florida.....	November
Teaching Accounting by Deduction—J. O. Tressler, Vo-Ag Instructor, Greenwich, Ohio.....	November
Charts, Graphs, and Tables—D. E. McPherson, Vo-Ag Instructor, Bartlett, Tennessee and V. R. Cardozier, Teacher Education, University of Tennessee.....	November
Soil Color Made Easy—Ellery L. Knake, Teacher Education, University of Illinois.....	November
Planning a Series of Slides for Teaching—Carl R. Stotz, Vo-Ag Instructor, West Unity, Ohio.....	November
Operating a Movie Projector—Gerald O. Stephens, Wheeling Electric Co., West Virginia.....	November
How to Use Charts Effectively—Frank Anthony, Teacher Education, Pennsylvania State University and Members of Agricultural Education 420 Class in Audio-Visual Aids.....	November
Using Teaching Aids—J. Y. Terry, Vo-Ag Instructor, Dodson, Louisiana.....	November
The Use of Audio-Visual Aids—Ray Gilbertson, Vo-Ag Instructor, Stevens Point, Wisconsin.....	November
Human Resources for Teaching—Vincent M. Salmon, Vo-Ag Instructor, Benson, Arizona.....	November
Central Library Records for the Departmental Agricultural Reference Collection—Kenneth I. Taylor, Librarian, Franklin Park, Illinois.....	December
A Student Teacher Develops a Teaching Aid—Robert Lakics, Student Teacher, Owosso, Michigan.....	December
A Daylight Projection Booth—M. D. Federer, Vo-Ag Instructor, Saratoga, Wyoming.....	December

	Year 1959
City Farmers—H. Quentin Duff, Vo-Ag Instructor, Miami, Florida.....	February
Forestry Plots in Arkansas—J. C. Atherton, Teacher Education, Arkansas.....	February
Curriculum Improvement in Vocational Agriculture—John E. Miller, Administrative Assistant to the Superintendent of Schools, Centreville, Maryland.....	April
Integration in Agriculture—Dewey K. Brumbaugh, Vo-Ag Instructor, Ebensburg, Pennsylvania.....	May
What Is Farm Management?—J. H. Herbst, Vocational Agriculture Service and Agricultural Economics, University of Illinois.....	June

YOUNG AND ADULT FARMER EDUCATION

	Year 1958
What are the Needs of Young Farmers?—Bruce A. Gaylord, Supervisor, Vermont.....	September
College Short Courses Aid Teachers of Young and Adult Farmers—Fred C. Snyder, Acting Director of Short Courses, Pennsylvania State University.....	September
What Makes a Young Farmer Chapter Tick?—Zeno E. Bailey, Teacher Education, East Texas State College.....	October
The Responsibility of Vocational Agriculture in Providing Adult Education—H. T. Pruet, Teacher Education, Alabama Polytechnic Institute.....	October
Adult Class Promotes Production and Consumption—Paul Walker, Vo-Ag Instructor, Newton, Illinois.....	October
Effective Agricultural Instruction—Walter G. Fischgrabe, Vo-Ag Instructor, Wheatland, Missouri.....	October
An Adult Farmer Education Program—Celestino P. Habito, Teacher Education, Central Luzon Agricultural College, Nueva Ecija, Philippines.....	October
State Young Farmer Organization Encourages Better Local Programs—F. J. Ruble, District Supervisor, Ohio.....	October
Organizing a Young Farmer Association—Roy L. Buffington, Vo-Ag Instructor, Gonzales, Texas.....	October
Advanced Farm Training for Young Farmers—Carl C. Hoyt, Asst. to Director of Short Courses, Michigan State University.....	October
Education for Young Farmers—Robert R. Price, Teacher Education, Oklahoma State University.....	October
Organizing a 100 Bushel Corn Club—Robert C. Hatfield, Vo-Ag Instructor, Marcellus, Michigan.....	October
Teaching Adults—H. E. Throckmorton, Vo-Ag Instructor, Milton, West Virginia.....	November
	Year 1959
Conducting the Young Farmer Program—C. B. Feagans, Vocational Agriculture Instructor, Amherst, Virginia.....	April
Daytime Out-of-School Classes—Duane Everett, Vo-Ag Instructor, Nehawka, Nebraska.....	May
Effective On-Farm Instruction for Young and Adult Farmers—L. B. Fidler, Supervisor, Ohio.....	May
A Young Farmer Program—J. C. Hollis, Vo-Ag Instructor, Spring Garden, Alabama.....	June

MISCELLANEOUS

	Year 1958
Themes for Volume 32 of <i>The Agricultural Education Magazine</i> .....	February
News and Views of the Profession.....	February
Tips that Work.....	March
News and Views of the Profession.....	March
News and Views of the Profession.....	July
Studies in Progress in Agricultural Education during 1957-1958.....	July
Index to Volume XXX.....	August
News and Views of the Profession.....	September
Remember the Farmer's Wife—J. Wesley Haer, Vo-Ag Instructor, Shippensburg, Pa.....	October
News and Views of the Profession.....	October
News and Views of the Profession.....	November
News and Views of the Profession.....	December
Tips that Work.....	December

	Year 1959
News and Views of the Profession.....	January
Sally Ann Is Your Competitor—J. C. Potts, Vo-Ag Instructor, Kembridge, Virginia.....	April
News and Views of the Profession.....	May
Tips that Work.....	June
Professional and Teaching Aids.....	June
News and Views of the Profession.....	June

BOOK REVIEWS

	Year 1958
<i>Atomic Energy in Agriculture</i> —William E. Dick.....	October
<i>Demonstrations for Farm Mechanics</i> —Michael O'Brien.....	October
<i>Profitable Poultry Production</i> —E. D. Parnell.....	November
<i>Basic Animal Husbandry</i> —John M. Kays.....	November
<i>A Textbook of Dairy Chemistry</i> —Edgar R. Ling.....	December
<i>Veterinary Handbook for Cattlemen</i> —J. W. Bailey.....	December
<i>Mineral Nutrition and the Balance of Life</i> —Frank A. Gilbert.....	December
<i>Pruning Made Easy</i> —Edwin F. Steffek.....	December
<i>Shop Tools—Care and Repair</i> —Dewitt Hunt.....	December
<i>Commercial Fruit and Vegetable Products</i> —W. V. Cruess.....	December

	Year 1959
<i>American Agriculture: Geography, Resources, Conservation</i> —Edward Higbee.....	January
<i>Electricity in Agricultural Engineering</i> —Truman E. Henton, Dennis E. Wiant, and Oral A. Brown.....	January
<i>Land Resource Economics</i> —Raleigh Barlow.....	February
<i>Farm Management</i> —Lynn S. Robertson.....	April
<i>Crop Production in the South</i> —Glenn C. Klingman.....	April
<i>Managing Southern Soils</i> —H. B. Vanderford.....	May
<i>Dairy Cattle Judging Techniques</i> —George W. Trimberger.....	May
<i>Southern Hog Growing</i> —C. C. Scarborough.....	May
<i>Basic Animal Husbandry</i> —John M. Kays.....	June
<i>Fundamentals of Soil Science</i> —C. E. Millar, L. M. Turk, and D. H. Foth.....	June
<i>Soil Chemical Analysis</i> —M. L. Jackson.....	June
<i>Soils: An Introduction to Soils and Plant Growth</i> —R. L. Donahue.....	June

