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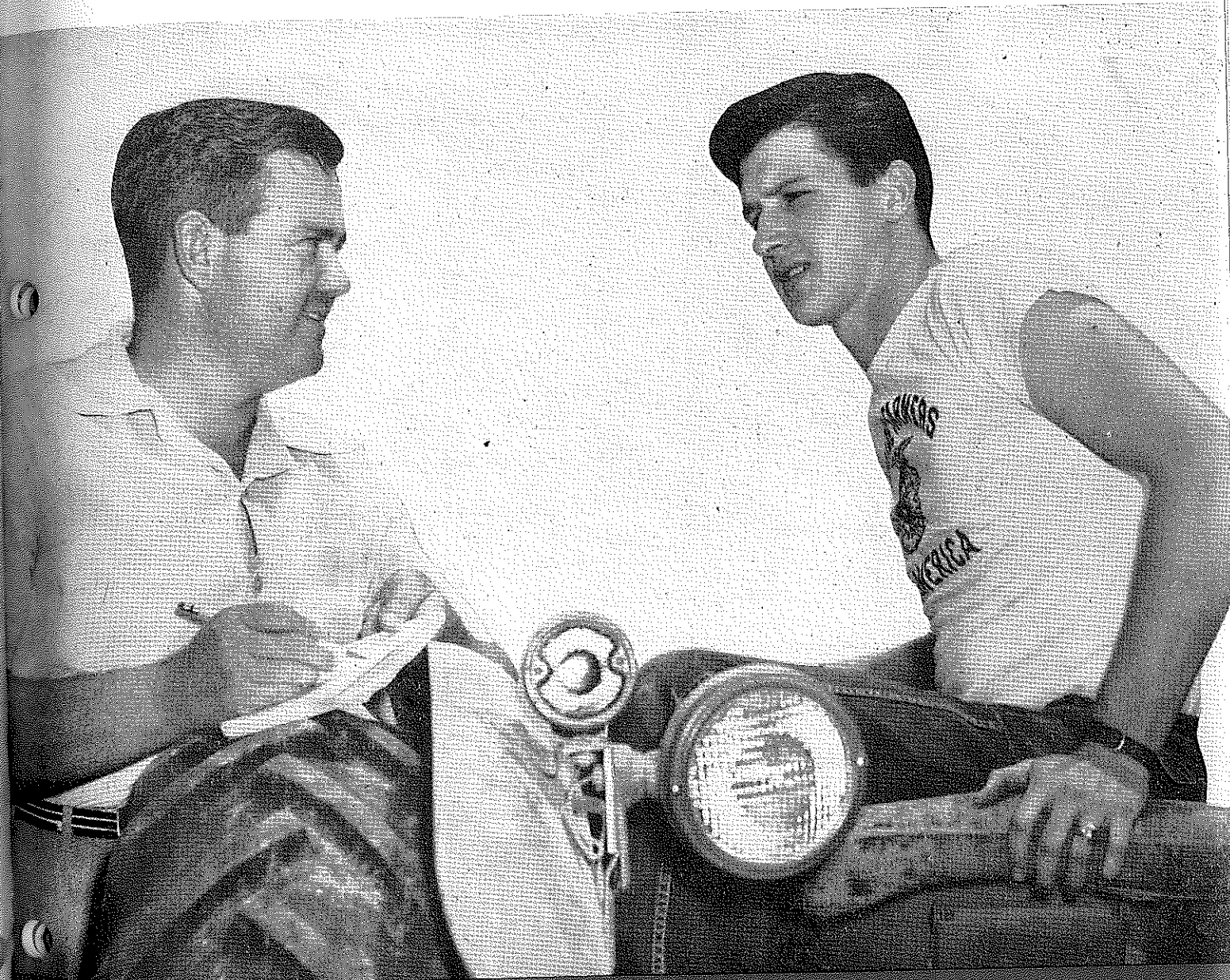
The AGRICULTURAL EDUCATION Magazine

