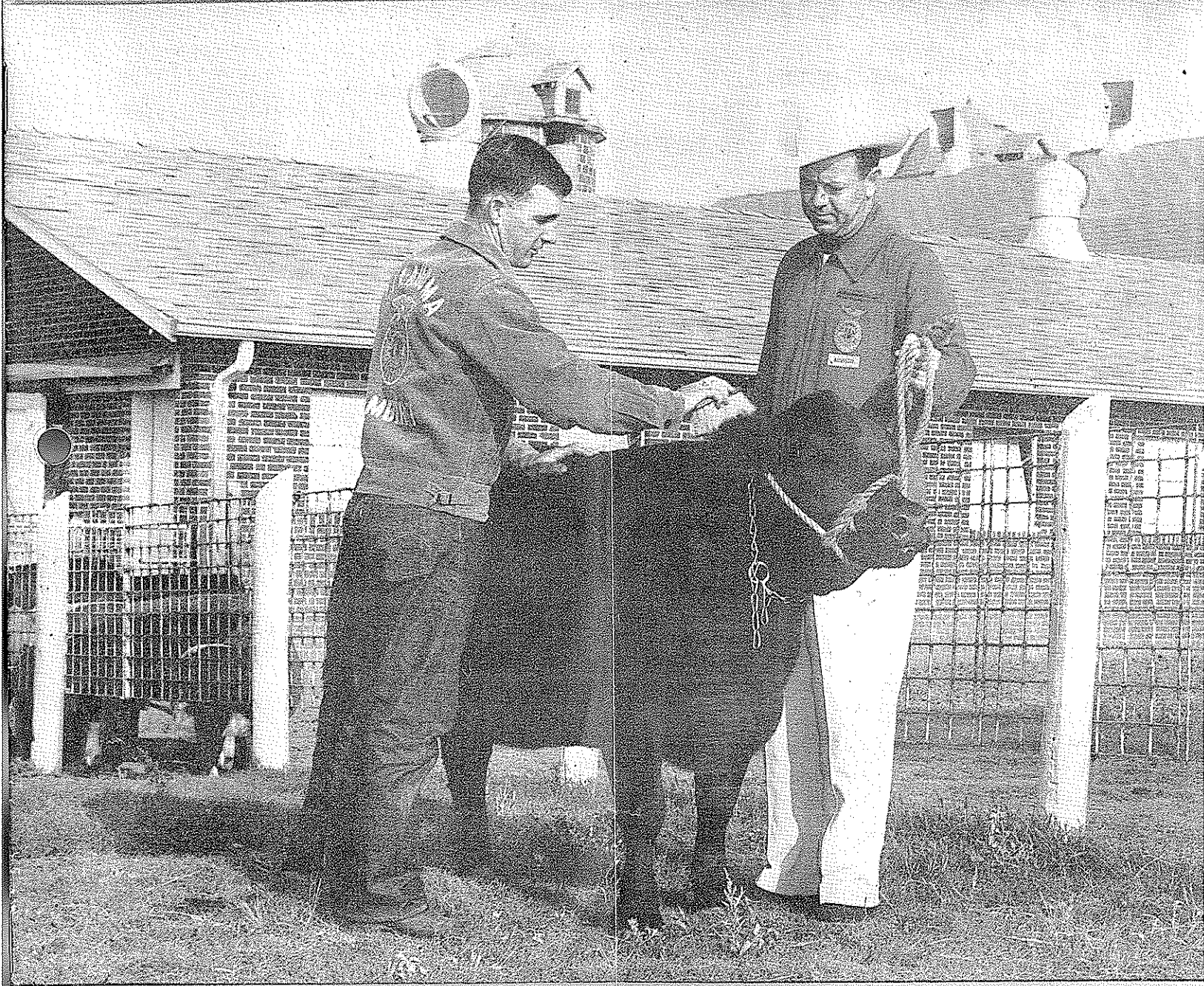


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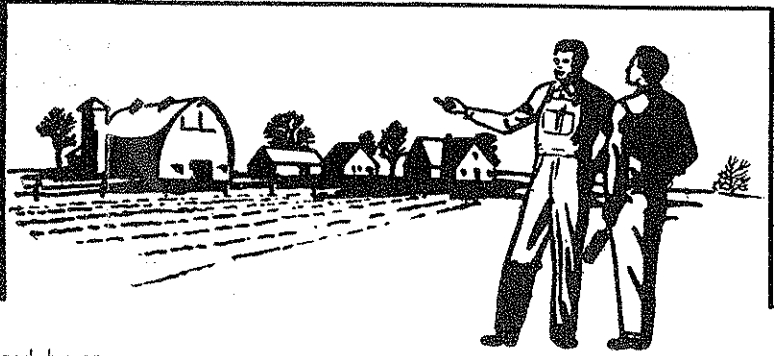
NUMBER 3



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*Featuring—* **Improving  
Methods of Instruction**

# The Agricultural Education Magazine



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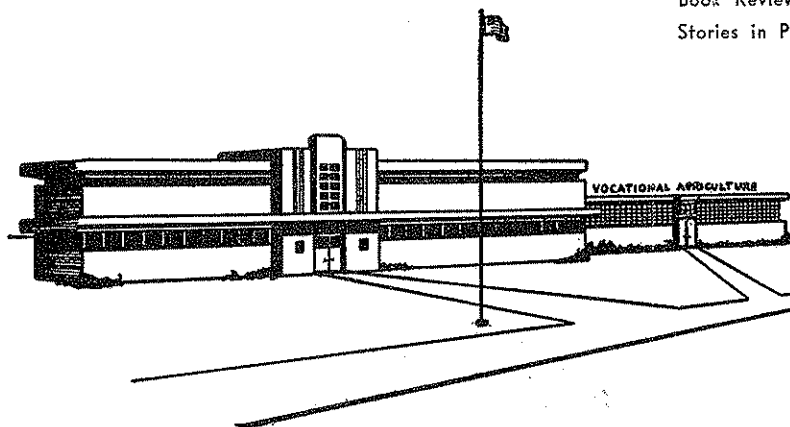
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## Motivation and Teaching

V. G. MARTIN, Teacher Education, Mississippi State College.

The essence of good teaching in the field of vocational agriculture can be summed up in terms of (1) motivation, (2) doing while learning and (3) satisfying use of knowledge and skills which the learning process provides.

Better teaching does not lie in the direction of wider acceptance of these basic principles of good teaching. For a long time these principles have been accepted. In this respect they are old, but like any basic principle they are not changed by time. The need then is not for more *general acceptance* but for much *wider use*. Better teaching is in the direction of *talking less about what we do not do and doing more of what we talk about*.

In order to have the desired student motivation it is necessary to have a great deal more teacher motivation. It is a basic and universal trait of human nature that as people associate with one another individuals whose actions are intense and enthusiastic stimulate responses from others with whom such individuals associate. The teacher-student relationship affords wonderful and abundant possibilities for capitalizing on this trait. Motivation of student-learners will never result from the fact of the mere knowledge that it is one of the basic principles of the psychology of learning. The beginning point of effective use of this principle is an intense and enthusiastic desire on the part of the teacher that his students achieve certain accomplishments from the instruction which the teacher proposes to give them. To get in this frame of mind and spirit the teacher must have intimate knowledge of each of his student's (youth and adults) situations. In his mind there must be a vivid picture of the home farm. The teacher must have a deep desire to know the farm and home life of every student and prospective student in his locality. Without this desire no amount of "surveying" will accomplish the desired result. Some formal surveys are needed and useful but more useable is the "pick-up" information which the agriculture teacher gathers as he associates with farm people because he likes such people and they like him. First of all the agriculture teacher must have an impelling desire to know his people.

From this it should not be inferred that mere social acquaintance will achieve the desired results. There must be a good wholesome social relationship between an agriculture teacher and all the people of the community in which he teaches. This is prerequisite to acquiring vital information about the farming of these people, but such relationship as an end within itself or as an end to irrelevant purposes, will obstruct rather than aid the teacher in putting over an effective program of vocational agriculture. It is easy to get invitations to fish and hunt where game is most abundant. It is also easy to become identified with civic and other social clubs. These and other non-vocational agriculture services are many and varied and within proper limitations are good for the vocational agriculture

(Continued on page 57)

## A Broad Base For Improving Instruction

H. M. BYRAM, Teacher Education, Michigan State University

Probably no other group of teachers could be named that has worked more diligently at improving their methods of instruction than teachers of agriculture. Many superintendents and principals have reported their teacher of agriculture as being among the more skillful on the staff and have expressed a wish that others might acquire similar skill. Has this focus of attention on methods been prompted by a feeling that teaching that had been done was poor? We think not. Rather, we suspect there has been a growing realization that the effectiveness of a department of agriculture depends to a marked degree on the quality of teaching. This effectiveness can be judged in the community, on the farms and in the homes of farmers and their sons. Teaching of agriculture is done in the "front window" of the community. The courses are elective and must stand on their own merits. The department is relatively costly to establish and maintain. Many new buildings and agriculture rooms have been built and people are watching to see if a better instructional program will result. If these facilities were planned in part by a skillful teacher and designed so as to aid him in improving his instruction, the outcomes of class work might change a great deal.

Discussions of the improvement of methods of instruction direct one's attention toward such things as use of visual aids, lesson planning, improved methods of evaluation, and development and organization of student activities calculated to stimulate interest and the application of new learning. Attention to these matters is important, but something more is needed. It is a broad and sound basis for instructional planning.

Many teachers have become good photographers. They have produced good illustrative materials. More prepared visual aids are available to teachers now than ever before. But we must recognize that the use of visual aids in teaching poor subject matter or to secure mere acquisition of agricultural information does not in and of itself constitute improvement of instruction.

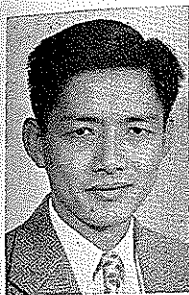
Teachers are being "bombarded" from all sides by ready-made suggestions for instruction. For example, a publisher of a farm periodical makes charts available. A fertilizer company offers prizes for a corn-growing contest. A tractor manufacturer suggested that tractor-driving contests be staged. A government agency wants to sponsor a new contest so that teachers may give greater stress to instruction in soils. A manufacturer of electric welders offers prizes. In addition to these many activities sponsored by non-school agencies or organizations, are the dozens of contests under sponsorship of the state association of FFA. One instructor has estimated that he could, if he chose to do so, make up an entire course around contest activities. But will the acceptance and use of contests in teaching result in the improvement of instruction

(Continued on page 52)

## Improve your teaching efficiency

Some advice for increasing the amount of our accomplishments in teaching.

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



F. K. T. Tom

Dear Bill:

It was a real pleasure to hear from you as you prepare for your first teaching assignment. Of course, the question you asked me will not be easy to answer but I'll do my best. You wanted me to tell you what I would recommend that

you keep in mind as you assume your teaching responsibilities. As you well know, many problems face the first-year teacher. I thought I could best help you by talking about only one basic principle.

Quite likely you have heard the phrase, "to make two blades of grass or two ears of corn grow where only one grew before." This phrase can well present one of the most important challenges which confronts progressive farmers of today. In these times in which the farmer is squeezed between rising costs and decreasing income, we surely have an adequate reason for encouraging the trend toward improved efficiency in productive agriculture. Various farm management studies have shown conclusively that the American farmer is becoming more efficient with each passing year, setting record after record in the number of cows raised per man, the number of hens cared for per man, the number of work units per man, etc. Although we in vocational agriculture cannot pin-point the amount of influence we have had in helping to set these records, we can at

least say we have had a part in improving the standard of living of our farm families.

No, probably few would question the wisdom of doing all we can to produce two ears of corn where only one grew before. I surely hope that as you try to develop in your learners proficiency in farming that you rightfully emphasize farm efficiency. However, I would like in this letter to adapt that thought to the teaching profession and say that one of our most important aims should be to teach not only *effectively* but *efficiently* as well. It is the latter aspect that I wish to discuss with you.

### Meaning of Teaching Efficiency

What is the difference between teaching *effectively* and teaching *efficiently*? The two are closely related, but it seems to me that a person is effective in teaching when he has brought about the desired educational changes in his learners. He is effective when he has achieved his teaching objectives. From that point of view, effectiveness could be measured in terms of the degree to which objectives have been attained. By way of contrast, we may look upon teaching *efficiency* in terms of the amount of time it requires one to become effective (although the amount of money and energy required is often considered also). For example, did it take five days or ten days for a teacher to bring about a particular change? Did he use the time wisely or poorly? Could he have been equally effective but yet have used



Units of instruction selected for use in vocational agriculture should be based upon real farm jobs with which students are faced. Photo courtesy of New York State College of Agriculture at Cornell University.

less time, money, and effort? We all know that just as time is valuable to the farmer, the worker, the industrialist, the businessman, so too is it important to the teacher. You will find, Bill, that one of the frequent plaintive wails heard from teachers is, "My, I wish I had more time to teach!" Obviously, we won't be able to increase anyone's total amount of time for teaching, but we can urge each to look critically at his own teaching methods to see how he can improve his efficiency and thereby accomplish more in a given time than he did before.

### Efficiency Must Be Desired

But you may ask, "How does one go about improving his teaching efficiency?" Naturally, I do not have any panaceas to offer. Nevertheless, it seems to me that the first essential in improving efficiency is to become aware of its importance and to build up a positive frame of reference which will cause us all to look upon teaching in terms of being efficient. Unfortunately, there are no ready guides by which we can evaluate anyone's efficiency. It means then that if you are really serious about this matter, you can best compare your achievements against a standard established by you. For example, keep track

(Continued on page 54)



Parents have a vital supportive role in the training of their sons for farming. Here instructor Mr. William Crane of Trumansburg, New York, confers with Mr. Richard Switzer on a farm visit while the latter's son, Edward, looks on.



Methods or techniques of teaching should be selected not only in terms of effectiveness but also in terms of efficiency. Here Robert Howell now teaching at Andes, New York, selects the field trip to teach his boys how to determine the per cent of slope in a field.

# Have you overlooked a valuable teaching aid?\*

H. PALMER HOPKINS, Teacher Education, Univ. of Maryland.



H. Palmer Hopkins

"A picture is worth a thousand words." Teachers believe this and use all sorts of aids and devices to increase the opportunities for visual perception. One of our oldest "picture machines" is the opaque projector. It has found rather limited usage in

the past, but recent developments indicate it is finding a new place in the sun.

The opaque projector was used sparingly until recent years because:

1. It was too heavy and cumbersome.
2. It did not reflect enough light.

\* From *Maryland Vo-Ag News*.

3. Schools were not generally equipped with black-out facilities.

4. Good sources of pictures were scarce.

Because of one or more of these difficulties, many teachers have tried the opaque projector and found it wanting. If you are one of these, perhaps you should re-appraise the situation, because things have changed.

The new opaque projectors are sleek and trim and can be handled by the most petite of our women teachers. They no longer require absolute darkness, and besides, most schools are now equipped with adequate darkening devices. As to pictures—everything we pick up today is full of pictures in books, magazines, commercial booklets, advertising matter—there is an endless supply of good pictures going through our hands almost daily. If we could find a way to clip and file this material by subject matter

it wouldn't be long until we had a supply of pictures that would help in teaching many lessons. I believe agriculture teachers in particular have access to a wealth of such materials.