# The Agricultural Education Magazine

Index to Volume XXXI  
July, 1958 - June, 1959

## AUTHORS

- Allen, Kenneth, Vo-Ag Instructor..... 56  
 Anthony, Frank, Teacher Education..... 106  
 Armand, Lester A., Vo-Ag Instructor.... 182  
 Atherton, J. C., Teacher Education..... 130  
 Aumiller, Forrest S., Vo-Ag Instructor.... 12
- Bailey, Zeno E., Teacher Education.....76, 113, 200  
 Ball, Wilbur P., Agricultural Education Specialist ..... 149  
 Beach, T. O., Vo-Ag Instructor..... 17  
 Beam, C. C., Vo-Ag Instructor..... 34  
 Beamer, Rufus W., Teacher Education.... 35  
 Beard, Ward P., U.S. Office of Education 128  
 Bell, Arthur P., Teacher Education..... 248  
 Bender, Ralph E., Teacher Education..... 220  
 Beneke, Raymond R., Department of Economics ..... 269  
 Bennett, Robert E., Vo-Ag Instructor..... 254  
 Bentley, Ralph R., Teacher Education..... 5  
 Bishop, Rex C., Vo-Ag Instructor..... 208  
 Bittner, Richard H., Graduate Assistant... 228  
 Blackwell, James, Vo-Ag Instructor..... 16  
 Boling, Glen, Vo-Ag Instructor..... 66  
 Brazziel, William F., Teacher Education... 116  
 Brown, W. R., Teacher Education..... 183  
 Brum, H. D., Supervisor..... 184  
 Brumbaugh, Dewey K., Vo-Ag Instructor 249  
 Brunner, Henry S., Teacher Education.... 251  
 Buffington, Roy L., Vo-Ag Instructor..... 84  
 Bundy, C. E., Teacher Education..... 99  
 Byram, Harold M., Teacher Education .....125, 223, 280
- Cardozier, V. R., Teacher Education..... 127  
 Chambers, Lewis, Vo-Ag Instructor..... 16  
 Christensen, Don N., Graduate Student... 256  
 Cochran, Lacy E., Vo-Ag Instructor..... 163  
 Cornett, Dallas, Vo-Ag Instructor..... 32  
 Cross, D. S., Vo-Ag Instructor..... 205
- Day, Robert C., Vo-Ag Instructor..... 150  
 Dougan, J. E., Supervisor..... 111  
 Duff, H. Quentin, Vo-Ag Instructor..... 185
- Edington, Everett D., Graduate Student... 134  
 Emerling, Paul J., Vo-Ag Instructor..... 131  
 Evans, Clarence R., Teacher Education.... 202  
 Everrett, Duane, Vo-Ag Instructor..... 258
- Feagans, C. B., Vo-Ag Instructor..... 232  
 Federer, M. D., Vo-Ag Instructor..... 141  
 Fidler, L. B., Supervisor..... 246  
 Fischgrabe, Walter G., Vo-Ag Instructor... 79  
 Fisher, John R., Vo-Ag Instructor..... 134  
 Fogle, H. Glenn, Vo-Ag Instructor..... 245  
 Foote, Leland, Vo-Ag Instructor..... 272
- Gadda, H. W., Teacher Education.....51, 157  
 Gaharan, W. A., Vo-Ag Instructor..... 206  
 Gallant, James F., Educational Manager... 70  
 Garris, E. W., Teacher Education..... 117  
 Gaylord, Bruce A., Supervisor..... 63  
 Garhardt, L. W., Vo-Ag Instructor..... 40  
 Gilbertson, Ray, Vo-Ag Instructor..... 108  
 Gray, Jarrell D., Teacher Education..... 208  
 Gray, Wm. Paul, Nat. Exec. Sec. of FFA 52  
 Green, Jesse C., Area Supervisor..... 275
- Habito, Celestino P., Teacher Education 81  
 Hamilton, J. R., Teacher Education..... 155  
 Hamlin, H. M., Teacher Education....4, 152, 181  
 Hansen, Donald, Vo-Ag Instructor..... 202  
 Hargrave, Robert H., Vo-Ag Instructor... 164  
 Harris, Wilmer L., Vo-Ag Instructor.....209, 237  
 Hemp, Paul E., Teacher Education..... 173  
 Herbst, J. H., Vocational Agr. Service... 276  
 Herr, Robert D., Vo-Ag Instructor..... 227  
 Hill, Charles W., Teacher Education..... 243  
 Hinkle, Edgar N. Jr., Vo-Ag Instructor... 150  
 Hoefft, R. L., Vo-Ag Instructor..... 273  
 Hollis, J. C., Vo-Ag Instructor..... 278  
 Hoyt, Carl C., Director of Short Courses 88  
 Hudson, L. P., Vo-Ag Instructor..... 284  
 Hunsicker, H. N., U.S. Office of Education 197
- James, Gerald B., Teacher Education..... 267  
 Jeter, C. B., Supervisor..... 103  
 Johnson, R. E., Vo-Ag Instructor..... 137
- Kaiser, Denver J., Vo-Ag Instructor.....8, 203  
 Kent, Wesley F., Vo-Ag Instructor..... 68
- Keskinen, Leo, Vo-Ag Instructor..... 176  
 Knake, Ellery L., Teacher Education..... 101  
 Knight, Nathan, Vo-Ag Instructor..... 17  
 Knuti, Leo L., Teacher Education..... 13  
 Koble, Daniel E., Vo-Ag Instructor..... 85  
 Koss, Roy R., Vo-Ag Instructor..... 282  
 Krebs, A. H., Teacher Education.....3, 27, 51, 75, 99, 123, 147, 171, 195, 219, 243, 267
- Lakics, Robert, Student Teacher..... 140  
 Lamberth, Edwin E., Vo-Ag Instructor.... 174  
 Lynch, Paul R., Vo-Ag Instructor..... 110
- Marion, Claud, Teacher Education..... 219  
 Marshall, J. A., Asst. Dir. Agricultural Education ..... 123  
 Martens, D. W., Teacher Education..... 58  
 Martin, W. H., Teacher Education.....75, 235  
 Masters, Glenn H., Vo-Ag Instructor.... 274  
 Matthews, John W., Teacher Education... 147  
 McCann, Loyal J., Vo-Ag Instructor..... 45  
 McCarty, Emil S., Vo-Ag Instructor..... 11  
 McGhee, Claude, Vo-Ag Instructor..... 53  
 McPherson, D. E., Vo-Ag Instructor..... 100  
 McQueen, F. T., Teacher Education..... 268  
 Miller, John E., Asst. to the Superintendent of Schools..... 236  
 Mortimer, Duane D., Vo-Ag Instructor... 88  
 Mullen, Art, Vo-Ag Instructor..... 283  
 Muncrief, Ernest, Vo-Ag Instructor..... 206
- Nohle, Ernest F., Supervisor..... 148
- Parks, Carmon, Vo-Ag Instructor..... 221  
 Paulus, A. J., Teacher Education..... 275  
 Pearson, James H., U.S. Office of Education ..... 27  
 Peck, Dwight L., Vo-Ag Instructor..... 154  
 Peterson, Milo J., Teacher Education... 58  
 Phipps, Lloyd J., Teacher Education.... 244  
 Pickren, Jim J., Vo-Ag Instructor..... 124  
 Price, Robert R., Teacher Education..... 89  
 Pruett, H. T., Teacher Education..... 77  
 Pulse, P. F., Teacher Education.....247  
 Purkey, D. R., Supervisor..... 112
- Reiff, Ray, Vo-Ag Instructor..... 131  
 Robinson, Ted R., Teacher Education.... 269  
 Rougeau, Amos B., Teacher Education.... 259  
 Ruble, F. J., District Supervisor..... 83  
 Ruch, Jack, Teacher Education..... 195
- Salmela, Melvin R., Graduate Student... 233  
 Salmon, Vincent M., Vo-Ag Instructor.... 109  
 Sasman, Louis M., Supervisor.....46, 54  
 Schmidt, Philip E., Vo-Ag Instructor..... 260  
 Schweikhard, Earl, Exec. Sec. Oklahoma FFA Assoc. .... 153  
 Sheehan, Curtis E., Vo-Ag Instructor.... 162  
 Sherman, G. Allen, Agriculture Education 43  
 Smith, Charles B., Vo-Ag Instructor..... 207  
 Smith, Olen, Vo-Ag Instructor..... 204  
 Smith, W. A., Teacher Education..... 62  
 Snyder, Fred C., Director of Short Courses 69  
 Stephens, Gerald O., Wheeling Electric Co. .... 105  
 Stevenson, Paul N., Teacher Education... 172  
 Storms, D. A., County Supervisor..... 249  
 Stotz, Carl R., Vo-Ag Instructor..... 105  
 Strickling, Bruce H., Vo-Ag Instructor... 209  
 Strouth, Harry L., Vo-Ag Instructor..... 230  
 Swecker, John B., Teacher Education.... 196
- Taft, Jesse A., Supervisor..... 171  
 Taylor, Kenneth I., Librarian..... 136  
 Terry, J. Y., Vo-Ag Instructor..... 107  
 Thompson, O. E., Teacher Education..... 29  
 Throckmorton, H. E., Vo-Ag Instructor... 104  
 Timmons, Guy E., Teacher Education..... 47
- Walton, E. V., Teacher Education.....28, 41  
 Walker, Paul, Vo-Ag Instructor..... 78  
 Weiner, A. E., Vo-Ag Instructor..... 279  
 Wells, Carl, Graduate Student..... 260  
 Wilson, Bonard S., U.S. of America Operations, Philippines..... 3  
 Woerdehoff, Frank J., Teacher Education 5  
 Wolfe, Wayne W., Vo-Ag Instructor..... 226  
 Woodin, Ralph J., Teacher Education.... 133
- Yerxa, Gerald, Vo-Ag Instructor..... 57

# Implications of Sputnik for the Teaching of Vocational Agriculture

W. R. BROWN, Teacher Education, University of Georgia

The impact of the news of the successful launching of an earth satellite by Russia ahead of the United States may have caused some people to panic, to go off on a tangent, to want to throw out the window certain educational practices and principles that have made this country great. It should not, however, result in the abandonment of vocational education in agriculture by the public school system; neither should it result in the abandonment by vocational agriculture of its basic philosophy nor its tested teaching procedures and techniques. Effective instruction in vocational agriculture has always been based upon the extensive use of the findings of research and the application of scientific principles to the solution of farm problems.

*Nature of Vocational Agriculture.* There is much evidence to indicate that vocational agriculture, to a greater extent than any other high school course, has taken the findings and principles of mathematics, biology, chemistry, physics, and the other sciences, as well as certain of the arts, and made practical application of these findings and principles to the solution of everyday farm and home problems—problems that are very real to the farm boys and adult farmers in vocational agriculture classes. This functional use of scientific information has been even more effective because teachers of agriculture have not been handicapped in their teaching by the use of a single textbook for a given class. Instead, they have been able to draw from numerous sources the latest factual information and the findings of science, as recorded in many reference books, bulletins, pamphlets, leaflets, magazines, newspapers, et cetera, and to lead their students to analyze such data and to utilize the facts contained therein in working out solutions to the critical problems which they face from day to day in conducting their farming operations. In fact, real problem solving in learning *demands* that factual information of many kinds and from many sources be utilized in the teaching-learning process in order that students may be intelligent about their problems. It demands, also, that students be trained (1) to seek actively the best available

scientific information, (2) to analyze, interpret and evaluate such information, and (3) to make application of appropriate facts in solving their problems.

*Applied Science.* Think of the *mathematical principles* applied in "measuring land," in "calculating bills of material" for shop projects and in "keeping farm records." Think of the *biology* involved in the study of problems concerned with "breeding livestock," "selecting seed," or "controlling disease and insect pests of crops and livestock." Consider the practical *chemistry* involved in the study of problems related to "fertilizing crops," "feeding poultry and livestock," and "controlling diseases and insects in the garden." Think of the *physics* involved in problems concerned with "conserving soil and water resources," "planning an irrigation system" or "planning an electrical wiring system for the farm." Yes, scientific facts of many kinds are needed and used in the study of farm problems, around which courses in vocational agriculture are built.

*Accomplishments of Vocational Agriculture.* Look at the appreciation students of vocational agriculture have gained for the findings of science, at their skill in seeking out the latest and best scientific information on a given problem, at their ability in applying such information to the solution of problems in agriculture. No other country in the world today enjoys such an abundance of agricultural production, thanks to the progress made by farmers in utilizing scientific information. Vocational agriculture is due a large share of the credit for this progress. However, the education which students of vocational agriculture have received is also valuable to them in preparation for other vocations. Look at the success former vocational agriculture students have attained in many, many occupations other than farming, because they have learned to think intelligently about problems of all kinds with which they are confronted.

*Implications of Sputnik for Vocational Agriculture.* However, the advent of Sputnik does call for some reappraisal of course content and the

relative emphasis to be placed upon the various problems as well as the kinds and amount of scientific information to be used in seeking solutions to the many problems with which farm people are confronted. It may be that relatively greater attention should be given to assisting students (1) in acquiring increased understandings of basic scientific facts and principles and (2) in utilizing somewhat greater quantities and kinds of scientific information in the study of various farm and home problems which demand solution. And there may be a need, in some instances, for less emphasis on *what solution is found for a given farm problem* and correspondingly more emphasis on *what happens to the student while he is working out the solution to the problem*; what attitudes, abilities, and understandings he actually acquires.

*Basic Questions.* With the above as a background, it seems desirable to ask certain questions relative to the use of more scientific information in the study of vocational agriculture. Three pertinent questions that arise at this point are:

1. What criteria should be used in determining the kind and amount of scientific information to include in the study of a specific problem area (or job) in vocational agriculture?
2. What are the broad, general types of scientific information which may be included in the over-all instructional program in vocational agriculture?
3. How and when should scientific information be used in solving problems dealt with in vocational agriculture?

Each of the above questions will now be dealt with separately.

*Criteria for determining kind and amount of scientific information to use in study of a specific problem area (or job):*

1. Is the information related to the specific problem area (or job) currently being studied?
2. Will the information contribute to a better understanding of and/or solution to the problem(s) being studied?
3. Is the information adapted to the age-ability (or grade) level of the students?
4. Are adequate references containing the information available for use of students as they study the problem(s)?
5. Are adequate teaching aids

available for use in relating the information to the problem(s) at hand?

6. Is the teacher of agriculture adequately qualified to lead the students in analyzing and interpreting the information in its relationship to the problem(s)?
7. If not, is another person (or persons) available to lead students in analyzing and interpreting the information as it applies to the problem(s) at hand?
8. Is the time allotted to the given problem area (or job) adequate for examining *all* the pertinent scientific information available?
9. If not, which of the available scientific information seems most essential to a satisfactory solution to the problem(s)?
10. Is the source of the information generally considered to be reliable?
11. Is the information organized in such a manner that the whole truth is revealed?

*Broad, general types of scientific information to include in the instructional program in vocational agriculture:*

1. Basic technical information about fertilizer carriers (nature of, analyses, chemical reaction, etc.).
2. Basic technical information about characteristics and functions of various fertilizer elements.
3. Basic technical information about land classes and principal soil types in given section of state.
4. Basic technical information about breeds and breeding of livestock (origin and characteristics of various breeds, how breeds are established, meaning of purebred, etc.).

5. Basic technical information about characteristics of more important insect enemies of farm crops (how they feed, life cycle, etc.); also diseases.
6. Basic technical information about more important livestock diseases; also parasites and insect pests.
7. Basic technical information about farm machinery operation (principles of draft, suction, load, speed of operation, safety, etc.).
8. Basic technical information about maintenance and repair of farm machinery (component parts of engines, etc., and how they function; also information about oils, greases, rust preventives, welding equipment, etc.).
9. Basic technical information about electricity and its use on the farm (include: nature of, planning wiring systems, etc.).
10. Basic technical information about hand tools (their component parts, uses, care, etc.); also power tools.
11. Basic technical information about plant breeding (hybrid corn, etc.).
12. Application of mathematical principles and formulae to solution of agricultural problems (bd. ft., interest, sq. rt., and certain practical algebraic formulae).

*How and when to use scientific information in solving problems dealt with in vocational agriculture:*

1. Use in introducing a given problem area (or job) to create interest in or concern about the problems involved and to arouse a desire to solve the problems—show scope of problem, nature of problem, cause of problem, etc. (use statistical

data, experimental findings, mathematical and chemical formulae, etc.).