In your filing cabinet prepare folders for several important units you teach and start collecting pictures, charts, etc. Many times you will be able to cut up a small booklet and from it have a complete visual lesson. You will probably find it advantageous to mount all your pictures on some kind of heavy paper. This makes them easier to file, easier to find, easier to use and more permanent.

For several years one of the trademarks of the Vo-Ag teacher has been his camera. He is constantly on the prowl for good pictures that he can use in the slide projector. We admire this practice, and we suspect that similar time and energy devoted to collecting pictures for the opaque projector will pay even greater dividends.

So why not reacquaint yourself with this old tool? You may find that this old timer has taken on some pleasing characteristics with age, and that you can become good friends. □

## Improve Your . . .

(Continued from page 53)

of how long it takes you to complete a given unit of instruction. If next year you need to teach the same unit to another group of learners (and if the situations presented by the two groups of learners appear to be similar) you can surely tell whether you were more or less efficient than you were this year in achieving the same ends.

### Some of the Means

I suspect that you aren't fully satisfied with my reply to your question, so I'll proceed to list a few ideas for improving teaching efficiency.

1. *Select for your units of instruction actual farm problems or jobs with which your students are directly concerned.* Each learner should work on problems which he had identified (with your help). Because the problems are real to him, we expect that he would feel an inner compulsion to acquire the knowledge, skills, and attitudes needed to perform the farm job effectively. By capitalizing on that motivational force from within him, you may be more able to channel his energy toward achieving the outcome you desire. With him on your side, so to speak, he shares with you the urge to complete the unit as soon as possible. Efficient teaching starts with the proper selection of a unit of instruction.

2. *Develop a close working relationship with the parents of your boys, be they in school or out of school.* As you well know, much of the learning we desire to bring about actually takes place on the farm. We can't develop in people the ability to farm simply through the use of books. Besides, our "learn by doing" philosophy won't permit that. Therefore, it would seem that a friendly,

cooperative atmosphere between parents and the teacher in which both are concerned with the welfare of the son would do much to improve the efficiency of teaching. Altogether too much of our instruction is not learned because students do not have the real farm opportunity essential for learning. Too often this is due to the failure of the teacher to secure the cooperation of parents in making such opportunities possible. Parents can't help us if we don't solicit their assistance. Especially in vocational agriculture, by nature of the type of learning desired, this cooperation is essential. You would find it profitable to keep this point in mind, Bill.

3. *Plan your lessons well.* We spent a lot of time when you were on the campus talking about lesson planning. If I were to name the most important single factor which contributes to teaching efficiency, I would probably name this one of *lesson planning*. Good teaching does not take place on its own accord. It has to be made so. It has to be planned. Therefore, be thorough in making arrangements for the use of various teaching methods and techniques. Fortunately, there are many such methods and techniques available to us, like the use of films, supervised study, field trips, debates, library study, interviews, outside speakers, and many others. Remember, I said in the beginning that we should concern ourselves not only with *effective* instruction but also with *efficient* teaching. As applied to one of the above methods, we should ask ourselves not only "Is the field trip an *effective* device for my purpose?" but also "Is the field trip an *efficient* device for my purpose?" As we plan our lessons, perhaps more of us should be asking "Which method is the most efficient?"

Good planning implies that the teacher is well prepared. He has the necessary

teaching supplies on hand at the time they are needed. He knows the home farm situations of all his learners and makes the instruction apply to those situations. Realizing that his learners are all different, he provides activities in consideration of these individual differences. He utilizes the potential represented by his students, calling on various persons to make their contributions when advisable. Through good planning he develops an *esprit de corps* among his classes, a feeling of belonging, and an inquisitiveness leading all in a never-ending search for agricultural truths. When you bring these conditions about, Bill, I'm sure that you will achieve a high degree of teaching efficiency.

### A Professional Obligation

By this time you may perhaps be thinking that I'm "bugs" on the idea of teaching efficiency. Nevertheless, we have seen enough cases of unwise use of time to warrant calling this matter to your attention. Particularly since you are just beginning your teaching career, it might serve you well to develop a keen awareness that as a professional worker, you need to think about the most efficient use of your time. Time is valuable. Once it passes, it is gone forever like footprints on the sands of time. Although we teach our learners "to make two blades of grass or two ears of corn grow where only one grew before" let us concern ourselves with bringing about desirable educational change in *two* kinds of understanding, or in *two* different abilities, or in *two* favorable attitudes where change in only *one* was brought about before.

Good luck to you as you start your professional career. Keep us informed of your progress. We'd like to hear from you from time to time. □

# "Marking" your pupils

## A proposal for more just system of recognizing accomplishment.

JEROME P. PALZKILL, Vo-Ag Instructor, Walworth, Wisc.

Early in the 1900's a European scientist formulated an equation which later would expose to man one of nature's hidden and mystic forces. This formula was so powerful that its formulator doubted very much if it would ever be proved. The results of this simple appearing equation, if properly handled, could open the door to the cures of many of man's ailments; yet if improperly used, it could destroy the entire millions of years of the work of nature and its forces.

The formula is simply  $E=MC^2$ ; its author Albert Einstein; its present day application the atomic bomb.

This theory when applied to radioactive material can bring about the chemical and physical changes that make natural phenomena look like child's play.

But suppose, if you will, we take Prof. Einstein's theory and apply it in such a manner that we formulate a theory of teaching based on educational principles.

Let us say that where Einstein used "E" for energy, we use it for education. In other words, what we shall attempt is to solve our problem of teaching in the terms of educational practices and principles without becoming involved in a deep algebraic formula of little or no meaning to the average layman.

### Homogeneous Grouping

The next symbol in the formula is "M" which in the original equation stands for mass. Now in our education problem we will allow the "M" still to stand for the mass, or as we can assume, the majority of the students with which we must deal in our educational process. We should not, however, look upon mass education as a shotgun blast affair, for one commonly thinks of mass as nothing more than an inanimate object of potential power, (as a unit); but we must break down the mass so that each unit, making up the mass, is considered. However, as in the Einstein theory, each individual molecule cannot be considered, but groups of like units can be.

In the homogeneous grouping of students according to I. Q.'s, such a problem can easily be overcome. Therefore, in order to accomplish such a formula, we must next look at the final letter in the original theory which is  $C^2$ .

Now in the original problem,  $C^2$  stood for the speed of light. But in our problem, such a solution for  $C^2$  has little or no value in that the speed or record of accomplishment of the mass is not based on contact with subject matter, but upon comprehension. So for our problem we must take this "C" and give it a value, and call it Curriculum. If we do so, we recognize

the basic logic of education in that the presentation of the Curriculum will determine the education of the mass in general.

But, as I have already stated, the ultimate objective of our educational system is not the over all mass inoculation, but it is the breaking down of the study course so that each of the rated units (pupils) advances to his capacity.

### A Course for Each Group

Therefore, let us complete the equation by applying the (2) to our Curriculum. Such a sign in mathematics indicates that we square the known or given quantity, but for my discussion here we shall only double the term "Curriculum" for purpose of simplicity.

So to utilize the entire formula, we break down Curriculum into two (2) groups, as is allowed in the original formula. As I stated earlier, we must break down our subject matter so that we can reach each group that makes up the (M) mass.

Now it can be argued that in such an educational formula, we could use  $C^6$ , or  $C^{10}$ , or C to the 100th power. But as I said earlier, the more complex we make the formula, the more difficult it is for us to follow.

Right away we can see that the most logical way is to divide our mass into two (2) groups based on intelligence ratings. Then using one C for our top group and the other for our lower, we arrive at our  $C^2$ .

### Application of the Formula

However, in proving our formula and in order to (E) educate our (M) mass, we must arrive at the median of each group. Here is where the teacher enters the picture. For it is up to him or her to find the median for each group. Since no two (2) groups or classes are equal in quality, it takes a highly trained individual to determine this median for a group.

We must realize that we may be leaving out the exceptional child, the average child and the retarded student, but as we ponder the problem further, we can see that by taking the median of each group we can raise the retarded student, accommodate the average student, and entice the brilliant student. This of course, all depends upon the manner of presentation.

Now you may ask, must each class or can each class be divided into these two (2) groups as proposed by the formula? Or, must a teacher divide the curriculum into two (2) sections and present each accordingly? How can we grade such a program if we teach on these two levels?

Fully realizing the lack of teachers and educational space, it would be im-

possible to divide one group from another as was suggested in the first question.

As to the second question on presentation I simply say that undoubtedly each teacher today is doing the work of dual presentation without actually knowing that he is so doing. However, too frequently we will find that we are leaving out one group or the other unknowingly and therefore, before the original formula can be applied, each day the teacher must realize that he must include material at both group levels.

### The Testing

The grading system, or testing system, is not as complex as it may seem at first. Once you have the two groups established a dual marking is also used. By simply using a combination such as A, B, C, D, F for the top grade students and  $A_2$ ,  $B_2$ ,  $C_2$ ,  $D_2$ , F for the lower grade you could without any trouble utilize the present schedule. Otherwise, when a student tries as best he can to comprehend the material we find too often that he is beaten down by a low mark and gives up.

I advocate such a marking system because today I believe we are ignoring too many students due to our old marking techniques. Although a poor student is doing the very best he can, he still can't be given a good grade without the better student claiming an injustice. Also, we see students who are compelled to repeat subjects who actually do no better on their second try than on the first.

Naturally, if a student has the ability, but fails to utilize it he must be penalized. But I am not interested in helping this type of an individual through the dual marking system.

Undoubtedly, some one may ask if such a marking system won't develop an inferiority complex or, what happens when the other children see the grades.

This undoubtedly is a misunderstanding that many people have about our grading systems. For it can be readily observed that even down in the primary grades youngsters learn to differentiate between the various groups and so rate one another.

Today, with the pressures on our educational systems we must constantly be searching for new ideas to, first of all, improve the learning ability of the student and, secondly, seek out new methods for our teachers. Here is one way to rid ourselves of the old rote method of marking. □

South Carolina teachers are using technicians from the Soil Conservation Program to map farms of class members. Teachers find out payments due on farms and assist farmers with problems.

Steam cleaners are increasing in use in schools in the North Central Region for cleaning motors and hog houses.

The Pacific Region is making much use of school farms and school-land laboratories.

# "Teacher's unit" or "subject-matter" planning?

## An approach to improved planning for effective teaching

C. C. SCARBOROUGH, Teacher Education, North Carolina State College



C. C. Scarborough

**E**FFECTIVE teaching calls for considerable pre-planning by the teacher. However, it may be possible to plan "too much." Certainly there are many different approaches to the problem. How, then, can the teacher be sure that the pre-planning will lead to the most effective teaching?

Obviously, each teacher must plan his own best approach to most effective pre-planning. There will be one specific suggestion given here which could be modified to help promote effective learning situations. Apparently, it follows the assumptions necessary for any sound teaching-learning process.

### Student or Subject Matter First?

Apparently, the first job of the teacher is to decide if the student is to be the center of interest in teaching. If so, then the procedure of blocking out certain amounts of subject matter to be covered day-by-day, week-by-week, and month-by-month, must be abandoned. Apparently, this "block-of-subject-matter approach" is a satisfactory way of chopping up subject matter if the individual in the class is not to be considered. In reality, this approach is not greatly different from "teaching a book," chapter by chapter.



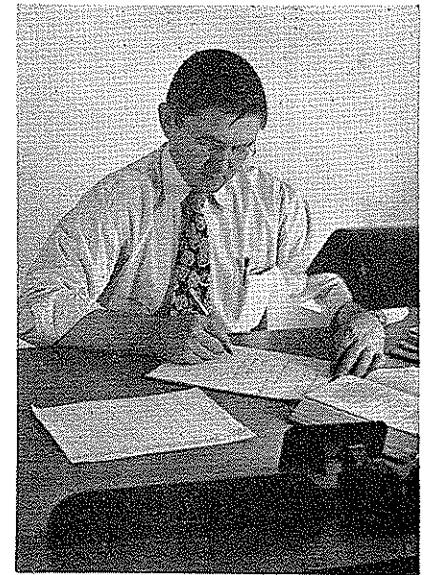
Boys enjoy working with their teacher in planning what will be most valuable to THEM for THIS YEAR. The teacher does not decide in August how many days in January will be spent on a job.

### Pre-Plan or Wait?

However, to abandon one approach does not mean abandonment of all pre-planning. It is a question of what to plan *in advance* and what to *deliberately delay* until the members of the class are assembled. That is, if the teacher wants to include the members of the class in planning what is to be learned, obviously some of the planning must wait. Therefore, we cannot properly divide effective teaching into: *Planning* (before school opens) and *Teaching* (after school opens). Deliberately delaying those areas of planning where student participation is needed for effective teaching-learning is part of a sound democratic process. The pre-planning *will be limited* to those things the teacher should do in order to be ready to work most effectively with the class.

The term "Resource Unit" describes one approach to pre-planning. This is frequently confused with the Source Unit or Subject Matter Unit which was largely an area of subject matter developed in advance to be used in teaching. To try to more nearly describe the approach as largely the task of the teacher, and to avoid (maybe) the confusion mentioned above, the approach being discussed here is called *TEACHER'S UNIT*.

This Teacher's Unit is more nearly a "plan for planning." Essentially, the teacher is preparing for the *process* of developing learning experiences with his students. This is almost the opposite of



The effective Vo-Ag teacher plans in the summer for good teaching in the winter. He concentrates on his problems to be a good teacher more than on juggling jobs in his course calendar.

planning *things* for the students to learn as is done in the usual unit approach.

### Developing the Teacher's Unit

If the Teacher's Unit is to be the heart of pre-planning for effective teaching, it should be developed with considerable thought. The thinking teacher will adapt any proposal to best meet his needs. It is important to bear in mind that the planning of exactly what to teach would be delayed until students are enrolled in the class. The suggested pattern for construction of a Teacher's Unit given here is adapted from Krug.<sup>1</sup> There are six steps or sections in developing the Teacher's Unit.

#### I. Significance of the Area

The purpose of this section is to tie a particular unit into the over-all purpose of the course and the school. It would answer the frequent question of a student, "Why should we study this?" To the teacher, this section would help maintain some *continuity of purpose* for his teaching. This is the setting and indicates the underlying philosophy of the course, not the detailed objectives.

#### II. Possible Learning Outcomes in the Area (Teaching Objectives)

This is the place for listing detailed objectives. However, again it is emphasized that this is *for the teacher's* pre-planning and not detailed outcomes for the student. The latter is to share in that. Note the term "*Possible Learning Outcomes*." To avoid a long list of such possible learning outcomes or teaching objectives, the teacher may want to consider learning in the three following areas:

- A. Understanding  
Changes in what the student *knows*
- B. Skills  
Changes in what the student *can do*

(Continued on page 57)

<sup>1</sup> Krug, Edward A. *Curriculum Planning*. New York: Harper's, 1950. p. 165.



Problems of these boys will be different even if they are in the same class. One of their common jobs is to identify the problems that they will solve in vocational agriculture. They are handicapped in this if the teacher does the job for them.