2. Use as testing material or related information at the opportune time to assist students in understanding and thinking through each specific problem in the job, as:
  - a. Information about the various carriers of fertilizer elements, in connection with such problems as: "what kind of fertilizer to use on tobacco plant beds?"
  - b. To be a bit more specific, information about the various forms and carriers of *nitrogen* in connection with "what kind (or form) of nitrogen to use in top dressing oats?"
  - c. Experimental data showing results of using various kinds and amounts of feed on milk production in connection with the problems of "what kind and amount of feed to feed a dairy cow during lactation?"
  - d. Information about various kinds of insects (manner of feeding, life cycle, etc.) in connection with "what control measures to use for garden insects?"
  - e. After the class has analyzed a particular piece of information that seems to teacher and students to be particularly important to the understanding and/or solution of the given problem(s) and which may be needed for future reference, the teacher usually should lead the students to record this information in their notebooks in good form. □

## Adapting Instruction to Individual Differences

RAY H. SIMPSON, Prof. of Educational Psychology, University of Illinois

As a psychologist, my main base for ideas on the problem, "Adapting Instruction to Individual Differences," rests on experimental research evidence. As one examines the multitude of research studies relating to this problem, the direct conclusions from the studies are not too clear. However, one fact does appear to stand

out quite clearly: "Active teacher experimentation and study seems almost invariably to produce improved results in teaching and learning." Let me re-emphasize that statement since the whole gist of our remarks rests on the essence of this idea: An over-all review of hundreds of research studies reveals that almost invariably teaching

and learning will test out better if teachers are actively researching themselves. The particular nature of the investigation into methods or approaches that the teacher carries on does not seem to be of paramount importance. The key factor seems to be this: The teacher *is consciously* and carefully studying and investigating



his procedures and trying to improve them.

Why is it that careful classroom research would seem to be so profitable from an improvement standpoint? I suggest several hypotheses: a first hypothesis is that as the teacher studies, he can add some practices that are better than those he has been using; a second, and I would judge an even more important one, is that the teacher who necessarily is trying to stimulate and promote active learning in his students is actually setting a good example of active, systematic learning. In the remainder of this article, let me pursue with you some possible avenues for exploiting this research finding that active teacher learning and research is one of the best ways of attacking the problem of individual differences.

In the first place, it must be pointed out that there is no magic formula that can be given to us as teachers whereby we can overnight radically improve our handling of individual differences. The road to improvement in taking care of individual differences is similar to the road to improved farming practices. It involves careful study and experimentation and re-study and re-experimentation in order to develop improved practices either in the field of farming or in the field of teaching.

We would suggest that the major approach which we as teachers can take is one of experimenting, studying, more experimenting, and more studying with a record kept of what is done and how it turns out in our own classes. The objection may be raised by some that experimentation is dangerous to the youngster. If a teacher does not know how good his current practices are, if these practices have not been objectively evaluated in terms of efficiency, it is probably no more likely to be harmful to students to try different practices which have been carefully thought out than to continue to try and use relatively unproved practices. Thus, in effect, we are saying all teaching is, to some extent, experimentation and, whether we like it or not, we are experimenting even if we do not do it systematically and rationally.

With the idea that teachers of agriculture might be interested in some suggestions as to exactly how you can go about experimenting in your own classes to better take care of individual differences, I am going to spend the major part of the remainder of the paper in suggesting some specific

ways that you can consider experimenting in your classes.

#### Experiment with Cooperatively Developed Evaluative Criteria

The first major approach we would suggest you consider trying is that of having students *help* set up the evaluative criteria they think would aid in improving the work in their classes. Such student development of evaluative criteria is likely to encourage ego-involvement on the part of the students; it tends to help them feel that it is their class as well as the instructor's class.

How can we approach this area of experimentation? A suggested procedure might be the following:

First, use alternate classes for experimentation and compare them with the other classes that are not so used. For setting up evaluative criteria, in about the second week of classes, have each individual student suggest criteria he thinks should be used in evaluating the work of the course. One or two examples might be given by the teacher as starters to the students.

Second, have the class, if it is a small one, or small groups, if the class is large, critically analyze, refine, and combine raw criteria suggested by individual students.

Third, actually employ the criteria: (a) by having each student self-evaluate using the criteria; and (b) by using criteria yourself for rating and marking students' work and helping them in the future. This type of experimentation is likely to help individual students see the purposes of a course, analyze their own strengths and weaknesses, and aid them in thinking more about the possible values of the course for them. It should be pointed out that in any case there will still be students without particularly desirable motivation, students without as much progress as we would like to have made. However, it is a matter of improving our batting average a little bit rather than having complete success.

#### Teacher-Pupil Planning Committee

Secondly, we urge you to consider experimenting with a teacher-pupil planning committee. Such a committee should meet regularly, possibly at lunchtime, or at some other mutually convenient time. Such a committee should give continuous consideration and reconsideration to such problems as the following: How can course goals be clarified and modified to take

care of individual differences? Individual student goals can be gathered, and the teacher goals can be made known to the students. Through talking it out in the planning committee sessions, these goals can be reconciled.

A second question for the planning committee: How might the course organization profitably be modified? For example, early in the semester the weekly planning committee might be briefed on the teacher's proposed organization of the course. The teacher could lay out to student members of the committee his proposed pattern for the rest of the course. If the unit approach is used he could indicate units and how he proposed to handle them. The order or sequence of the units could also be indicated. Suggestions for improvements could be got at this point and on a regular and continuous basis as the semester proceeds.

A third question for the committee might be: What are the uses and limitations of segregated subject organization, as opposed, for example, to cross-sectioning of subject matter according to problems? Also, as suggestions are got from the students, plans can be made so that there will be elasticity in the organization and in the assignments that will help take care of individual differences without undesirable overlap in what is studied from semester to semester and from year to year.

Such an active teacher-student planning committee can also provide the teacher with continuous feedback from the students. Students will frequently voice comments and/or criticisms about a course more readily to another student who is on the planning committee than to the instructor. We have found, for example, that students on such committees will sometimes voice their own criticisms as "a particular student seemed to think this," where probably he would not say it directly to the instructor. Such application of what might be called a cybernetic principle, a feedback principle, to classroom operation can improve the handling of individual differences. We have also found, for example, that students tend to take more interest in the class and tend to suggest approaches that the instructor had not thought of but which, when pointed out, seemed better to the instructor than those he had originally planned. This process of communication can also be reversed in that the teacher explains reasons for procedures in such a way that not only the students on the com-

mittee have a clear understanding of the purpose of the study but also they in turn will feed back many of these points of view to other students who at this particular time are not on the committee.

Some question might be raised as to how it would be desirable to get such a committee. Some teachers have found it desirable to experiment with teacher appointed committees, with student elected committees, or with some combinations of these two procedures. We have also found that a usable procedure seems to be simply to take the roll and start with the first three or four or five members as the committee for the first planning meeting. Then, in each subsequent meeting, the first person on the list drops out and the next person on the alphabetical roll of the class joins the committee. This procedure provides continuity to the planning committee and also gives each class member a chance to sit in with the planning committee and experience some work in planning the course.

It might be pointed out that such a procedure gives students not only a better insight into the organization of the vocational agriculture course and perhaps a better motivation for the course, but it also gives students valuable practice in group work, planning, and social development which many high school students need very, very much.

#### Gather Ideas from Spring Class for Fall Class

The third major suggestion for experimentation is that we attempt systematically to gather more ideas from the students of one year that we can try out and use for improving our teaching and learning the following year. For example, at the end of the year students may be asked to list what particular books, pamphlets, newspaper articles, bulletins or other types of materials were found most useful by the individual student. Such lists, when summarized, can give the teacher a better picture of individual differences in the types of materials that can be used appropriately for different students. We have found that two students with apparently very similar backgrounds and about the same ability—reading ability and mental ability—frequently seem to find two quite different types of material of most interest and value. This procedure of getting specific student reactions to specific materials helps us re-evaluate our resource planning for

the following year.

Another question which some of you have used with students and which might possibly be developed more would be this: How might it be desirable to change the course next year so that the students will find it more profitable? Or, what did you like about the class we have had? In what unit do you feel you learned the most? Why? What things, if any, in the course seemed to you unnecessary? Also, at the end of the semester, the students themselves can be asked to help develop a questionnaire that will get at some of the types of things that have just been mentioned.

In addition to written answers, it is sometimes profitable to get a picture of how individual differences were taken care of and how they could be handled better by having a student leader of a discussion of the course; this would or at least might be at the end of the semester or year with the instructor absent from the room. A secretary or recorder would be asked to take notes on suggestions that have been made in the class and these can be passed on to the instructor and he can get a picture of the gist of the discussion. This does not mean, of course, that the instructor will use all the comments or suggestions but it does give him some picture of types of things that students felt in their perspectives about the course.

Also, it is frequently desirable in this connection to ask students early in the year or semester to keep a record of the ideas they have about the course, about what is happening in the course. These records can form the basis for improvement of the course the following year.

Before I take up the next major suggestion for researching with your classes, I would like to point out that the approaches that have been suggested on experimentation and the ones that will be suggested later will aid in a transfer of the training to out-of-school situations as well as helping take care of individual differences. In other words, students are likely to practice out-of-school more of what they learn if these types of researching are carried on.

#### Experiment with Student Leadership

The fourth major suggestion we would make with respect to taking care of individual differences is that of experimenting to a greater extent with student leadership. Basically, what we are suggesting is that, for example, instead of attempting to

have a class of 24 student followers and one teacher as leader that we attempt to have 25 leaders—24 student leaders plus the teacher, making 25. For most of us to attempt this sort of thing successfully, it is desirable that we study how to develop leaders and how to encourage the productive use of groups. For example, Cartwright and Zander's book on *Group Dynamics*<sup>1</sup> and the book *Small Groups*<sup>2</sup> by Hare and others would both be helpful in giving us a background for attempting this type of experimentation.

In using student leaders, many of the responsibilities that teachers have traditionally monopolized with respect to leadership can gradually be passed over to students. Such student leadership gives them excellent training in leadership as well as helping the teacher solve the problem of having enough time to do all the things that are necessary if individual differences are to be handled with a reasonable degree of success.

Alice Miel<sup>3</sup> in her excellent book, *Cooperative Procedures in Learning* indicates the following: "... a teacher must resist the temptation to postpone indefinitely the job of helping others to acquire skill in leadership in the only way these skills can be acquired—through actual practice. The teacher need not wait until he has perfected his own techniques before letting another try his hand. Observation of his group under pupil leadership gives the teacher an opportunity to study the strengths and the needs of his pupils in a group situation as well as to see his own leadership techniques often mirrored in the child leader." (p. 344)

In attempting to develop and utilize student leaders, it is important that we avoid the tendency which some teachers have of encouraging or using a laissez-faire type of guidance. A laissez-faire type of situation with student leaders is likely to degenerate into chaos or near chaos. It is important that the teacher learn how to utilize more effectively democratic teacher guidance when working with student leaders. In utilizing democratic guidance, it does not mean that the teacher abdicates his job as key leader in the class. It simply means

<sup>1</sup>Cartwright, D., and Zander, A. *Group Dynamics*. Evanston, Illinois: Row, Peterson, 1953.

<sup>2</sup>Hare, A. P., and others. *Small Groups*. New York: Knopf, 1955.

<sup>3</sup>Miel, A., *Cooperative Procedures in Learning*. New York: Bureau of Publications, Teachers College, Columbia University, 1952.

that the teacher is sharing the leadership role with others in the interests of utilizing their intelligence, their ideas, and their abilities to help the class move ahead. Twenty-five leaders with appropriate guidance in a class are certainly better than only one leader who has to try to take care of all the roles of a leader.

Student leadership may take many forms. One form is the use of pairs for planning for study, or for evaluation. Another use is that of having groups ranging in size, let us say, from about three to seven or eight. Another type of group leadership that can and should be developed is student leadership of the whole class under teacher tutelage. Each of these types of situations again gives the student a chance to develop much needed social skills as well as to permit the teacher to do a better job of taking care of individual differences. After a period of training by the teacher, many of the jobs currently monopolized by the teacher can well be assumed by students, and this frees the teacher to give more time to individual students and to small groups.

#### Having Students Keep Records of Work

A fifth major area for experimentation that some may wish to try is that of having each student keep an individual record of each day's activities and a summarizing each week of what he has done in the class and the reasons he has had for doing it. Such a record not only helps the student analyze his purposes, class purposes, and teacher purposes but also gives him a basis for looking back over what he has done and then planning more intelligently what he can and perhaps should do in the future.

Such individual student records, logs, or journals can also be sent home to parents to give them a picture of what is being attempted in the class. Such a record is much more helpful to parents in understanding what is being attempted in classes than an A, B, C, or 88 or 95. Such an individualized student record also permits the teacher to look back over what has been done and gives him a better opportunity to offer suggestions for improvement.

When these records are turned in to the teacher it enables the teacher to keep up with the widely different and varied individual student's activities. It makes it unnecessary for the teacher to expect every student to do the same thing since, through looking

over these records, the teacher can see what is being done by each student as the semester proceeds.

#### What Are the Advantages of Teacher Experimentation?

The first big advantage we see to the approaches suggested is that it gives us a chance to practice functionally what we are trying to teach. As Good, Barr, and Scates<sup>4</sup> have said, "Although some field workers will make significant contributions to the store of educational knowledge as active participants in the production of research, primary outcomes for the majority of field participants in educational research will be found in the training of problem-solving approach with increased understanding of the educational process." (p. 40)

A second major advantage is that it will give us a chance to set an example in practice of what we are trying to teach. Presumably we are trying to teach our students to systematically evaluate their farming situation and make improvements. We are more likely to be effective in this responsibility if we set an example of systematically trying out new approaches in our own teaching setups. Practice is more potent than precept in most situations.

A third major advantage which should not be overlooked is that such an approach as has been suggested above will help make teaching a more interesting challenge and adventure. When we are experimenting with new approaches, keeping records of what happens, and then evaluating, this is much more interesting to us as teachers than simply plowing over and over again the same ground that has been plowed before.

And finally such approaches as this will, over a period of time, improve the chances of success in our teaching. What we need, as Dewey suggests, is testing in thought and testing in action.

#### Experiment with Some Major Area Each Year

Finally, it is strongly urged that each year we plan to experiment with one major attempt in improving practices designed to take care of individual differences. Each year we should attempt to hold on to the best of what we have had in the preceding year, to eliminate the poorest, and to systematically experiment in such a way

that we add to the effectiveness of teaching and consequently learning.

The objection may be raised that the students do not know how to keep records of activities, how to evaluate, how to give leadership and how to do the other things suggested. It is granted that many do not know how to do these things very well. However, this is our challenge: How can we help them learn how to do these things unless we consciously give them guided practice?

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<sup>4</sup>Good, C. V. and others. *The Methodology of Educational Research*. New York: D. Appleton-Century Company, 1936.

The meaning of - - -

## A Professional Spirit in Vocational Agriculture

JAMES L. ROSE, Vo-Ag Instructor, Cherry Valley, New York



James L. Rose

THE program of vocational agriculture as taught in the schools throughout the United States is coming more and more under the close scrutiny of those who think it unworthy of a very large investment. I personally am not worried about this for I believe that where the teacher is doing the job required of him the program will stand close inspection. Here are a few standards and ideas of what teaching agriculture means to me and of how I try to uphold the dignity of the job.

Every occupation today has certain high ideals for its members to follow. Of course, there are some occupations and individuals that are on the shady side as to their ideals but I think we do not care for that type of occupation or individual.

We, as agricultural teachers of this great nation, are a part of a team. We are but one spoke in the wheel of the vast education system. We work as a minority group as compared to the other groups in the teaching profession, yet I firmly believe that our small group is one of the controlling points of the education system. It has fallen to us to educate the minority percentage of those who would like to pursue the rural way of life as a living.