C. Attitudes

Changes in what the student feels

III. Suggested Problems in the Area

The purpose of this area is to more firmly establish the scope of the unit to be completed. This may be done by a course outline, but this procedure frequently leads to planning exactly what is to be taught without regard to the students. Listing of possible problems makes the course more flexible but also keeps the teacher's efforts tied into realistic situations—if they are realistic problems to be faced by the students. It is in this area that the teacher will find guides for the type of teaching materials to be needed by students in solving their problems—and in the teacher's solving his problems of planning for effective teaching.

IV. Suggested Activities

Again, in this area the emphasis is upon flexibility. The teacher here is asking himself, "What are some activities likely to serve as good learning experiences for the student?" Some teachers have found it helpful to think of these activities in two groups, as follows:

A. Introductory Activities

Learning experiences to catch the interest and challenge the student.

B. Developmental Activities

Learning experiences to take the student into the doing and understanding of the problem. Some of these should lead to conclusive evidence for the student as to the best solution for his situation.

V. Suggested Materials

Some of these would be included in the area of activities. This area would be an organized listing of teaching materials under such headings as, Reading Materials, Visual Aids, Community Resources, etc.

VI. Suggested Evaluation Procedures

Evaluation will have been taking place all through the planning of the Teacher's Unit. In fact, specific evaluation procedures might well be made a part of each area. The purpose of listing it as

a separate area is to make sure that it is adequately considered by the teacher in developing a unit. Emphasis is placed upon planning to use as many types of evaluation as possible, such as:

- A. Self appraisal records.
- B. Demonstration of understanding.
- C. Evidences of growth and maturity.
- D. Paper and pencil testing.
- E. Suggestions for further study.

Summary

This has been a consideration of *one approach* to more effective pre-planning for better teaching. This approach has been called **TEACHER'S UNIT**. It is essentially the teacher's plan for working with a group of students to promote most effective learning. It was urged that the detailed planning of exactly "what and how much" subject matter to be taught be delayed for student participation. In fact, much of the Teacher's Unit will be concerned with how and through what learning experiences the student can participate in his own group (class) for most effective learning. □

Motivation and - - -

(Continued from page 51)

teacher, but the agriculture teacher whose relationships are mostly social will find himself so busily occupied with non-vocational agriculture activities that there will be little time left to teach vocational agriculture. In such situations the agriculture teacher can have very little motivation as a teacher for what his students (boys and adults) ought to learn and do.

Controlling purposes dictate the interests and acts of all people. Expressed a little differently, it might be said one's interests and acts reveal his controlling purposes. Effectiveness in teaching vocational agriculture requires that teaching vocational agriculture be the controlling purpose of every vocational agriculture teacher.

Real teacher motivation requires that the teacher have farm practice goals which he desires his boys and farmers to

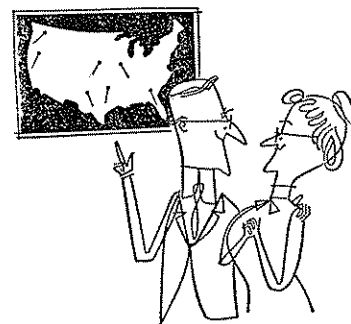
achieve. For such goals to be meaningful the teacher must spend a great deal of time with farmers and farm boys on their farms. He must be constantly alert to make close observation on existing conditions on these farms. Much of what the teacher needs to know will be gained from informal observation but his knowledge of the farming in his area will be greatly strengthened if he also makes some systematic studies as he goes along.

Given a teacher who has found out first-hand what the farming needs in his area are and who reduces these needs to well planned programs of work with well defined individual achievement goals, you will find that his real job as a teacher of vocational agriculture is what is uppermost in his mind and conscience. Under such conditions motivation to achieve worth-while results in the farming of his locality is inevitable. Such motivation is contagious. Expose farmers to such a teacher of agriculture and their desired responses are certain. The same is true in a different way with farm boys in all-day vocational agriculture classes.

This type of teacher must have time free from other duties so that he can spend the necessary time on the home farms in his community. Given such free time he must use it conscientiously and diligently for this purpose. Due recognition to this indispensable part of the agriculture teacher's job must be acknowledged and given credit for by local, state and federal authorities.

Education for better farming must come from those (1) who know first-hand what the needs for better farming are; (2) who know for sure what practices are needed in farming instead of the ones being used where the needs are; and (3) who are competently trained to teach farmers and farm boys what they *need* to know to do better farming. Motivation is the first step in effective learning but prior to this there must be conscious teacher motivation to the ends which he desires his students to reach. □

a 20th Century Fact



Older people generally prefer to retire to smaller communities rather than to the larger cities. Exceptions to this rule are Los Angeles, San Diego, Seattle, Dallas, Houston, Memphis, Atlanta, Miami and Jacksonville, according to a new Twentieth Century Fund report.



# Keep your teaching up-to-date

**Using present day problems in Farm Mechanics instruction is one direction of improvement in teaching.**

JARRELL D. GRAY, Teacher Education, A & M College of Texas



Jarrell D. Gray

**T**HE statement is frequently made that, "It is human nature to resist change." As teachers of vocational agriculture we are sometimes reluctant or slow to change our instructional program as rapidly as the farming methods change in our community.

Instruction in farm mechanics is one phase of the educational program in vocational agriculture that presents a problem relevant to keeping up-to-date. The many changes that have and are taking place make it difficult for teachers to gear their instructional program to the progress taking place in the mechanical aspects of farming.

It has been estimated that the value of mechanical farm equipment in America is \$10 billion more than the net investment in the United States steel industry. It has also been estimated that the value of power farming tools now totals more than \$17 billion. This is five times the investment in automobile manufacturing.

### Keep up-to-date

In view of these estimates it behooves each of us as teachers of vocational agriculture to ask ourselves if our program is geared to the horse-drawn plow days or are we helping prospective farmers and established farmers to improve their farming methods.

Naturally every teacher desires to be of service to people in his community.

To help others learn is a great compensation of teaching. Evidence of such help can sometimes be seen when driving through a community. This evidence may be in the form of results accomplished by a teacher in his farm mechanics program of instruction.

In Sherman, Texas, for example, one can see on farms the results of an excellent instructional program of farm welding that has been conducted by Alton D. Ice, instructor of vocational agriculture.

Mr. Ice, in keeping abreast of the times, has instituted an outstanding instructional program in welding for adult farmers and all-day students.

Due to the increased amount of farm machinery that is required to operate farms efficiently, Mr. Ice felt that an adult class in welding was needed. And judging from the response of the farmers, this feeling was certainly correct. Each week the farmers meet in the new vocational agriculture building and, according to a popular national trend, learn to "do it yourself." This do it yourself learning is simplified and made easier by having such a person as Mr. Ice furnish the leadership and "know how" that are necessary when students are learning.

As a result of learning to weld, farmers are saving time and money. They are now able to repair their machinery on the spot and thus prevent costly delays in their farming operations. The farmers are also able to turn scrap pieces of iron found on the farm into valuable pieces of equipment such as

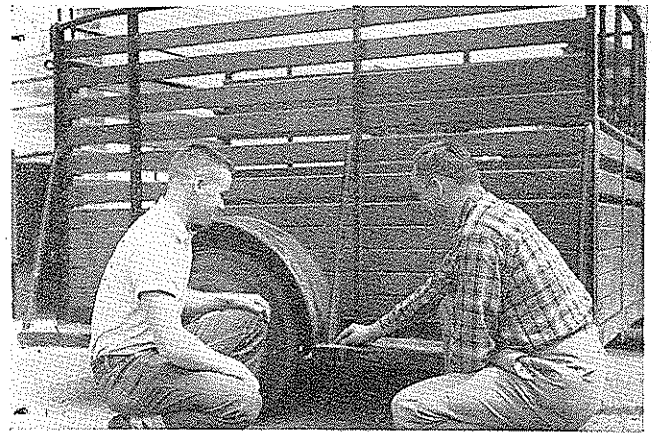
gates, feeders for livestock, or even post hole diggers.

### Meet Present Needs

The all-day students are not neglected either in the welding instruction. As Mr. Ice visits the supervised farming programs, he maintains a sharp look out for possible shop projects which the boys can make to improve their farms. These potential projects and repair jobs are brought to the vocational agriculture building and there they furnish excellent teaching opportunities. It is here that Mr. Ice is able most effectively to teach his students skills and appreciations in welding. At the same time these skills are being taught, the students are performing services—either for themselves or their fathers.

One all-day student, Norman Ponder, has become so interested in welding that he has built and equipped his own farm shop. Here he has collected such tools as an arc welder, grinder, vice, pipe cutter, and numerous wrenches. In his shop he has overhauled the farm jeep, tractor, and combine. He has built, from scrap iron, tin, and other metals, such projects as a gate, livestock feeder, salt feeder, a two wheel trailer, sack holder, and hydraulic power hoist for his tractor. The cost of these projects was only a small fraction of what it would have cost to purchase them new.

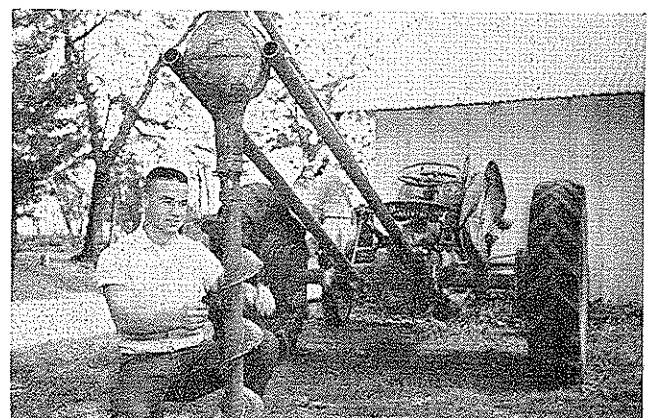
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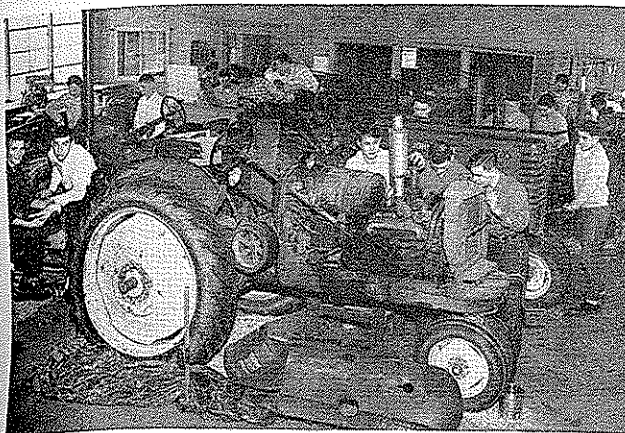
Mr. Alton D. Ice (right) Vo-Ag teacher at Sherman, Texas, and Norman Ponder admire the two wheel trailer that was constructed in the school farm mechanics class.



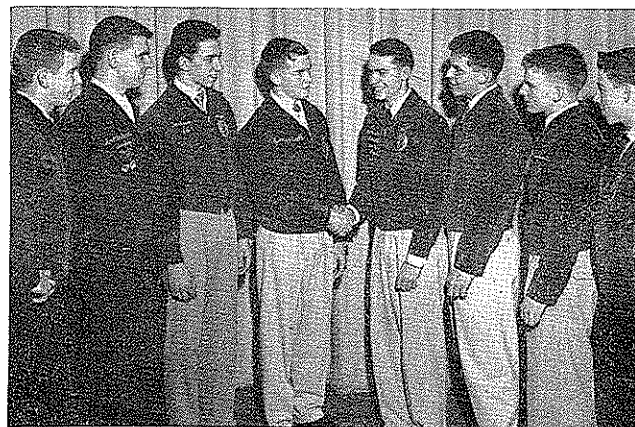
An up-to-date problem permitted up-to-date instruction. Norman Ponder, a member of the Sherman, Texas, FFA Chapter, examines a salt feeder he constructed in his home farm shop.



Norman Ponder demonstrates the post hole digger he built as a farm shop project. The digger was constructed from the rear axle of an automobile.



School consolidation calls for expanded facilities. A group of 21 junior and senior Vo-Ag boys must share the shop facilities for this tractor instruction in the Farm Mechanics program.



Even the FFA program is affected by school district expansion. Local officers of the newly enlarged Chapter talk with State FFA President, Lawrence Earhart (fourth from right) following the annual parent-son banquet.

Many schools are facing the problem discussed here.

## Adjusting to school consolidation

DARL T. DEAN, Vo-Ag Instructor, Springfield, Ohio



Darl T. Dean

**P**ROGRAMS of Vocational Agriculture need to be adjusted with changing conditions brought about by reorganization and consolidation of school districts.

In Ohio there is a trend toward consolidation and this has brought or will bring about differences that the teacher of Vocational Agriculture will necessarily need to make in certain areas of the program.

Seven years ago there were nine rural high schools in Clark County, Ohio. None of these schools had a Vocational Agriculture program. Two years later there were five high schools with three departments. This next year all five schools will have a program of Vocational Agriculture. The change to larger districts brought a demand from the community for Vocational Agriculture Departments.

This situation may be similar to yours or you may be teaching in a district that is being reorganized or consolidated. What changes will you need to make? I believe adjustments will need to be made in the following areas of the Vo-Ag program to meet these changing conditions:

1. Home visitation
2. Size of department and selection of students
3. Public relations
4. Out-of-school program
5. Physical facilities

### Home Visitation

More careful planning by the teacher is needed to save time and miles when the boys' homes are located over a larger

area. One boy may live thirty miles from another boy in the same district and much time can be saved if the teacher will plan home visits in a certain section of the district in any one trip.

### Size of Department and Selection of Students

As would be expected in larger districts the number of students desiring Vocational Agriculture is probably greater. This poses a problem of student selection. A teacher needs to look to the future for probable enrollment increases to determine facility needs and a standard for quality of boys desiring the program. In some cases consolidation means developing a standard of minimum qualifications on some basis or other for student selection where this problem did not seem to exist in the area before the district was reorganized.

### Public Relations

When consolidation takes place there is always the job of combining into one community the students, parents, community organizations and such. The teacher of Vocational Agriculture can be a key man in the Community in developing the new district into one community. Through his personal contact with people in the Vo-Ag program, through news articles and the like, he can help with the problem and will probably find that it is necessary to keep the situation in mind in planning his public relations program.

### Out-of-School Program

A good way to help pull two or three communities into one is through the out-of-school program. Consolidation will probably bring about more possibilities for adult classes both young and adult. A teacher has a greater opportunity to serve a larger group because of the bigger area.

### Physical Facilities

Often a consolidation of school districts means a new building to care for the increased enrollment. This poses a problem for the teacher on the amount of books, shop equipment, etc., to plan for. Again careful planning is required as well as a look toward the future for probable future enrollment.

Basically we should expect the same type program in reorganized or consolidated districts. However a teacher will need to recognize some differences and will need to plan carefully to coordinate the expanded program. □

## Maryland Has a Farm Safety Project\*

The Agricultural Education Department of the University of Maryland with the cooperation of 23 Maryland vocational agriculture departments is conducting a research project in Farm Safety Education for Rural Youth.

Eleven FFA Chapters are conducting community safety campaigns by inspecting farms for hazards, checking later to see if hazards have been removed and carrying on educational safety campaigns in the school and community. The Chapters will report accidents at the end of each month for one year beginning on June 1, 1956. At the end of the project these schools will be polled to see what practices and procedures they deemed most successful in conducting their campaign.