As teachers, we have many high standards to aim toward and many rules to follow. We must learn, first of all, how to get along with our fellow teachers. We must learn as we work in our separate school situations that we are but one part of the whole system, that in unity there is strength, and that we must be humble and forgiving through all of our daily procedures.

As a teacher in a school, we must continually gear our program to fit into the total school curriculum. It is becoming more difficult to fit programs of some agriculture students into the daily schedule. We must learn

how to do this, conceding when necessary but standing firm when by so doing the value of the program for the individual will be maintained at its best standard.

From teaching agriculture for 16 years, I have gained some insights into school administration in which we must become involved. First of all, I think that we as agriculture teachers of this nation face a challenge which we are going to lose if we don't wake up and do something about it. This challenge is that of having our course of study overshadowed by other courses in the school to the extent that we are used only as a last resort, a place to send students when they don't know what else to do with them. This is done to some extent and perhaps we do have something to offer. They can make out best in our course.

This situation can be overcome by the teacher of agriculture to a great extent, but not by sitting by and just "wishing." You must get your guidance personnel to your meetings and constantly remind them of the possibilities of the vocational program you offer. You must work with the students you have and get results that can be published to show a good vocational agricultural program in the school.

I think that we must "blow our own horn" a little more. We must take the good farm boys we help develop and be doubly sure that the public knows of their efforts. We must write articles for the paper telling of our program and the work of the department. We must get those top boys to public meetings where they can show people that they are learning how to become farmers and then, probably most important of all, we must make constant visits to the boys of our department and the farmers of our community in order that they know we are willing to be of service to them.

Every one of us undoubtedly has boys in our agriculture classes who are not farm reared. Many of them have no farm on which to work but they can still become engaged in agri-

cultural production. All we need to do is to teach some related skills to make them a good investment for our program.

Recently I talked with one of the top agricultural education men of another state and he told me that they, too, were losing a few departments each year but were also gaining some new ones. The significant thing he said was that a stronger program of agriculture in the communities of those schools dropping the program would have saved it. A little more effort by the teacher to put across the ideals we have to offer would have prevented some of the department closings.

You ask me what kind of a man that is? I know that you are perhaps saying by now, well, he talks a good fight but what can we do about it? Fellow agriculture teachers, I say you can do something about it!

First of all, I believe that if we have the correct spirit of our job then our job comes first. The only thing that should ever come between us and our job is the welfare of our family. Providing that is secure, then we should do every requirement of our job before going to other organizations and taking part in things foreign to our job. I do not mean that we should not belong to other groups and organizations, but rather that we should ever remember that it's easy to be a good joiner but hard to be a good member. In our present position in the educational picture we should be a little more concerned about the department we head and a little less about the bridge party or the golf game we might miss by making a farm visit. Especially we should be more concerned about what the taxpayer, who is footing the bill, thinks of us and our program.

We operate one of the most expensive departments in the school. Our salary is certainly as good as other teachers and with our summer salary we are, I think, much better off than many. With this situation, can we afford to let our program slip? I think that we have it pretty easy as compared to many other jobs, in the sense that the physical work is at a minimum. On the other hand, the mental work and the continual inspirational attitude that we must ever hold in order that students will get inspired toward greater heights is of the most demanding type and a constant challenge.

To uphold the right spirit we must



always be filled with enthusiasm; live our work with a zest that gives credit to the job; mix with those with whom our work draws us and continually try to contribute toward the betterment of their lot. As is stated in one of the FFA degree ceremonies, we must be ductile, but never drawn into anything base or dishonorable; malleable, but never crushed. We must be ever on the job and firm in our beliefs that we have an important job to do.

I like to use the Creed sent out to us by the NVATA some time ago. The first statement is important to me for it says, "I am a teacher of vocational agriculture by choice, not by chance." This we should always try to make true.

Fellow teachers, let me ask you a very personal question regarding our work. How many of you attend your group meetings regularly and how many of you see to it that your FFA boys get to the county FFA meetings? Isn't this a part of our job? If we fail on these two relatively minor items, are there not many more that we must be failing in? I am not trying to point a finger at any one individual in my statements, but I am raising questions that perhaps we fail to think of often enough. I am as guilty as you are of failing to do every job required but, by constant checking on the things to be done, I try to get the ones done

that head the list of "musts."

In summing up, a good professional spirit of vocational agriculture teaching first of all means explaining our program to everyone in every way possible—through the local paper, the FFA program, the P.T.A., the Grange, extension service, or what have you, but let's tell people we are awake and do have a program.

Next, let's get the guidance department at least conscious of our program and perhaps by good relations with it your classes will benefit. Then inform the administration and board of education of our program. A brief, yearly report turned over to the board with facts and figures will do much to let them know what we do and that we do exist. Use your advisory boards; they are often the "crutch" in time of need. Take that individual boy in your agriculture class and instill in him the spirit of wanting to serve and to learn. Continual reminders to him of the proper way to get along in life through good applied class study will make him a better citizen and he will go forth from your department to tell others that you inspired him to good citizenship and better understanding of rural problems.

Our ethics are at stake every minute of our day and we must keep them at a high level. We must learn to do the things we don't always like to do and, to survive as a teaching

group, we must use every possible means to make the taxpayer aware of the need of our presence.

Finally, we need energy, enthusiasm, and the proper concept of moral values. Given these we will not have to worry about our departments. I started in my present job 13 years ago with 7 boys enrolled. I was told that my tenure depended on showing a need for the course and on increasing numbers. I have had an average of 30 boys per year since, yet without a doubt it is one of the most expensive departments of the total school operation. I have learned from my fellow agriculture teachers, from my fellow teachers in other fields and from study done while improving myself professionally. I have found that a strong FFA works wonders; a strong young farmer group from which the future board of education members come doesn't hurt; that being ready to go when and where a boy wants me is one of my greatest assets.

Fellow agriculture teachers, I feel we are needed! Our job is not up for sale! The need of agriculture is as great as ever, but only through use of all the tools at our disposal can we pull this program through its hours of trial. Let's get more spirit into our work! We are all professional men! It is the spirit that makes things move and by a constant re-inventory of our job we can make vocational agriculture real. □

## Texas Vocational Association Council Formed

With increased membership and better cooperation between services as goals, representatives of two important Texas educational organizations met in Abilene recently to plan a reorganization of the Texas Vocational Association.

Reviewing the need for reorganization, James S. Gupton, President of Texas Vocational Association, outlined steps taken previously and explained the council concept for the new plan. H. G. Barber, President of the Vocational Agriculture Teachers Association of Texas, assured the delegates of his Association's desire to cooperate.

Under the new arrangement, each of the vocational services would retain and strengthen its own organization. Each group would select a member of the new TVA Council and would make its own arrangements for the expenses of that delegate.

Small membership fees would support necessary office expenses of the Council and establish a fund for the expenses of the Council president and president-

elect.

The presidency would continue in rotation among the groups affiliated and present officers and commitments for future officers would be respected.

It was agreed that Vocational Agriculture, Trades and Industries, Distributive Education and Homemaking would form the original council. Teacher trainers and state staff members from agriculture would be invited to affiliate, since bylaws of Texas Vocational Agriculture Teachers Association limits its active membership to teachers. Any other vocational group would be welcomed.

Participating in the meeting, other than Gupton and Barber, were Jack Konecny, Secretary-Treasurer of TVA; John Holcomb, Executive Secretary of TVATA;



Left to right—Rainey Owen, Jack Konecny, Raymond Wilson, James S. Gupton, Miss Beryl Hixson, Dr. Jessie W. Bateman, H. G. Barber, and T. L. Devin.

Miss Beryl Hixson of Denton, President-Elect of TVA; Dr. Jessie Bateman of Lubbock, representing Homemaking; Thomas L. Devin of Dumas, representing Agriculture; Rainey Owen of Abilene, representing Trades and Industries; and Raymond Wilson of Amarillo, representing Distributive Education.

Submitted by:

H. G. Barber, President  
Vocational Agriculture  
Teachers Association of Texas  
Floydada, Texas

Needed - - -

## A Common Philosophy in the School

JAMES POLLAN, Vo-Ag Instructor, Holdrege, Nebraska

Have you ever wondered why so many boys in the bottom half of their high school classes end up taking vocational agriculture? At the same time, have you ever wondered why some of the boys in the top 15 percent of the class, who are in a good position to become established in farming, fail to enroll in vocational agriculture?

This problem was the topic for discussion at a recent meeting of high school principals and vocational agriculture teachers in District VI of the Nebraska Vocational Agriculture Association. Some of the teachers felt that many of the good students were being guided away from vocational agriculture courses in favor of college preparatory work. Both the principals and teachers felt that many of the best students should be enrolled in vocational agriculture. Both groups felt that guidance personnel were in the drivers' seat in the situation, and principals indicated that they knew of no magic wand that could be waved over the guidance department to solve the problem. Thus, the problem becomes one of developing a guidance program that will direct these students into the vocational agriculture program. No specific answers were brought out at the meeting, but many of the problems facing both the ag teacher and the principal were brought to light.

One principal said he believed that students could take both vocational agriculture and the courses necessary to prepare them for entry into any college in the state. This feeling was heartily shared by all of the teachers present. Under this assumption, the

problem thus became: How can we get the better students to enroll in vocational agriculture?

Many felt that the problem was probably rooted in a lack of common, sound philosophy among the faculty members who were involved. Some felt that this might reflect some failing on the part of the vocational agriculture teacher. The vocational agriculture teacher must really feel that the things he is striving to get across to his students will result in worthwhile accomplishment. This necessitates that he have his objectives clearly in mind at all times. Clear objectives result from constant and careful evaluation to see that the program is progressing in the proper direction. Unless the teacher does this, he will be unable to justify to his fellow teachers the things that his classes may be doing in the classroom and in the shop. There may come a time when the agriculture teacher and his students must be in a position to defend their work with vigor and conviction.

A recent incident in a Nebraska school illustrates this need. A teacher of world problems was discussing with his students their goals in life. One student mentioned that he wanted to be a farmer in the community in which he presently resided. The teacher, in evaluating this goal, indicated that farming was not a noble calling and thus the goal not a worthy one. He implied that such a goal would be appropriate for students who might not have the necessary gray matter to reach higher and more worthy objectives. The teacher also happened to be the coach of a

successful football and basketball team, and so held the respect of the student body and the community. It is plain to see that this type of situation boded no good for the vocational agriculture program in that school. None of the principals attending the meeting would condone such a philosophy. However, most of them admitted that in many instances such a feeling exists.

The problem then seems to boil down to the following: (1) The agriculture teacher should work carefully and thoroughly with his principal in setting the aims and objectives for the vocational agriculture course. Both must give more than just lip service to the aims of the program; they must believe in it body and soul. (2) The agriculture teacher and his principal should strive to interest all of the teachers in the school in the agriculture program, thus providing opportunity for them to understand and appreciate the aims and objectives of the vocational agriculture department. (3) The teacher must work constantly toward the accomplishment of these aims which he feels to be worthy.

We might compare ourselves to the pioneers who settled the West. Ahead of them lay a great and mighty challenge to anyone who ventured into new territory. Much land was free for the taking; gold lay in the streams untouched by human hands; the challenge was in the open for everyone to see. It spurred men on to do great things. We in vocational agriculture still have vast frontiers to develop. However, unless we recognize that the challenge is there and have our objectives clearly in mind, we shall be unable to realize the full potential that is contained in our program. We must keep the challenge in front of us and be sensitive to the spur that will drive us to great and worthwhile accomplishments. □

### BOOK REVIEWS

**CROP PRODUCTION** by Harold D. Hughes, Erwin R. Henson, Darrel S. Metcalfe, and Iver J. Johnson. The Macmillan Company, New York: Revised Edition, 1957, 620 pages. Price \$6.95.

This book was designed as a text or reference book for a college course in crop production.

The authors set forth information about certain basic principles relative to crop production. The book is not an encyclopedic reference. In the first part the authors stress the importance of the

production of field crops in providing the food and clothing so essential to mankind. They then describe the methods by which our knowledge of crops is obtained and how it is constantly changed and revised as new information becomes available. Finally, information applicable to the different crops is presented, followed by a discussion of the more important crops, their improvement, production methods and uses.

The authors draw heavily upon research data. Some typical results are made available for use by the student in studying production problems and procedures. Many questions are raised. Some of these are answered. Others are not.

College teachers of crop production

will probably find this book a valuable resource. Because it is written on the college level, it is unlikely that many teachers of vocational agriculture will find a need for it in their work.

The authors are all of Iowa State College.

B. C. Bass,  
Teacher Trainer,  
Virginia

**FARM SHOP SKILLS IN MECHANIZED AGRICULTURE** by Harry O. Sampson, Albert S. Mowery, and Harold L. Kugler. Published by American Technical Society, Chicago, Illinois. 395 pp., Illustrated. 1958. Price \$4.95.

(Continued on page 47)

# Needed . . . A Common Philosophy in the School

JAMES POLLAN, Vo-Ag Instructor, Holdrege, Nebraska

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(Continued on page 47)

## News and Views of the Profession

### Sparkes Joins Magazine Board



S. L. Sparkes

S. L. Sparkes, Assistant State Supervisor, Tennessee, has been named to represent the Southern Region on the Editing-Managing Board of *The Agricultural Education Magazine*.

Sparkes received the B.S. degree from the University of Tennessee, College of Agriculture, in 1930 and taught vocational agriculture in the Crockett County Public Schools from 1930 to 1934. He established a new department of vocational agriculture in the Dyersburg High School in 1934 and taught there until August, 1941. Since 1941, he has been with the Division of Vocational Education, State Department of Education, Tennessee. He was District Supervisor of the National Defense Program until August, 1945, at which time he became a District Supervisor of Vocational Agriculture. In June, 1951, he was appointed to his present position.

S. L. Sparkes is married to the former Benwah Kail of Crockett County and has two daughters, Ann Katherine and Mary Jane.

### Duis to Washington



Harold F. Duis

Harold F. Duis, for the past nine years State Supervisor of Agricultural Education for Nebraska, has joined the staff of the U. S. Office of Education in Washington, D. C., in the position of Program Specialist for the Central Region in the Agricultural Branch of the Vocational Education Division.

The position also carries ex-officio membership on the Board of Directors of the Future Farmers of America and the Board of Trustees of the FFA Foundation, Inc.

Prior to his service as State Supervisor, Mr. Duis taught vocational agriculture in Nebraska for 14 years. He is a graduate of the University of Nebraska where he received the Bachelor of Science and the Master of Science degrees.

Mr. Duis is married and has three children. He served as a Major in the Army during World War II and was awarded the Silver Star for his action on Attu.

### C. R. Smith to Maryland



C. R. Smith

Newest member of the Agricultural Education Department of Maryland College of Agriculture is Clodus R. Smith. Mr. Smith joined the department Feb. 1 and will teach and do research in Agricultural Education.

Mr. Smith is a graduate of Oklahoma State University, Stillwater, where he also received his master of science degree. Before taking advanced work at Cornell University, Ithaca, N.Y., he spent a period of eight years as successful Vo-Ag teacher in Oklahoma and the Texas Panhandle. In January, he completed the thesis and residence requirements for a Doctor of Education degree at Cornell University.

He is a member of Phi Delta Kappa, and is listed in Who's Who in American Education. Several of his articles have appeared in "Agricultural Education" and the "Texas Farmer" magazine.

### Book Reviews —

(Continued from page 46)

*Farm Shop Skills in Mechanized Agriculture* includes the common areas of instruction from location, size and type of building, through woodwork (hand and power tools), painting of farm buildings and equipment, concrete and concrete masonry construction, soldering and pipe fitting, metal work, welding, fitting shop and farm tools, using electricity, maintaining farm machinery, and constructing farm shop projects which involve basic skills.