Twelve other FFA Chapters will cooperate in the project, as a check group, by reporting accidents on a designated list of farms for a year beginning June 1, 1956. The second group will conduct no safety campaign other than what generally takes place.

It is hoped that the safety project will do two things: (1) show the way to improve techniques that may be used by rural organizations in conducting safety education campaigns, and (2) indicate the immediate results that may be expected from such campaigns. Of course, the long range results are almost impossible to measure. □

\* From Maryland Vo-Ag News.

# Financial aid for student-teachers

## Current practices of teacher-training institutions in respect to paying student teachers during their directed teaching period, 1955-56

EVANS G. THOMPSON, Teacher Education, Virginia Polytechnic Institute



Evans G. Thompson

**M**OST of the teacher-training institutions in the United States require their student teachers in Agricultural Education to spend a definite period of time in off-campus training centers as a part of the pre-service training program. During this time the student teacher is usually required to live in the local community and to devote full time to securing participating experiences involved in practice teaching. Statements made by educators in recent years have tended to indicate that this involves more expense for the student teacher than living on the college campus and that some institutions have been using State and Federal funds to remunerate student teachers for some of the expense involved in student teaching.

A study\* was made by Professor Fred K. T. Tom, Cornell University, and the writer to determine:

1. The number of teacher-training institutions in which student teachers in agricultural education received remuneration.
2. The reasons or purposes for providing such remuneration.
3. The current practices being followed by the institutions in respect to:
  - a. Average amount of remuneration received by student teachers.
  - b. Source of funds used.

\* Tom, Fred K. T. and Thompson, Evans G. "Current Practices with Respect to Paying Student Teachers During Their Directed Teaching Period, 1955-56." Unpublished non-thesis study, Cornell University, Ithaca, New York, 1956.

TABLE 1

Source of funds used by 21 teacher training institutions to pay student teachers in agricultural education during their directed teaching period, 1955-56.

Source of Funds	Number and Per Cent Using Each Source	
	Number	Per Cent
State and Federal.....	7	33.3
State only.....	4	19.0
Local, State, and Federal.....	2	9.5
College, State, and Federal.....	2	9.5
Federal only.....	2	9.5
College only.....	1	4.8
Local and Federal.....	1	4.8
College and State.....	1	4.8
College and Federal.....	1	4.8
<b>TOTALS.....</b>	<b>21</b>	<b>100.0</b>

- c. Person or agency to whom State or Federal funds were paid.
  - d. Future plans for paying student teachers.
4. The influence of the following on whether the student teacher was compensated:
    - a. Amount of time student teacher spends in directed practice.
    - b. Paying supervising teacher for supervising the student teacher.

### Method

The head teacher trainers of Agricultural Education in seventy-five institutions in the United States responsible for training teachers of Vocational Agriculture in 1955-56 were requested to complete a questionnaire relative to the current practices being used in paying student teachers during their directed teaching period. Completed questionnaires were received from 70 or 93.3 per cent of the institutions.

### Summary of Findings

Twenty-two or 31.4 per cent of the 70 institutions taking part in this study provided some remuneration to their student teachers during their directed teaching period. Nine of the 22 institutions paid only for mileage from the college to the training center, eight paid only for mileage while at the training center, and five paid for both types of mileage expenses. In addition, three institutions paid the student teachers a salary and three paid for added expenses incurred as a result of moving away from the college.

A wide variation in the amount of remuneration student teachers received was evident with a range of ten dollars to two thousand dollars (plus mileage) per student teacher. The mileage rate paid student teachers ranged from six and one-half to seven cents for each mile traveled.

Of the twenty-one institutions reporting their source of funds, all but one used some State or Federal funds or both to compensate student teachers. (Table 1) The most common source of funds used was a combination of State and Federal monies reported by seven or 33.3 per cent of the institutions supplying data. However, practically every combination involving the use of local, college, State and Federal funds was used. Four institutions used only State funds. Each of the categories "Federal only" and "Local, State, and Federal" was used by two of the institutions.

A majority of the institutions (eleven or 57.9 per cent) paid their student teachers directly while the remaining institutions used a variety of practices. (Table 2) Three of the institutions paid the funds to local boards, two institutions paid the funds to supervising teachers, two institutions used two methods, that is, they paid part of the funds to the local board and part directly to the student teacher, and in one case, payment was made by the State to the college for subsequent payment to the student.

None of the 48 institutions not now paying student teachers have plans to do so in the immediate future.

### Amount of Time for Student-Teaching

The mean number of days the student teachers spent in the training centers for the institutions that paid their student teachers was 60.6 with a range of 18 to 240 days. (Table 3) For the institutions that did not pay their student teachers the mean number of days spent in the training centers was 47.6 with a range of 18 to 120 days. The data were subjected to the *t*-test for significance which resulted in a *t*-value less than that required for significance at the five per cent level of probability. This revealed that the amount of time a student teacher spent in directed practice apparently had no significance influence on whether the student teachers were paid.

### Payment for Services of Supervising Teachers

Forty-one or 61.2 per cent of the institutions paid their supervising teachers an amount ranging from \$25.00 to \$467.00 with a mean amount of \$101.61 per training period. (Table 4) The mode was \$50.00 and was paid by ten or 25.0 per cent of the forty-one institutions.

(Continued on page 61)

TABLE 2

Person or agency to whom state or federal funds were paid by 19 teacher training institutions that provided remuneration for student teachers in agricultural education, 1955-56.

Person or Agency to Whom Funds Were Paid	Responses	
	Number	Per Cent
Directly to student teacher.....	11	57.9
To local board.....	3	15.8
To supervising teacher.....	2	10.5
To local board and directly to student teacher.....	2	10.5
To college.....	1	5.3
<b>TOTAL.....</b>	<b>19</b>	<b>100.0</b>

TABLE 3

Number of days of student teaching for 66 teacher training institutions in agricultural education, 1955-56.

For Institutions Which Paid Student Teachers		For Institutions Which Did not Pay Student Teachers			
Institution Reporting	Number of Days	Institution Reporting	Number of Days	Institution Reporting	Number of Days
1	42	1	60	24	46.75
2	108	2	42	25	30.25
3	33	3	36	26	48
4	45	4	45	27	36
5	45	5	40	28	98
6	63.75	6	30	29	45
7	30.25	7	36	30	49.50
8	240	8	40	31	49.50
9	60	9	66	32	20
10	30	10	55	33	30
11	33	11	46.75	34	33
12	45	12	22	35	49.50
13	66	13	33	36	63
14	121	14	18	37	45
15	30	15	40	38	45
16	18	16	36	39	66
17	55	17	49.50	40	49.50
18	30	18	40	41	22.50
19	44	19	33	42	33
20	72	20	33	43	90
		21	65	44	48
		22	88	45	120
		23	36	46	80
TOTAL	1,211		.....		2,187.75
No. Institutions Reporting	20		.....		46
Mean	60.6		.....		47.6

### Happiness in Teaching Vo-Ag

S. L. CANERDAY, Vo-Ag Instructor  
Moulton, Alabama

*Blessed is the man who has found his work; let him ask no other blessedness. Know thy work, and do it; and work like Hercules. One monster there is in the world, the idle man.—Thomas Carlyle.*

Man's personal happiness in life depends largely upon his outlook or his basic attitude. There are some men capable of looking upon the good side of things, who are understanding and sympathetic with the personal weaknesses of others. There are other men who are critical, sour, pessimistic and able to see only bad and the unpleasant in life.

There is enough in our environment to contribute to both attitudes. Certainly there are many circumstances which are aggravating. There are likewise many good people in the world and many good deeds done. One must take his choice as to the attitude which he thinks will give him the most personal happiness and make his influence count for the most good and for good of all concerned. The optimistic attitude will sustain an individual in his infirmity, but a man who has a broken spirit, who is always down-trodden, and pessimistic and can see nothing but the bad in life—that kind of spirit is difficult to raise up. It has no power to sustain us in the hour of our infirmity.

The teacher of vocational agriculture has the greatest opportunity to work and associate with some of the best people in the world. The farm people are the foundation and backbone to our great society. The contributions that the good Vo-Ag teacher makes to this group of good people is self-satisfying and comforting. The feeling of being needed and being a part of this farming class of people is enough to keep the enthusiastic teacher of vocational agriculture feeling happy and constantly seeking ways in which he can be of even greater service to this good class of people.

In order to be happy, we must feel that we are making a contribution to our fellow man and have a feeling of security in this complex society of which we are a part. In what other vocation can one have a greater feeling of this satisfaction than a teacher of vocational agriculture?

Listed are TEN RULES FOR HAPPINESS that I have found to be very helpful to me and I hope will be of some help to others who are teaching vocational agriculture.

1. Make up your mind to be happy. You can think yourself miserable. Learn to find pleasure in teaching vocational agriculture.

2. Make the most of what you have, where you are and with what time there is.

3. Don't take yourself too seriously. Don't think that everything that happens to you is of world shaking importance.

4. Don't let your neighbors set your standards for you.

(Continued on page 69)

TABLE 4

Amount paid supervising teachers per student teaching period for their special responsibilities to student teachers as reported by 40 institutions, 1955-56.

Amount Paid Supervising Teacher	Responses	
	Number	Per Cent
\$25.00	2	5.0
30.00	3	7.5
35.00	1	2.5
37.50	1	2.5
45.00	3	7.5
48.00	1	2.5
50.00	10	25.0
75.00	4	10.0
80.00	1	2.5
90.00	1	2.5
100.00	3	7.5
105.00	2	5.0
120.00	1	2.5
200.00	2	5.0
252.00	1	2.5
300.00	2	5.0
350.00	1	2.5
467.00	1	2.5
Total	40	100.0
Cumulative total paid	\$4,064.50	.....
Mean paid	\$101.61	.....

### Financial Aid - - -

(Continued from page 60)

Of the forty-one institutions that paid supervising teachers, fifteen also paid their student teachers while twenty-six did not. Of the twenty-six institutions that did not pay supervising teachers only five paid their student teachers whereas twenty-one did not. The *chi square test* was used to determine whether a significant difference existed between the institutions that paid supervising teachers and those that did not in respect to whether they paid student teachers. The resulting *chi square value* was less than that required for significance at the five per cent level of probability. This revealed that the practice of paying supervising teachers apparently had no significant influence on whether the student teachers were paid. □

### Keep Your Teaching Up-to-date

(Continued from page 58)

Yes, it can be truthfully said that in the Sherman community the vocational agriculture department is keeping abreast with their instructional program in farm welding. The secret, according to Mr. Ice, is found by building such a program around problems faced by farmers. And what could be more practical than that? □

# Conservation education for Ohio future farmers\*

**An example of the use of related agencies in improving instruction.**

A. W. SHORT, Supervisor of Conservation Education, Ohio.

**F**IVE years ago the Ohio Division of Vocational Agriculture added a supervisor of Conservation Education to its staff. Their purpose was to further Conservation Education on the part of Ohio's 11,000 Future Farmers, as well as to promote better understanding of vocational agriculture among conservation groups.

The Cooperative Conservation Education project for Ohio Future Farmers is one involving the Ohio Division of Wildlife and The Department of Education, with the writer, a former vocational agriculture instructor for 12 years, as supervisor. The philosophy back of the reason why the 11,542 Future Farmers in Ohio can, and should, have an active participation in forestry, soils, water and wildlife conservation is because it fits into regular classroom teaching and supervised projects in farm crops, animal husbandry, farm economics and agricultural engineering. There is a carry-over of interests, abilities, skills, appreciation and attitudes between natural resources and vocational agriculture. The program is accepted and put into practice by the vocational agriculture teachers and Future Farmers in order to get the work done on individual farms. Good practices concerning forestry, soils and water conservation help provide good hunting, fishing and recreation, and provides future Rural Conservation Leadership.

\* A cooperative project of the Dept. of Natural Resources, the Division of Wildlife, the Dept. of Education and the Division of Vocational Agriculture in Ohio.

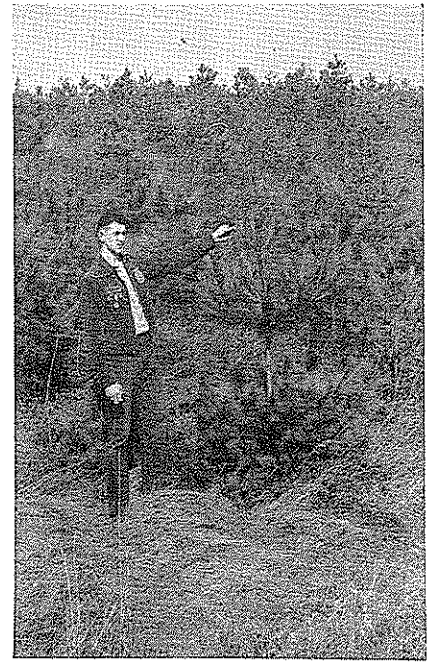
## Many Instructional Opportunities

Soils and Water Management is encouraged and the records are judged for awards concerning, terracing, grass cropping, establishing waterways and contour plowing. These practices protect the soil from wind and water erosion. County conservation panel discussions are held, conservation programs and movies presented, "Field day" demonstration trips are taken, uniform Arbor Day programs are given. Conservation Education articles are prepared for national and statewide circulation. The president of the Ohio Future Farmers appears annually as a speaker on conservation at the League of Ohio Sportsmen and Ohio Conservation Congress banquets. The supervisor accepts about 125 speaking engagements on conservation, annually.

## Chapter Competition

The Future Farmer Chapters enter definite competition involving 46 approved activities in forestry, soils, water and wildlife conservation. These Chapters are chosen to receive scholarships to the Annual Conservation, Recreation, Leadership Camp. The top Chapters choose the boy or boys to attend camp. However, all boys who attend camp are not on scholarships.

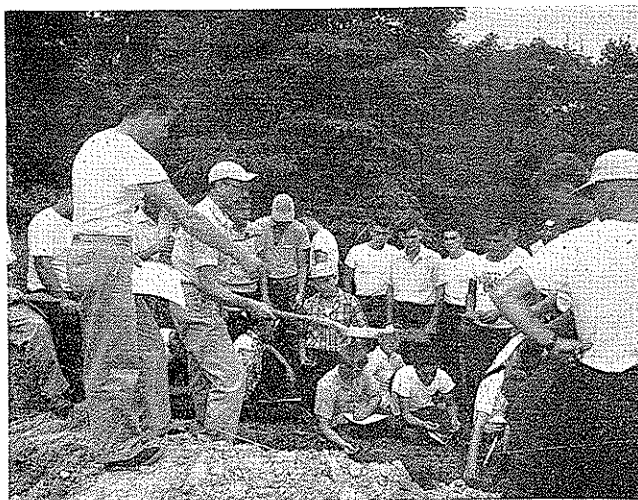
At camp, through lectures, field trips, demonstrations and movies, Future Farmers learn soils judging, soils mapping and land use capabilities, studied at soil pits and on nearby farms. Later, the land judging contest in June at Ohio State University (by 337 teams in 1955



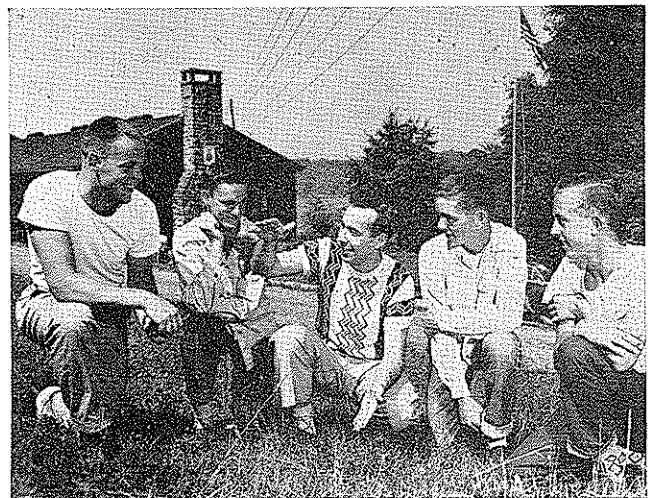
A part of the pine plantings of Earl Rush, past-president of the Loudonville FFA Chapter. Earl was selected as the outstanding Future Farmer Conservationist in Ohio in 1954 and represented the State at the "Young Outdoor American" Conference at Chicago, sponsored by the National Izaak Walton League.

with three Future Farmers on each team) is one of the results of the interest in this camp activity. Other conservation activities studied in camp are: Forestry, water, game management, fish management, trapping, law enforcement, rules, regulations, bag-limits, liberalized fishing and fishing techniques. Instruction is also given in how, when and where to fish, and for what species, baits and lines to use, laws, rules and regulations for boats and boating on Ohio's streams and lakes, Farmer-Sportsman relationships, public hunting areas, pollution problems, farm ponds, posted lands, safety in handling of firearms, game birds and songbirds, how to identify fish, responsibilities of the seven divisions of the Department of Natural

(Continued on page 63)



The Division of Lands and Soil conducted a soil judging demonstration for Ohio FFA members at Camp Muskingum in 1955.



FFA members also can tell tall tales about "the one that got away." Fishing comes in for some attention in the program of the FFA camp.

# Is your FFA short of cash?

## You can combine fun and fund raising.

AL SMITH, Graduate Student, California State Polytechnic College

Fund raising is always an FFA problem. Several years ago when our Chapter was especially financially embarrassed, our officers' committee came up with a method which is still working for us.

We were farming several small orchards, both as a classroom and an FFA activity. We had been hiring our cultivating done but the boys were champing at the bit to buy a tractor and equipment. So we did, even though it meant borrowing \$1,500 from the school board.

Now came the problem of making payments. Doing small tractor jobs was one of the ways suggested. Instead of paying the boys for operating the tractor, it was decided that some other reward be given, preferably one less costly.

Someone suggested a barbeque, another knew a place which had suitable facilities for not only barbecues but

baseball, swimming, fishing, and horse-shoes, and thus the "Work Day Picnic" was born.

Every boy who donated eight hours labor was eligible. We soon ran out of tractor jobs and were lining up other farm and gardening work for interested members. We came across the problem of the member who spent every free hour working on his father's ranch but wanted to participate. The executive committee met and came up with this hard-boiled answer, "Eight hour's cash and you can come along." A surprising number of boys paid the required \$8.00.

The picnic was wonderful. On a sunny Saturday near the end of school, we loaded 22 boys into a bus and spent a day full of fun and food. We went all out and barbecued pound-and-a-half New York Cut steaks, and furnished beans, salad, French bread, ice cream, soda pop, and cookies. Total cost, with the cooperation of a friendly butcher,

was \$2.65, leaving a net profit of \$5.35 or better per boy.

It was such a success that the members immediately planned one for the next year. There were so many boys eligible the next May that we had to have two separate picnics. Several qualified for both.

Now, eight years later, we have worn out that tractor and have purchased and paid for another, but the "Work Day Picnic" is still one of our big events. Early in the fall the boys start asking, "When can we get in our hours?" We usually get all our after-school and Saturday irrigating, brush-burning, discing, barn-cleaning, and other school farm jobs done by this method. The boys record their work in their project record books and have a teacher initial the notation.

Not only is this spur-of-the-moment idea still saving us money, but it adds an easy-to-organize club activity. The boys get another chance to "learn by doing," a large number get a chance to participate in FFA activity, and they and their teachers enjoy a day of fun together at the end of the school year. □

# Let's have a dress rehearsal

## A local "Fair" will prepare for the main event.

THOMAS N. MEACHAM, Cadet Teacher, Calif. State Polytechnic College

ANY successful play or motion picture is a success because it has been practiced and rehearsed until all those taking part can perform their roles in a smooth and coordinated manner. Your Chapter's performance at the Agricultural Fair can also be a greater success with a good, realistic dress rehearsal under its belt.

The rehearsal should be arranged at some convenient time and place a few weeks before the Fair date. Have the boys prepare their exhibits and transport them to the practice location by the same means they plan to use in going to the Fair. Publicize the event so that parents and interested persons can come and see what your Chapter has been doing and what they will be taking to the Fair.

Select competent judges for the contest, have them judge just as the exhibits will be judged at the Fair. Stress the importance of each boy being properly dressed in the approved uniform for showing. Try to have all the exhibits prepared, just as they will be at the Fair.

To increase the effectiveness of the rehearsal, invite the local 4-H club to take part. Have their exhibits judged in separate classes as is done at the Fair. Have a showmanship contest between the two groups. The 4-H club members need a chance to practice too, and they will appreciate the opportunity.

The advantages of a dress rehearsal such as this are many. The Vo-Ag teacher has a chance to check on how well the boys and their exhibits are prepared and trained. An opportunity to see the transportation arrangements in advance can eliminate the trouble and mishaps that sometimes arise in getting exhibits to and from the Fair. The younger members of the Chapter who have not had the opportunity to exhibit will have a chance to experience the procedure and gain confidence. The Chapter has a chance to show off its wares to the home-folks who might not otherwise get to see it. Having as many spectators as possible present is not only good public relations, but also provides the noise and crowds common to Fairs. The instructor has the opportunity at the rehearsal to spot any oversights or mistakes which might prove costly at the real Fair. The 4-H club leaders and members will enjoy similar benefits.

Plan to have a dress rehearsal this year and insure your Chapter's outstanding success at the Fair. □

## Conservation Education - - -

(Continued from page 62)

Resources, migratory birds, marshes and marsh animals, farm ponds, forest fires and their control, farm woodlot management. The campers ask questions and decide what they will do on their indi-

vidual farms about conservation; trained, qualified instructors are on hand annually to give conservation education instruction to all campers.

### Results are Gratifying

We continually believed, during our ten years as Chief of Game Management and five years as Chief of Wildlife Extension Service, that some day a full-time person would work with Ohio Future Farmers, and thank God, for four years we have been that lucky person. What is the result—it is a lengthy report of three pages. Write for it and we will send it. Picking out a few items from a 46 point program we find: 20,000 boys have been trained in land judging; 18,099 boys are in a full-time soils conservation program; 205 miles of multi-flora rose planted; 77,259 acres of woodlots fenced against grazing; 2,554,332 trees were planted; 8,546 Den trees have been saved; thousands of feeding shelters for game have been built; 13,981 nests, homes, etc., for rabbits and pheasants were saved; 8,100 boys have trapped 74,610 furbearers; 5,481 brush piles were constructed for game; 1,256 farm ponds have been built during the five-year period, and more than 4,000 boys and 400 Vo-Ag teachers have had 12 weeks of concentrated conservation training at camp. Our camp facilities can take care of about 300 campers per week. We run camp three weeks per year.

Our main objective back of our endeavors is to help all of us remain a strong and free nation and continue to have Ohio Future Farmers contribute their share in the building of a strong state and nation for goodwill and international peace. □

# Your farm mechanics instruction— 1930 or 1956 quality?

Your answer to this question may be a major factor in the improvement of instruction

E. W. FOSS, Department of Agriculture Engineering, Cornell University

IN recent years there have been many questions raised concerning the short comings of Teacher Training Curricula in the area of Farm Mechanics. A most frequent comment is: "How can I be expected to teach my Ag boys all of these things when I have had but 10 or 12 Semester Hours work in Agricultural Engineering?" Without going into the Pre-Service Training program for vocational agriculture teachers, I would like to comment on some of the opportunities available to every teacher to up-grade his Farm Mechanics teaching. I am convinced Teacher Training programs can be improved, but the overall effectiveness of the teacher is determined most by his willingness to improve himself by any and all means—including the College Teacher Training Program.

Farm Mechanics includes five areas of work—six if Farm Products Processing is included. A well rounded program in Farm Mechanics includes work in all areas—not just Shop Work. Recently, there has been increasing interest in the managerial decisions and judgments which are a definite part of farming and farm mechanics. Questions such as "Choosing a Tractor," "Purchasing an Irrigation System," or "Planning an Erosion Control Program" are examples of everyday farm mechanics problems which need emphasis in agricultural classes. It is important, however, that student and class interest be aroused and maintained before and during these teaching jobs. Many teachers consider these problems as wholly classroom jobs, whereas the shop and community laboratory could be used most effectively. Perhaps a few examples will serve to point out some of the means by which a teacher can grow in his farm mechanics instruction.

## 1. Experiment a Bit

If you lack confidence in farm machinery or tractor maintenance (for example), have your boys enroll in your local 4-H Tractor Maintenance Program. Then go with your boys in their meetings with a local instructor—usually a machinery dealer or mechanic. You can pick up a world of information and, in short order, become a valuable assistant and teacher in your own (and the 4-H) maintenance program. If you would like to get into assembly and repair work, your local dealer will, in almost all cases, be more than glad to have you assemble (as class projects) machinery which he receives in "Knock-Down" condition. Start with simpler machines such as mowing machines and progress to more complex machines with succeeding

classes. Do include instruction in preventative maintenance, adjustments, and ask your local dealer to come in and explain things that may be uncertain to you.

Repair work can also be learned by starting with smaller jobs and progressing toward larger jobs. Emphasis on preventive maintenance is desirable in all instances, however.

## 2. Call On the Experts

Your community has all kinds of talented people—but each individual expects to be invited by you to help. Everyone likes to tell or show what he is proficient in doing. If you would like to include more in your Farm Mechanics Classes (for example in Structures) but are not sure enough of your ground to "carry the ball" all the way, a nearby poultryman, dairyman, or fruit grower who has just completed the construction of a livestock or storage structure would be glad to sit down with you and work out plans for a field trip and give you a great deal of help in mapping out the factors in that construction which were both important to him and his business. Don't forget, either, that important structures and carpentry skills and knowledge can be taught by having boys try out increasingly larger shop projects such as hog self-feeders, range shelters, brooder houses, and outside concrete jobs.

## 3. Make Use of Local Facilities

Every community has many structures and other fixtures to aid a teacher in broadening his whole Vocational Agriculture program—including farm mechanics. Farm ponds, diversion terraces, good farm buildings of all types, and recently rewired buildings with many types of electrical appliances and motor control equipment can be focal points of teaching jobs as well as learning experiences by both pupil and teacher if you will but seek them out. The local talent, be it farmer, S. C. S. agent, county agent, farm electric service representative, or local machinist can all be most helpful if used either separately or in conjunction with these facilities.

Do remember that it is only through gasoline or electric power put into useful work by machinery directed by the farmer that we are able to produce more food and fiber with less physical effort than ever before. We must therefore constantly strive to teach not only how to use this machinery, but also to maintain it for constant and continuing use. Power equipment always presents problems of safety and we must always include safety as a part of every teaching

job. Practically all new farm machines have been conceived and first built by a farmer or his mechanic. It has been only in very recent years that experiment stations or farm machinery research centers have actually designed other than improvements on existing ideas. The local "gadgets" which you see in operation on your supervised farm visits can well be the spark which produces the farm machines of tomorrow.

## Teach Theory Through Practice

The "doing" phases of farm mechanics have more appeal to most students than just about any type of class activity. Use these to teach the skills and the visual facts present, but also build your managerial decisions and other classroom work around these activities. Don't try to teach pure farm mechanics. It is inextricably bound into all productive enterprises and should be there in your teaching. The operation and cleaning of a milking machine motor can well be a part of dairy herd management just as the cleaning of an electric or gas brooder can and should be a part of poultry brooding.

## Keep Facilities Up-to-date

To teach some of these activities our shop facilities can be better equipped. You need an electric center equipped with 120-240 v., single phase and 240 or 208 3-phase. Test equipment including volt, ampere, and watt (or kilowatt hour) meters and continuity tester, and demonstration equipment of many types including a motor generator set, prony brake, and various pieces of wires, fuses, appliances, and motor control equipment are needed. For work in soil and water an inexpensive level and a home-made or purchased plane table is highly desirable. If your department does not have the benefit of tools purchased for the war training courses in machinery, you should look into more complete tools than are on many suggested tool lists including such things as compression tester, vacuum gauge, thickness gauges, spark plug cleaner and tester, piston ring compressor and groove cleaner, ridge reamer, etc. Many of our school farm shops are lagging behind actual farm shops in equipment. Surface planers, portable saws and other portable power tools are virtually a must for adequate teaching.

As a parting remark, don't forget the boy who cannot get into farming, but is interested in becoming a rural electrician, farm machinery mechanic, rural contractor, or other essential rural job. In this era of mechanized agriculture he is as vital to agriculture as the land holder or cattle breeder. Training in farm mechanics is as much, if not more, vocational to these boys than it is to prospective farmers. Let's keep our farm mechanics phase of Vocational Agriculture as modern as the farm machinery which the boys and their Dads use. □

Great progress has been made in recent years in the improvement of class rooms and farm mechanics shops for use of Negroes. Many of these new developments are very superior.

**If your students lack home-farm opportunities, you should read the following advice.**

## The place of a school farm

NOEL V. W. SMITH, Head, Agricultural Department, Smith's Agricultural School, Northampton, Mass.

A new concept in education was established when Oliver Smith, a man with a vision for the need of vocational agricultural education, provided in his will of 1845 for the establishment of the Smith's Agricultural School with a school farm in the City of Northampton, Mass. In 1905 the income from the will had become sufficient to purchase the land for the farm and to erect the first school building. The school administrators and the Vo-Ag teacher did not have to decide upon adventuring into a school farm, because that decision had been made over a century ago by that far-sighted benefactor. The income from the original will is now such a small contribution to the school's operation that the institution is for all practical purposes a public school serving a very wide area.

### A Unique Setting

The total area of the farm, campus and athletic fields is 93 acres, all within the limits of a city of about 30,000 people. There are 12 milking cows, 12 youngstock, 550 hens, 1,500 chicks, 3 acres of market garden, 7 acres of apple orchard, 33 acres of hay and pasture, and a small woodlot on the roughest land. These are the major farm enterprises in the area served by the school. The agricultural department shares the school with eight other trade and industrial departments.

The farm is well equipped and provides an excellent opportunity for practical training and experience. The cows and poultry are better than average, yet not of such high value that inexperienced boys are denied the practice of working with them. The new farm shop is spacious enough to hold several large farm machines at the same time. Each school day is divided equally between academic and related work and vocational work.