This book places emphasis on the doing of mechanical farm jobs. The authors have developed and described many practical farm jobs and projects. The book contains over 400 illustrations with legends that describe the various mechanical steps involved. Suggested equipment lists together with farm shop drawings, showing organization of tools and equipment arrangement, are included. A study guide is available for the book.

This book can be effectively used as a reference by all students studying farm mechanics in vocational agriculture.

The authors are: Harry O. Sampson, formerly State Director and Teacher Trainer of Vocational Agriculture, State of New Jersey; Albert S. Mowery, Douglas Fir Plywood Association, formerly Professor of Agriculture, Pennsylvania State College; and Harold L. Kugler, Professor of Agricultural Engineering, Kansas State College, Manhattan, Kansas.  
Rufus W. Beamer  
Teacher Trainer  
Tennessee

## ....Tips that work....

### FORMS FOR BUSY TEACHERS

#### FIELD TRIP REPORT

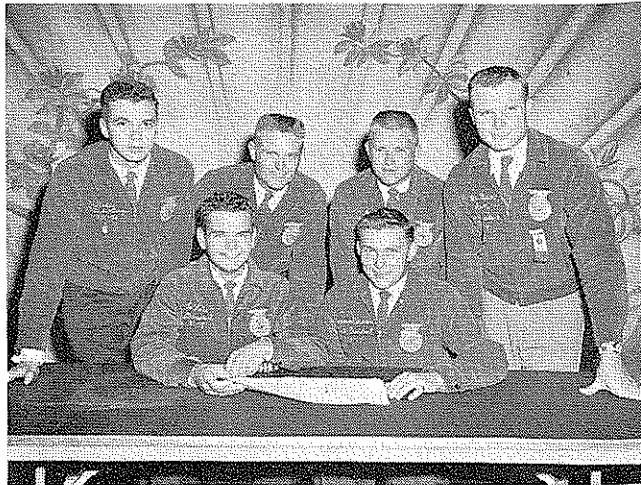
Date..... Name.....  
Home of.....  
Productive project is.....  
Size of project or projects.....  
Objective of this field trip is:  
Does he have ample space for his project?.....  
Does he have enough feeding space?.....  
Are his watering facilities ample and clean?.....  
Does he have any hazards around for his project to injure themselves?.....  
If so, explain how he might correct these hazards.  
His feeding ration is:  
What are your suggestions to improve his productive project?  
The things that I have learned on this field trip are:

#### PLAN SHEET

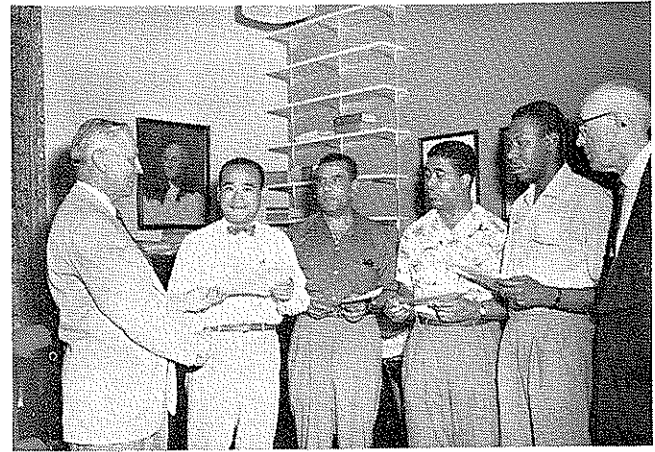
Job.....  
Abilities involved.....  
List below, step by step, the procedure you plan to use in carrying out your Farm Mechanics project. Remember, a job well done is no coincidence. It takes forethought and planning. A portion of your grade will be based on your ability to organize your actions.

Step No.	Action involved	Tools and supplies needed. Precautions to be taken.
Approved..... (Instructor)	Plan by..... (Student)	Don Gee, Vo Ag Teacher Grundy Center, Iowa





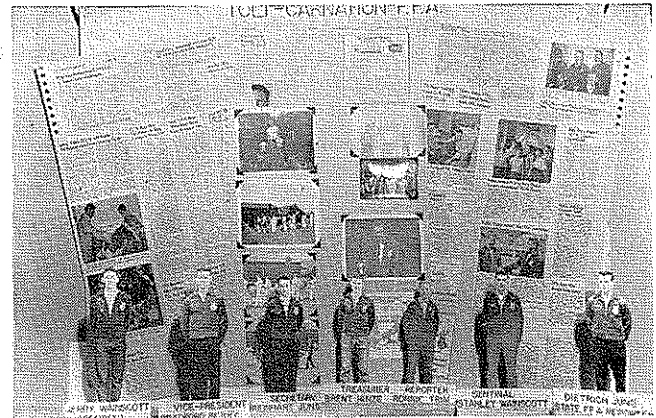
**1958-59 NATIONAL OFFICERS FUTURE FARMERS OF AMERICA**  
 Front row— Adin Hester, Aurora, Oregon, president, and Norman A. Brown, Temperance, Michigan, student secretary. Back row—Lee Todd, Bells, Tennessee, vice president, Southern Region; Bryan Hafen, Mesquite, Nevada, vice president, Pacific Region; Thomas E. Stine, Ozark, Missouri, vice president, Central Region, and Richard Van Auken, Monroe, New Jersey, vice president, North Atlantic Region.



Certificates of award for completing one year special program in Agricultural Education at The Pennsylvania State University are presented by (left to right) Dr. Henry S. Brunner to Nien Lieh Wang of Formosa, Eithel Evans, Renford Shirley and Leroy Richards of Jamaica. George Derr, Consultant in Agricultural Education, Department of Public Instruction of Harrisburg attended the official presentation.

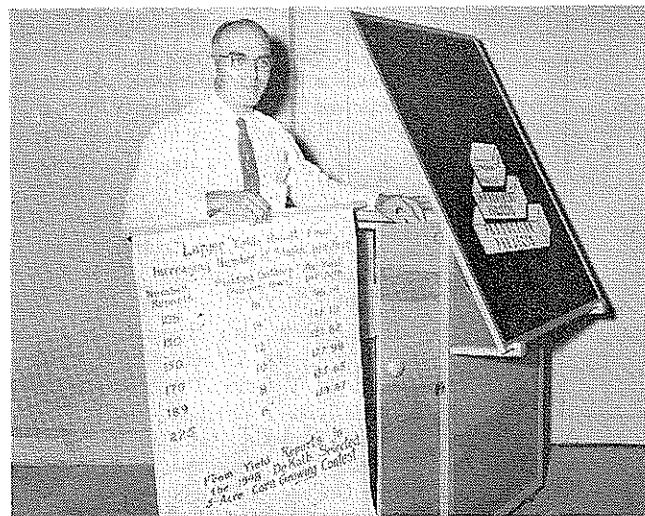


Here are some of the North Dakota vocational agricultural instructors who attended a four-day electrical workshop at the North Dakota Agricultural College to become better prepared to provide essential instruction in electricity to Future Farmers, young farmers and adult farmers in their classes. Richard Witz of the Agricultural Engineering Department, their instructor, is discussing an electrical panel board which most vo-ag departments now have.



The Tolt-Carnation FFA, Washington, has this unique picture-postcard for correspondence purposes.

## Stories in Pictures



Paul Schlotterbeck, teacher of vocational agriculture at Hamler, Ohio, makes use of a combination cabinet for teaching aids. Mr. Schlotterbeck designed the cabinet himself. It provides for chart storage, for film strip storage, axes and easel for his flannel board, and also is a table for projection equipment.



The goal of this group is a uniform national filing system for agricultural publications. This project, which was sponsored by the National Project in Agricultural Communications, inspecting a new system developed by Howard L. Miller, Research Fellow, Ohio State University.

Left to right are the members of Mr. Miller's research advisory committee. David Hall, USDA; Ralph Bender, Ohio State University; Maurice Weiting, Ohio Farm Bureau; Henry Murphy, OSU; Frank Byrnes, NPAC; Ralph Woodin, OSU; Jim Chapman, Office of Information; Dean Campbell, College of Agriculture, R. I.