### Fulfills a Real Need

There is no question about there being many advantages of a school farm such as this one. The agricultural courses follow the seasonal farm operations as closely as possible and tend to be very vocational. Managerial problems are dealt with as well as farm skills. The maintenance of the farm buildings and equipment provides a full shop program, yet boys are encouraged to bring in their own shop projects. By having a farm just outside of the classroom door the instructor will make greater use of it than if he had to make previous arrangements with cooperating farmers for the use of their facilities and then transport his boys to and from those farms. A school farm can greatly reduce the amount of traveling with its waste of time and risk of accidents, especially with this school located in a city with cooperating farms located at quite a distance.

### More Flexibility Permitted

There is undoubtedly greater freedom of instruction on a school farm where a teacher can carry out his own plans without the necessity of compromise or sometimes disagreement with a cooperating farmer. Errors and mistakes are bound to occur when young boys are acquiring new skills. It is better that they happen on the school farm. Many small jobs of short duration, yet which must be done at certain precise times, are more conveniently done on a school farm. In case of bad and changeable weather a class can be taken in and out of doors at the school, whereas cancellations and postponements are often necessary with cooperating farmers. For boys with limited or no facilities at home, the school farm provides for most of their training. Many classroom discussions proceed with less diversions because the problem being considered



This Vo-Ag student is getting experiences which would be difficult for him to locate except on the school farm.

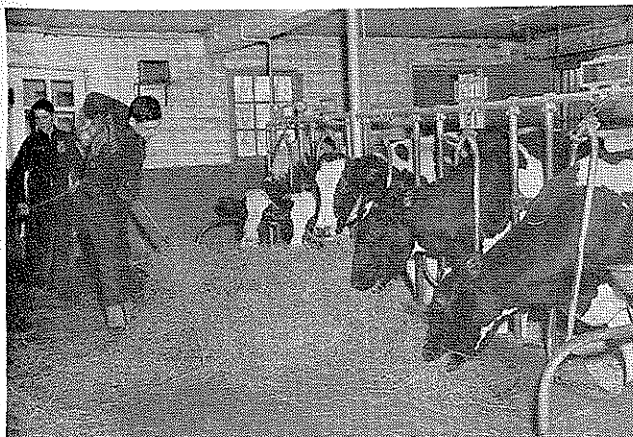
applies to a situation that all boys have experienced together.

The school farm is an aid in recruiting students. Many boys from outlying towns who have a choice of going to other high schools that have Vo-Ag departments, often choose Smith's Agricultural School because it has a farm. It is appealing to active boys who do not adjust themselves to classroom work. There is also some public relations value because the Smith's Agricultural School farm has endeared itself to the people of the city who come there to buy its fresh products, enjoy its beauty, or stroll about the place with their small children.

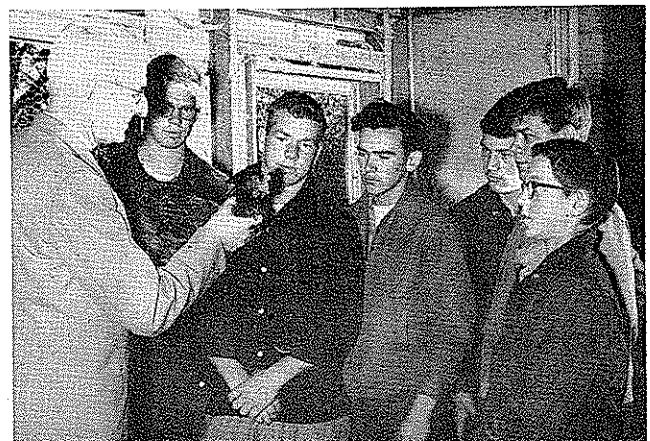
### There Are Disadvantages

In spite of the advantages of a school farm, the Vo-Ag instructor and school administrators should not plunge into the venture without considering many important disadvantages. The capital investment can be very large, especially if there is sufficient equipment to keep a class of boys busy. Large farm machinery at the Smith's Agricultural School

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A part of school herd which furnishes many of the problems found in the instructional program.



Poultry culling is learned through using the flock on the school farm. Other poultry experiences are possible.



# A basis for improved instruction\*

## Farming programs for all-day pupils set the stage for effective instruction.

C. B. WOOD, Vo-Ag Instructor, Falls Village, Conn.



C. B. Wood

**F**ARMING problems are the "backbone" of our teaching in vocational agriculture. The opportunity to individualize the pupils' training programs to meet their interests and needs is at its best. The pupils' learning experiences are real life situations. Reflections on my

own Vo-Ag training bring to mind those activities conducted in my farming program. These memories are most vivid. Field trips used for actual doing are a close second.

It is always challenging to start a program for a boy, developing it to the point where it is evaluated, planned, and executed with a minimum of teacher guidance.

The *Summer visit* to the prospective pupil to get acquainted and evaluate his situation is most important. One gets to know the farm, the parents, and the boy at this time. The first visit cannot always accomplish all we wish. It should reveal, however, whether or not the boy is vocational agriculture material. The over-all farm-picture is generally seen. It is a chance to: (1) discuss with the parents and prospective pupil what his possible program might be; (2) commit him to an ownership enterprise and an alternative; and (3) draw from him some possible improvements around the farm, and jobs he would like to learn to do.

### Importance of Goals

*Pupil goals* are necessary for the planning and development of the program. What does he hope to do? How long will it take to get the goals accomplished? Challenge him at every turn. Get the goals down on paper.

How do these goals fit into his home and family situation? Get the boy to list facts about his situation. Have him analyze these facts in relation to his goals. Lead him to readjust the goals and start developing his program.

In the meantime, get that ownership enterprise underway. Get responsibility and pride of ownership working for him. Of course a boy on a farm placement program must be challenged. The responsibilities he has and their importance must be developed with the boy and the employer. Open the accounts and start his records. Use them to evaluate and study the business.

Use a variety of methods and means,

depending upon the boy to get his yearly plan on paper. This plan, to be balanced, should include ownership enterprises, improvement projects, and supplementary practices. The FFA can help tremendously at this point. The goals the Chapter has set for supervised farm practice activities can be the minimum standards for each pupil. Very seldom will the pupil fail to plan accordingly. The instructor's standards must be kept high as well. As the work progresses into late fall, the pupil projects the farming program plan three, four, or five years ahead.

### Relating to Classroom Activities

While *guiding the over-all plan*, the pupil has made a business agreement for his situation, outlined jobs he needs knowledge about, and listed decisions he anticipates. It is well to allow time in school each week for individual pupil supervised study. At this time he can choose jobs for study, analyze facts for decision making, and discuss them with the teacher.

The accounts and records opened and set up must be kept up to date. Laxity in this respect is not teaching good business principles. Do not keep accounts for accounts' sake. Accounts and records not used become a chore and burden without meaning to anyone. The pupil, in general, has little experience in how to use them. Instructors must teach him. Does the boy know how much he is making or losing? Does he make management decisions from them? Does he know his costs per unit of production? Is he becoming familiar with seasonal prices? Does he use them for budgeting purposes? One could go on and on with possible questions. In short, the accounts should be summarized and analyzed regularly. Regularly might be monthly, bi-monthly, or less frequently, depending on the enterprise. A yearly analysis and interpretation of accounts is imperative. The facts found in account books when properly kept are the best source for much good teaching material for many farm jobs. Use the record and account book all you can.

### Supervision Means Instruction

Much of the supervision of a farm program can be accomplished in the classroom; however, on-the-farm instruction is vital. Six visits to the pupil, on the average, are desirable per year. Many of us do not meet this recommendation. Adjustments in work load should be made to approach the six-visit figures. These visits are not to be entirely of the inspection type. Plan to accomplish instruction in some phase of farming the pupil has outlined in his farm program. Leave him with a challenge for future progress and learning.

## The Place of - - -

(Continued from page 65)

is rented and replaced every two years before major repairs are necessary, yet rental costs are high. Although this farm has shown a profit every year, there is always the possibility of a loss that must be absorbed in some manner.

Where a farm contains livestock and poultry there must be reliable hired labor. Much routine daily work has to be done before the school buses arrive in the morning, and again in late afternoon after the buses have taken the students away. After a certain amount of this routine work has been done by the students its educational value ceases and becomes exploitation. Hired labor is required especially over week ends and during vacation periods. This problem could be less serious on a school farm with dormitory students.

### Both Teacher and Farm Manager

A diversified farm with several enterprises places a tremendous demand upon the instructor's time and energy, especially in a one-man department. Much supervision is necessary, because if details go wrong the entire farm can become a poor example. The Vo-Ag instructor finds himself beset with all the problems of operating a farm in addition to those of conducting an agricultural department. The problems and jobs of supervision are so immediately pressing that the instructor uses time that should be devoted to visits to the students' farms. It becomes very easy to teach in terms of the school farm problems rather than those of the students. The instructor often finds his week ends interrupted and his vacation plans suddenly changed. Many of these disadvantages could be less serious in large agricultural departments with several instructor to share the load. A single crop enterprise carried as an FFA Chapter project would not involve nearly as many problems, especially if the students lived reasonably near the school.

An attempt has been made here to bring out the many advantages of a school farm for training, yet with a few words of caution to consider the disadvantages. And do not overlook the necessity of having the very enthusiastic support of the vocational agricultural teacher and the school administrators. □

### Summary

Select the pupil who needs vocational agriculture by making a summer visit to his home for the facts. Lead him to set desirable goals. Make an immediate plan, followed by a long-time plan. Study and evaluate the plans continually. Execute the plans by intelligent use of parent and pupil conference and agreements, pupil self-evaluation of his program, analysis of records and accounts, and on-the-farm instruction with close adherence to these problems will result in farming programs working at their best. □

\* Adapted from "Connecticut Progress."

# Curriculum development for Vo-Ag in Connecticut\*

Some new concepts are being developed and tried.

W. HOWARD MARTIN, Teacher Education, University of Conn.



W. Howard Martin

IT is impossible to make a beginning in the area of curriculum development for Connecticut's regional vocational agriculture programs without first setting our position in regard to basic commitments. This summary of our present position reflects not only agreement within our profession, but in addition serves to summarize the comments of many citizens actively engaged in Connecticut agriculture. The statements that follow will relate to programs for youth, adults and/or both.

## Commitments of the Profession

*Regarding agriculture*—It is a fact that the number of commercial farms in Connecticut is decreasing, but their size is increasing. However, many opportunities exist for youth to enter the field of agriculture, even though the relative number of opportunities to enter farming on a full-time basis is declining. As the number of opportunities in full-time farming decrease, there is a growing need for trained personnel in the related agricultural fields and the agricultural professions. The vocations in agriculture and in farming have changed at a rapid rate in recent years, and prospects are for continued rapidity of change. Thus, the curriculum must be geared to anticipate such change.

Changes in agriculture necessitate changes in thinking. This involves people. Farming as a business continues, in general, to involve all the members of the farm family (over 14 years of age) with demands on all members for knowledges and abilities in agriculture. Full-time farming is still primarily a family affair with decisions and ultimate success or failure directly or indirectly related to the contributions of the total farm family.

The demands upon full-time farmers are increasing for continued and progressive growth in technical, scientific, and managerial abilities. The time lag between the development of a new practice and its successful adoption on the farm must become shorter and shorter. Those who hesitate are lost. Thus, our concern in the offering of systematic instruction not only for youth but for adults.

Agriculture is still basic to our economy. Farm people are greatly concerned about community, state, regional, and national problems while farmer's prob-

lems are of importance and concern, not only to farmers and their families, but also the community, state, and nation, since farm problems are related to outcomes and such outcomes affect the status of all.

*Regarding education*—The public school is the major agency for providing systematic education for people at the local level. Such education and learning is most effective when guided in terms of individual interest, need, and abilities. The "learning by doing" philosophy has been the key to the success of the program in the past and educational experience at the doing level is still a highly effective learning process. Such learning can promote individual and group problem-solving ability *without neglecting the acquisition of needed facts*.

It is agreed that motivation and learning needs differ with age, experience, and goals; therefore, planning for curriculum development must be based on content applicable to the experiences of both youth and adults in separate groups.

*Regarding ethical principles*—Everyone in our society is concerned, in varying degrees, in the development of effective programs of agricultural education in the public schools. Each individual in our society should, therefore, have equal access to occupational information and other data on which to base occupational choices and in this case agricultural information whether they be farm or non-farm. Having made a choice, all individuals should have equal access to educational opportunities preparatory to their chosen vocation and, in addition, secondary schools should guide students to plan for additional education.

*Specific commitments*—Thus, we are concerned with the kinds of experiences afforded in the curriculum of regional vocational agriculture programs in Connecticut. A summary of these selected experiences follows; namely:

1. Experiences leading to effective choice by the learner for or against preparing in an agricultural career.
2. Experiences leading to effective choice by the learner for a specific agricultural career.
3. Experiences leading to effective *planning* by the learner for entering a specific agricultural career.
4. Experiences leading to a common understanding of agriculture.
5. Experiences leading to ability of the learner to solve individual agricultural problems of a skill, technical, or management character.
6. Experiences leading to the ability of groups (family, organization, community, state and nation) to solve their "agricultural" problems.

## General Policies and Agreements

The agricultural part of the curriculum was regarded as extending from grade 9 through adult years. In working on the development of the curriculum the major emphasis was given to the all-day program.

It was concluded that the specific effort in training for farm operation and management should be concentrated in young and adult farmer programs. This requires a shift in the emphasis traditionally given to the all-day program. The general aim of establishment in agriculture was suggested for the all-day program. Proficiency in farming as an immediate aim is to be viewed broadly as an essential for many positions in agriculture.

*Content areas in all-day program*—One of the outcomes of content-selection processes was the identification of a number of areas or units of instruction for the all-day group. These units or areas largely reflected the experience and judgment of farmers, teachers and other agricultural leaders from the area. Study of the nature of the suggested units revealed four major groupings or categories in which such units might be placed: (1) enterprise units; (2) pupil-problem units; (3) social problems units; and (4) unifying units (farm management and farm mechanics).

Enterprise units involve experience in producing farm products. These units emphasize ability in agricultural production.

Pupil-problem units are basically oriented to personal problems of students. Personality development, home and family relationships and career planning are areas in which such problems were identified. To a considerable degree the FFA and supervised farming program are the means employed by teachers in meeting these problems. Instruction is organized in the form of units, and in addition substantial time is usually given to individual or small-group instruction in these areas. Units of this type seek the optimum development of the learner as an individual.

Social-problem units basically reflect problems of general concern for which those in agriculture feel a unique responsibility. These may range from local problems of erosion control, farm real estate taxation policy, and zoning, to problems of national concern involving price support programs and conservation policies. Units of this type stress participation in solving broad social-economic problems which extend beyond the individual farm.

Unifying units are so identified where experiences cut across several agricultural enterprises or where several members of the farm family are certain to be deeply involved in solving the problem.

It should be noted that the process of curriculum development in this instance did not start with these pre-conceived bases or categories. The units, problems, activities, or experiences suggested through the various group processes were held to reflect the type of curriculum which would best meet needs in the

(Continued on page 68)

\* Adapted from "Connecticut Progress."

## Curriculum - - -

(Continued from page 67)

area. It was after these had been indicated that the attempt was made to "rationalize." Teachers expressed the need for such a "rationale" on grounds that (1) they need a framework or system in which to present or justify the course of study; and (2) they need such a framework within which to view the total course of study if they are to participate effectively in its further development.

### An Example

*General pattern*—The Woodrow Wilson High School with which the Middletown Vo-Ag center is to be affiliated offers a varied program of studies to youth and adults. It is the intent of the administration in this school to make all high school courses and activities available to those students who are enrolled in Vocational Agriculture. Those studying agriculture may take college preparatory courses in addition to agriculture. The school schedule is such that it is possible for superior students to carry four academic subjects in addition to agriculture. Most students in agriculture will be required to take at least two units of work in science and two in mathematics in addition to English, physical education, and American history.

The school operates an extensive education program. Instruction in agriculture will further extend opportunities for adults in the region.

The general pattern for the Middletown Center provides for what are called core units and elective units. Core units are those which will be taken by all students. All personal-problem and social-problem type units are designated as core units in the Middletown all-day course of study for agriculture. Also, about one-half of the enterprise and unifying units are to be core units. Most of the elective units are offered in the junior and senior years.

The layout is planned for a staff of 3 full-time teachers. It is also planned on the understanding that Ag 9 and 10 classes are to be scheduled in the morning and the Ag 11 and 12 classes are to be scheduled in the afternoon. (It is expected that these teachers will conduct from 3-5 classes for adults as a part of the total program.)

Choices of elective units would be made by members of two or more class groups. It is planned to offer three elective units at a given time. Hence, two regular Ag classes for the duration of the special units would be split into three sections according to their choices. Under this pattern both students and instructors have some opportunity to follow through an area of special interest in agriculture.

### Processes in Curriculum Development

Developing the agricultural part of the curriculum is regarded as a teacher activity of a continuing character. There are two main fronts on which developments take place. First, the teacher or teachers are involved in continuing revision and reorganization of courses in

which major attention is given to selecting areas of experience-units which are appropriate to conditions and group needs. Second, individual teachers expect to develop and plan curricula experiences in more detail with specific groups of learners. Since curriculum development is a continuing activity, the major concern of teachers is with processes which are effective and efficient. It should be noted that these processes involve the evaluation or appraisal of separate units, farming programs, courses of study and, in short, the total instructional program in agriculture.

Processes may be classified in several ways including the following: (1) in relation to the specific functions (gathering data, analysis and interpretation, appraisal, etc.); (2) in relation to personnel involved in the processes; and (3) in relation to the unit categories (enterprise, personal problem, social problem and unifying).

In general, the processes involve the interaction of teachers with others. Teachers can become skilled in providing a high type of leadership in working with others which presumably will effect a continuing improvement in the agricultural part of the curriculum. Some of the groups and individuals that the teachers work with would include:

- The consulting committee
- The school administrative staff
- Other teachers within the school system
- The farm families
- Students (youth and adults)
- Former students
- Employers of students
- Fellow teachers and specialists
- Educational consultants

In addition, the teacher draws heavily upon the data pertaining to the problems which are the products of other investigations.

### Teaching Units

At one time the farm job was used as the chief basis for organizing a teaching unit in vocational agriculture. The farm job or problem was, and is, a useful concept. It serves to organize learning experiences in a way that is meaningful to students. It provides a vehicle for functional, scientific, and technical content. On the other hand, the development of a curriculum on the farm job basis may mean extreme fragmentation of learning. Literally hundreds of farm jobs may be identified in most farming communities. The large number of alternatives, seasonal considerations and other factors have often meant that teaching units were of short duration (less than one week) and that little relation existed between any two successive units. Students might find themselves pruning apple trees for two days in the first part of the week and judging cows in the latter part of the week. A similar condition could, did, and does prevail not five or six times a year, but 15-25 times in some departments where the farm job or problem, in a limited sense, is utilized as the basis for segmenting a given course.

Teachers in the Middletown workshop sought to evolve types of units which

would perhaps correct some of the difficulties indicated. No precise generalizations were evolved which describe the basis on which units were designated. One approach was that of identifying major functions and assigning those as unit titles. Example: selecting livestock.

The unit title suggests various possibilities for instructor planning. However, the general approach preferred by teachers involves considerable planning of the specific unit with pupils as a means of selecting specific activities, jobs, or problems to be considered in connection with a given unit.

Thus, the broad, or general, nature of the unit suggested by the title merely serves as a framework within which the learning is planned specifically. The instructor would seek to discover the general abilities of students in the area indicated and inventory their immediate or foreseeable needs for instruction. The instructor would identify some of the most typical problems or activities within the area for the purpose of organizing class work in laboratory or farm situations. Typical problems or activities refer to those common to the area which are believed to provide potential opportunity for transfer of learning and application on the home farm. The use of records in selecting livestock may be taught in connection with the dairy enterprise. Variations in kinds of records used for other livestock or poultry may then be pointed out briefly with the expectation that a minimum of individual instruction would be required to enable pupils to apply this principle to other kinds of livestock, especially in connection with home farm opportunities.

### Scope of Units

A majority of the larger units in the tentative course of study guide are scheduled for six weeks. Most such units could be extended beyond six weeks or reduced.

The length of six weeks was selected primarily because it corresponded to the marking period and because some shifting of teachers and classes was contemplated. Adjustment within this period will be provided through work on farming programs, individual study, and the like. In a few cases, two different units are planned for a six-week period; viz.—two units of three weeks length or one of four and one of two weeks length.

Some consideration was given to organizing units which are to deal with content of social problems. Units which are chiefly concerned with abilities in a given enterprise area represent the character of unit usually common in vocational agriculture. Units which involve the development of group goals and means as in the FFA program, and units which involve the critical appraisal of a local policy or program affecting agriculture are less commonly recognized.

It is planned to develop some units cooperatively which will serve as a resource for teacher planning. The plan is to publish selected units for distribution to all teachers in the state. Work sessions of interest groups gave time to this project in the Summer Conference of 1956. □

# Growing up\*

**Effectiveness of instruction is affected by your understanding of the learner.**

JAMES P. BRESSLER, Vo-Ag Instructor, Williamsport, Pennsylvania



J. P. Bressler

THE youngsters who come into our Ag courses every year look so fresh and green and wholesome. And at once they begin to grow up. The seniors are different. They have spent three years growing up. But they never grow, really. Few people ever do. I haven't—I'm still growing (there is some question about this). Well, to get back to the kids.

I have occasion to get back to the Junior High School every week where we have a Jr. Hi Ag Club. The girls are still in the giggle stage and the boys—they are just growing up. Some of them are beginning to notice a few things about girls, but mainly one is impressed with their "cinemascope" outlook on life. There is still something of Grimm's Fairy Tales about their appraisal of agriculture. "I can buy a pair of rabbits for \$1 each. Three litters per year, 50,000 rabbits, \$50,000." It's the dream age, and dreams come and go quickly. Their interests are apt to change before the period is over and they hate to sit still. In a small way, we are helping them to grow up. Only we never quite finish the work.

The sophomore becomes more settled and a little more dependable. Interests begin to form a more definite pattern. Success or failure in their project work has taught them a sense of responsibility at least. One of life's great principles is taking root and you begin to see them growing up. But for some, mother still has to put the toys away.

And at last comes the car stage in life. Now here's a stingeroo that's hard to figure. In our day no one thought of owning a car before you were old enough to have a steady job. Now most of the high school "set" have their own cars. Not only cars but part-time jobs that somehow pay the monthly installments on the fender flaps and foxtails and gadgets and doodads and dual mufflers, of course. They have a new power at last. Up the street, down the street, nowhere in particular, roaring like all "hellfire." "Boy, I'm really something—and did I give that cop the slip—man, dig that custom job of mine. But next year I'll have 4 acres of corn and maybe 4 litters of pigs, then I'll trade in on a

'54 Merc. Then that blonde I'm running around with will be all mine, and that's all that matters." This may all sound a little souped up and groggy but it's just another modern version of an old malady—growing up. Some do better, some do worse, but to boys of this age the most important guy around is the one they see in the mirror.

It's hard to see a sane, sound and solid citizen evolving from such a mess. But it does happen and it must. We who teach get paid to lend the patient hand over these trying years. We are supposed to have grown up. Can we understand, therefore, the mental metamorphosis that must be going on in young minds as they mature? Sometimes you become discouraged because the quiz you just sprung proves beyond a doubt that you are dealing with a gang of mentally bankrupt juvenile "delinks." Cheer up—they are only growing up.

When you size up the situation in calmer circumstances you see a lot of good, too. Watch them handle that Father and Son Banquet. Even we couldn't do better. The kid who made all-state tackle—he's one of my Ag boys. Look at that Keystone Farmer degree application. How could a kid his age be in so many activities and yet run a whole farm—and I do mean a whole farm, too—gets up at 4:30 every morning to milk 15 cows before breakfast and bus time. I would never have had so much ambition. I don't have to tell them to clean up the shop. They know it must be done and they do it because it is their job. That public speaker of mine is good. At that age I'd have rattled my false teeth down past my sacroiliac or something. One kid sold over \$200 worth of seeds all by myself—for the Chapter treasury. You see, they *are* growing up.

And somehow years later, the Young Farmer is still learning—still struggling with growing up. No more souped up hot rods, of course, a Chevy pick-up is more in order now. The search for security is now on and it never ends. Mortgages, interest, allotments, Bang's Disease, pasture improvement, bulk tanks—they are more important now. "I want my kids to have good schools and I want to be proud of them. I don't matter now, they do. I'm growing up. I am a man."

And the cycle of life has run its course. In a sense the struggle to free men's minds from the bonds of ignorance is a job of growing up—except that the teacher must not only understand the process in those whom he teaches—he must grow himself. How else can he

keep ahead of his pupils? Experience reveals many truths, and one of them is that we must indeed grow with every boy we teach. Not only does this experience prove how better to deal with him, it teaches us how to become a boy again, how to make little things important, how to hope eternally for the day "when I grow up."

Again I have two fine student teachers. They still have the refreshing vigor of young people (with a little love mixed in), and a little of that vigor is bound to rub off, or to be reflected at least like sunshine on a buttercup. It's nice to watch them ply the first rut in the road of teaching experience. Things that seem so simple to us are much more important to them. They will tell you sometime that they need experience—and less philosophy. They, too, are growing up.

But, so what. Growing up is mostly all there is to living. It's fun. It's awkward at times, but fun. Remember that we never cease growing up, and if we ever should reach that plateau—the race is run and we make room for another. Man seeks to accumulate knowledge and things, and when he has most of these he is ready for his last mileage account. The answer is simple. Never stop growing up. By the way, fishing season begins here soon and I still don't have any worms dug. Yipe! □

## Happiness in - - -

(Continued from page 61)

5. Don't borrow trouble. You have to pay compound interest on borrowed troubles.
6. Don't cherish enmities and grudges. Hate takes all the joy out of life.
7. Keep in circulation. Meet interesting people.
8. Don't hold post-mortems. Don't spend time brooding over mistakes. Make them stepping stones to success.
9. Do something every day for somebody else.
10. Keep busy doing constructive things. □

Truck haulage is of the greatest transport importance to farmers in the United States: nearly 90 per cent of their produce is trucked directly to initial markets and the rest is trucked by middlemen to railroads and docks for shipment to other points for grading, packing, processing and storing, notes a new study of the Twentieth Century Fund.

Although large numbers of older people have migrated to California and Florida, the proportion of older people in the population in both of these states is still below the national average of 8.2 per cent of the population, notes a new report of the Twentieth Century Fund.

\* Adapted from the Pennsylvania Newsletter.

## News and Views of the Profession

### Davenport Now Director of Resident Instruction



Dr. Davenport

DR. Roy L. Davenport has been named to the position of Director of Resident Instruction in the College of Agriculture at Louisiana State University by the LSU Board of Supervisors.

The appointment was effective last June 1.

Dr. Davenport succeeds Dr. Charles W. Upp, who became Director of the Agricultural Experiment Station June 1. Dr. Davenport's new position was established by the LSU Board of Supervisors in 1955 to aid in the supervision of the resident teaching division of the College of Agriculture.

Dr. Davenport was first appointed to the LSU faculty in 1920 and has served continuously on the faculty since 1924. His former rank was professor of vocational education and Director of the School of Vocational Education. He received his B.S. and M.S. degrees at LSU and his Ph.D. degree from Cornell University.

A native of Wisconsin, he was the recipient of a General Education Fellowship for advanced graduate study in 1928 and in 1952 he was a vocational education specialist to Germany for the U. S. Department of State. In 1950 Dr. Davenport was awarded a life membership in the American Vocational Association by the Louisiana Agricultural Teachers Association in recognition of his outstanding service in guidance of students in the field of vocational training in education. □

### Donald Watkins Honored

WAYNE C. BUSBICE, Vo-Ag Instructor  
Gaithersburg, Maryland



Donald E. Watkins

TO honor Mr. Donald E. Watkins for his contributions in Agricultural Education, seventy members of the Young Farmers and the Young Adult Farmers organizations held a banquet at Browningsville in Upper Montgomery County, Maryland,

May 7, 1956.

These farmers highlighted their program with a presentation of a silver serving tray inscribed, "Presented by students and friends to Donald E. Wat-

kins in appreciation for inspirational teaching and guidance contributed in agricultural education and farm management."

Don Watkins began his thirty-two year career in rural education with his inauguration of a vocational agriculture program at Poolesville High School in 1924. A year later he instituted a farming education program in the high schools at Damascus and Gaithersburg, Maryland. Working at each school one-half day, he continued his work until 1932. Don chartered a Future Farmers of America Chapter at Damascus, Maryland, where he served as full time instructor from 1933 until 1940.

In 1940, Don was called to the Federal Land Bank in Baltimore for which he served as Farm Servicing Manager until 1948. He was then beckoned to teach veterans in the farm training program under the G. I. Bill of Rights. He served in this capacity for one year.

Returning to Gaithersburg High School in September, 1949, Don quickly recognized the need for young adults as well as high school students to keep abreast of the latest advances in agriculture. He developed the adult farm classes in 1950. Two years later he instituted the Farm Management Educational services.

Mr. Watkins was born and reared on a small general tobacco farm in the Damascus area. He received his formal education in the Montgomery County, Maryland, schools. The University of Maryland conferred the Bachelor of Science degree in Agricultural Education on him in 1923. In 1924 he received his Master of Science degree in farm management and marketing at Cornell University, Ithaca, New York. □

### Nicholson Appointed

A California newspaper executive who for the past six years has been advertising director of the Redding Record-Searchlight has been added to the faculty of California State Polytechnic College's Agricultural Journalism Department.

In announcing the appointment, Cal Poly's President Julian A. McPhee said Loren Nicholson, 34, would be assigned to the department's advertising and management courses. An employee of the John P. Scripps organization since 1947, Nicholson is a former member of the advertising staff of the Watsonville Register-Pajaronian and has also worked for Sunset Magazine at Menlo Park.

Nicholson was an honor graduate in journalism at San Jose State in 1946, has completed the training offered in the Stanford-National Broadcasting Corporation's writing and production institute, and holds a master's degree in business administration from Stanford. During Army service, he also had training at the University of Maryland.

At Cal Poly, Nicholson will still be on "home ground" since the San Luis Obispo Telegram-Tribune is also a Scripps newspaper. Mr. and Mrs. Nicholson moved to San Luis Obispo during the summer. □

### H. B. Swanson



Herbert B. Swanson

HERBERT B. Swanson, 63, assistant director of the Agricultural Education branch of the U. S. Office of Education, died Saturday, May 19, at his home in the Berkshire Apartments, 4201 Massachusetts Ave. N.W., Washington, D. C., after a two months' illness.

Mr. Swanson was born in Cedar Rapids, Iowa, and graduated from Iowa State College. He did graduate work at the University of Chicago and at American University in Washington.

He taught agriculture in Iowa before joining the Agricultural Education Branch of the U. S. Office of Education in 1929. He served in that department first as a specialist in teacher training, then as executive secretary of the Future Farmers of America and, since 1951, as assistant director.

In June, 1955, he was United States delegate to the International Labor Organization conference in Geneva.

He was a member of Phi Delta Kappa, Gamma Sigma Delta, and Sigma Sigma fraternities. He was also a member of the Masonic Lodge. He was a veteran and a member of the American Expeditionary Forces during World War I.

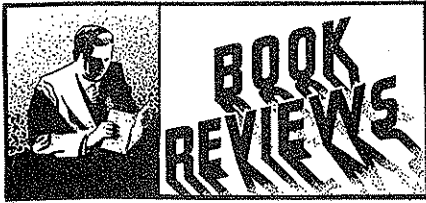
Mr. Swanson is survived by three sisters, Mrs. Julia Krug and Mrs. Iva Simmer of Atkins, Iowa, and Mrs. Christine Sanders of Manning, Iowa. Burial was in Belle Plaine, Iowa. □

### Shoptaw Leaves the Profession

On June 30, Dr. LeVan N. Shoptaw, Associate Professor of Agricultural Education, University of Arkansas, left the profession to devote full time to his private interests. He has been a member of the Agricultural Education staff of the University since 1945.

Dr. Shoptaw is a native of Arkansas. He received his bachelor's degree from Arkansas State Teachers College. Post graduate work was done at Iowa State College. He has devoted thirty years to the profession of agricultural education as high school teacher, principal, superintendent, and as a teacher trainer. His current address is 606 East 4th Street, Russellville, Arkansas.

Oregon is emphasizing advisory councils. A new department of vocational agriculture will not be approved without one.



**THE PUBLIC AND ITS EDUCATION** by H. M. Hamlin, pp. 299, published by The Interstate, Danville, Ill. Price, \$3.50.

This is a book for all who are concerned about public education and want to know how they can do something about it. In effect, *The Public and Its Education* is a comprehensive "guide to action in public education" for all who care to make use of it.

The publication begins with a discussion of the public interest in education, and the responsibilities of lay citizens and professional educators in public education. The author has spelled out quite clearly just what the professional educator and the lay citizen are supposed to be doing with regard to our public school systems. Following this, there is a clear, concise summary of the growth and development of public education in the United States to give the reader a place from which to start in his efforts to do something about the public schools. Then, with the groundwork firmly laid, the reader is guided through a consideration of policies and policy making for public education—a consideration of the kinds of decisions which should be made only by citizens and which must inevitably be made by citizens. Some of these decisions are: "What is expected of public education? Who are the clientele of public education? How are the purposes of public education to be determined? How is public education to be evaluated?" Direct suggestions are given as to how the lay citizens can organize, or be organized, for effective action in their major areas of responsibility in public education. Finally, the reader is helped to look into the future of public education to see what it might become if guided by people of vision.

This book is intended for the use of all people who are interested in public education, professional educator and lay citizen alike. It is especially written for use by boards of education, citizens' committees, parent-teacher organizations, study groups, and other local, state, and national groups.

The author, H. M. Hamlin, is Professor of Education and Chairman of the Division of Agricultural Education at the University of Illinois. He is the author of many books and other writings dealing with the problem of public education and citizen participation in public education.

—A.H.K.

**DOMESTIC RABBIT PRODUCTION** by G. S. Templeton, illustrated, pp. 210, published by the Interstate, Danville, Illinois. Price, \$3.50.

*Domestic Rabbit Production* provides an excellent source of information on

nearly all phases of rabbit production. Topics included are selecting a breed, buying stock, providing equipment, feeding, breeding, managing, producing meat and wool, showing, marketing, controlling ailments, slaughtering, and preparing domestic rabbit meat for eating.

This book is well written and contains a great many good illustrations to help the reader understand the operations described. It has a hard binding and cover for durability with use. Persons interested in rabbit production will find this a valuable reference.

George S. Templeton is Director of the U. S. Rabbit Experiment Station.

—A.H.K.

**APPROVED PRACTICES IN FEEDS AND FEEDING** by D. W. Cassard, illustrated, pp. 305, published by The Interstate, Danville, Ill. List Price, \$2.00.

In addition to separate chapters on feeding the various major kinds of livestock, this book contains chapters on the following topics: types of feed; balancing rations; mixing and preparing feeds; comparative feed values; feeding equipment and work simplification; and troubles due to improper feeding.

This publication is similar to the many other approved practices publications. It has a spiral binding and a light cardboard cover. Illustrations throughout help to make the book more interesting. The emphasis is on the "how to do" phases of feeding. Teachers of vocational agriculture should find this a useful supplementary reference.

Daniel W. Cassard is Assistant Professor, Animal Husbandry, University of California, Davis.

—A.H.K.

**APPROVED PRACTICES IN PASTURE MANAGEMENT** by M. H. McVickar, illustrated, pp. 255, published by The Interstate, Danville, Illinois. List price, \$2.00.

This is one of the latest additions to the series of "Approved Practices" publications available from The Interstate Publishing Company. Separate chapters on pastures are provided for dairy, beef, sheep, poultry, swine, and horses. Additional chapters included are: Important Pasture Grasses and Legumes; The New Pasture; Keeping Pastures Productive; The Nutritional Value of Pastures; Controlling Weeds in Pastures; Emergency Pastures for Drought Conditions; and Diseases and Insects Take Their Toll.

Many teachers of vocational agriculture are familiar with this kind of publication. A great amount of material is condensed to provide suggested solutions to problems with a minimum of reading and research. The book is well written and illustrations are used throughout to emphasize certain points and add interest. Teachers should find this to be a useful supplementary reference for use with both adult farmers and high school boys. The book has a spiral binding and a light cardboard cover.

Malcolm H. McVickar is Chief, Agronomic Education, National Plant Food Institute, Washington, D. C.

—A.H.K.

**BUILDING AND EQUIPPING THE FARM SHOP** by Howell, Coggin, and Giles, illustrated, pp. 106, published by The Interstate, Danville, Ill. Price, \$2.95.

This book is in reality a "picture story" about the building and equipping of the farm shop. Topics discussed, or rather presented in pictures, are the need, the type, the location, the structure, tools and equipment, interior arrangement, shop-made equipment, and shop safety. A short bibliography is also included.

Regardless of what a person may think desirable in a farm shop, this "picture" book should be able to provide some ideas. Of particular interest are the pictures of tool storage and arrangement, and the home-made shop equipment. As indicated above, there is very little written content, pictures having been used whenever possible to present the ideas.

All three authors are members of the North Carolina State College faculty. E. L. Howell is Assistant Professor of Agricultural Engineering; J. K. Coggin is Professor of Agricultural Education; and G. W. Giles is Professor and Head, Department of Agricultural Engineering.

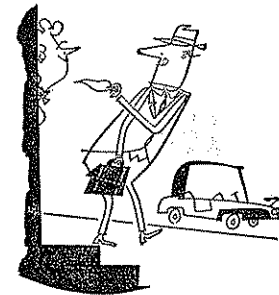
—A.H.K.

Thanks to our amazing technological progress, today we can produce on 20 to 25 million acres about the same amount of cotton as we produced on 40 million acres twenty-five years ago, notes a new study issued by the Twentieth Century Fund.

\* \* \*

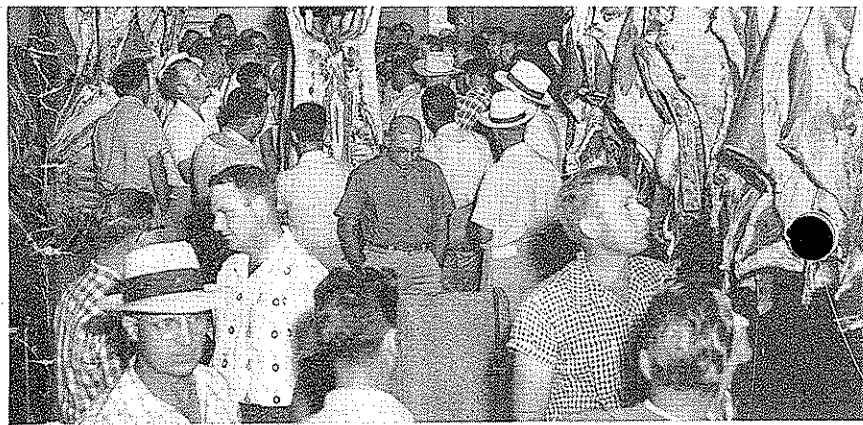
Oklahoma is doing a superior job in holding students of vocational agriculture in the FFA.

## a 20th Century Fact

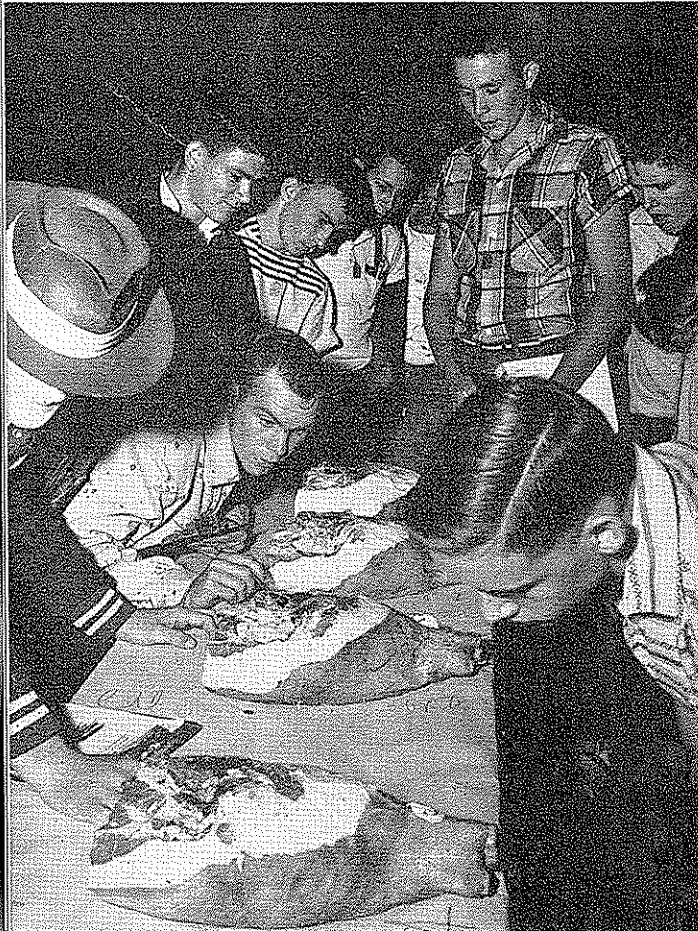


More than three fourths (77 per cent) of persons living five to ten miles away from their place of employment, and more than five sixths (84 per cent) of those living more than ten miles away, depend on cars for home-to-work transportation, notes a new report of the Twentieth Century Fund.

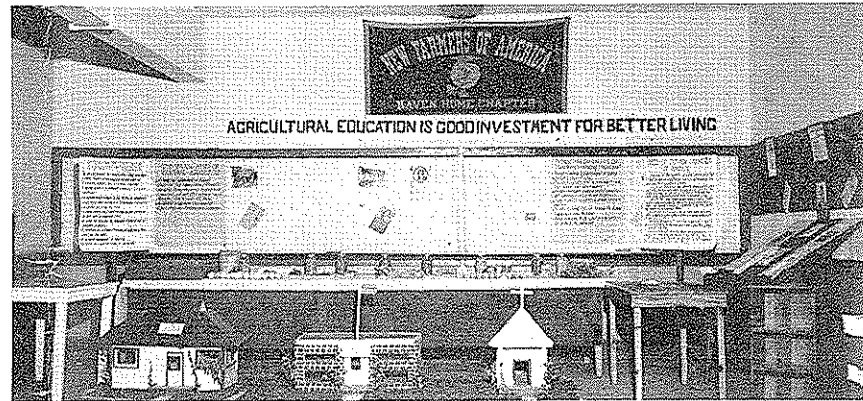
# Stories in pictures



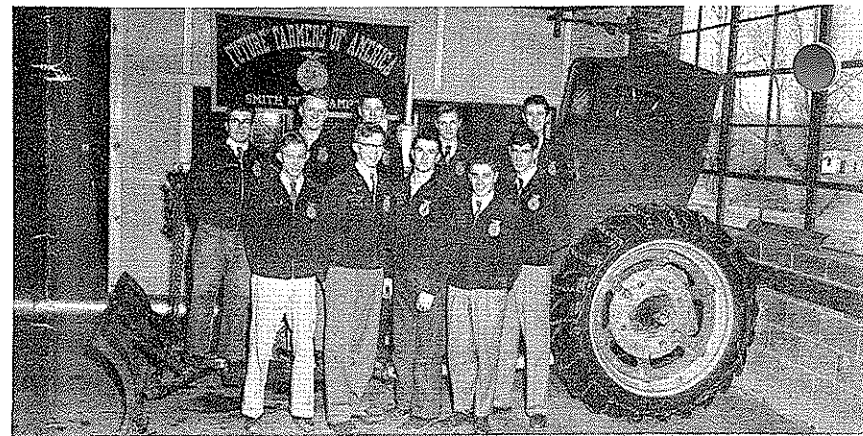
136 teachers of agriculture attended workshops on market grades of slaughter hogs at the Little Rock, Arkansas, Packing Company. Teachers were given practical work in grading and estimating weights of live market hogs, and in carcass grading.



A portion of the Meat judging contest held on the University of Arkansas campus as a part of the annual State FFA Judging Contests. A total of 110 schools represented by 750 boys competed in the various contests.



A Chapter exhibit prepared by the Haven Home Vo-Ag Dept., Savannah, Ga. Exhibits of this kind, prepared for a variety of purposes, are a stimulant to improvement of instruction.



Members of the FFA Chapter of Smith's Agricultural School, Northampton, Mass., are proud of the school tractor which they prepared for snow-plowing on the school grounds. This equipment gets frequent use on the school farm. (See story on page 65)

The Hercules Powder Company was host to the members of the North Atlantic Regional Conference in a dinner meeting at the Company's Country Club during the conference, last April at Wilmington, Del. Participants in the dinner program, shown at the head table, were (from left to right), O. W. Wells, Administrator of the Agricultural Marketing Service, U.S.D.A., A. E. Forster, Pres., Hercules Powder Co., Governor Caleb Boggs of the State of Delaware, M. R. Budd, Advertising Mgr. of the Hercules Co., H. N. Munsicker, Program Specialist in Agr. Edu., U. S. Office of Edu., and Lyle W. Mowlds, State Supr. of Vocational Agriculture in Delaware.