VOLUME 26

SEPTEMBER, 1953

NUMBER 3

Featuring . . . Improving The Teaching-Learning Process



Picture, legend, page 63

The Agricultural Education Magazine



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

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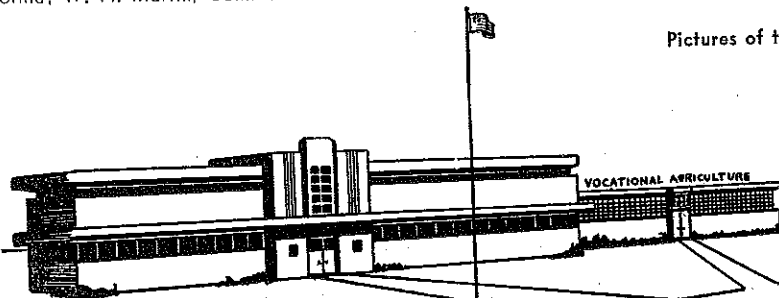
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Subscription price, \$1.50 per year, payable at the office of the Interstate Printers and Publishers, 19-27 N. Jackson St., Danville, Illinois. Foreign subscriptions, \$1.75. Single copies, 15 cents. In submitting subscriptions, designate by appropriate symbols new subscribers, renewals and changes in address. Contributions should be sent to the Special Editors or to the Editor. No advertising is accepted. Entered as second-class matter under Act of Congress, March 3, 1879, at the post office in Danville, Illinois.

Editorials

Guest Editorial...

DWIGHT M. RUTHERFORD, Editor, California Citrograph

Among the most satisfying years of my life were those spent with students of vocational agriculture. I recall with pleasure the bashful student who became valedictorian of his graduating class—unheard of in earlier days for an "aggie." Then there were the two of unusual promise who now are distinguished scientists. But most satisfaction comes from the large number who found their places in the more progressive element of the farm life of the community. They learned basic skills and orderly thinking from close student-teacher relationships both in the classroom and in their farm projects at home. Parents often took a genuine interest and gained something from their boy's experiences, a valuable by-product.

The farm project as a teaching device, if used with imagination, is eminently sound. A brood of chicks, a sow and litter, a pen of calves, a few acres of crop, may be the starting point of an education limited only by the ambition of the student. Assuming responsibility of routine care, meeting emergencies, running into problems and seeking their solution are stimulating, and that seems to me to be the key—stimulation. Feeding livestock demonstrates the need of more information about nutrition, and might even lead into a career in biochemistry, as it did in the case of one man we know, once a vocational student.

Sanitation and crop pest control problems—and pretty soon the student is learning about entomology and chemistry because he wants to. Soil and water management lead to soil physics, chemistry, geology, hydraulics. Building farm equipment points to the need of a practical knowledge of physics, structural engineering, mechanics—and careful planning.

Keeping financial records teaches the principles of accounting. Assuming indebtedness and paying bills on time develops self-assurance, strong character and the

realization that the successful farmer consistently beats the average, and builds up a financial back log against the time when Nature may deal from the bottom of the deck. All that requires know-how.

The ability to speak in public, handle a meeting with dignity and dispatch come from learning by doing. Some years ago an "ag" student had a speech defect—he courageously tried out for the debating team—eventually made it. Now he is a distinguished scientist and an able public speaker. Behind him, when he needed help, was a teacher with imagination and courage.

With a background of doing things, gaining in a well-guided way a wide variety of experiences, the student realizes the need to obtain additional information in areas where the need is evident or painfully obvious. Some need only a suggestion, others require more positive treatment. Here good teaching tools may include the feather and the needle. But the boy with normal intelligence will soon get the point and with unobtrusive guidance go ahead under his own power.

What about improving the "teaching-learning process?" From the teacher's standpoint this means "doing a better job." The fallacy is to try to teach a class, as so commonly is done. Each student is an individual, each in his own way potentially a useful, solid citizen. The ability of the teacher may have much to do with his ultimate achievement. His strong points and his shortcomings need to be carefully appraised. The course of action unfolds day by day and the details of teaching change accordingly. This suggests that the teacher has to be alert to his own areas of need, and if he has a lazy streak in his makeup he is in the wrong business. The first improvement in the teaching-learning process is a careful study of each student, which requires the imagination to aspire and grow with him. Teachers, too, best learn by doing—doing well.

Have types of teaching changed?*

LYMAN E. JACKSON, Dean, Pennsylvania State College of Agriculture

Educators realize that there are great variations to be found in teachers as to the characteristics of their teaching method. It is possible, however, to classify teachers according to certain types. The following description of four types of teachers are from materials furnished by Professor L. J. Brueckner (more than a quarter of a century ago) to a class in supervision at the University of Minnesota. Following each description of type will be an account of how that type of teacher would teach the Babcock test as a part of a unit of instruction in agriculture. The material taken from Professor Brueckner is in quotation marks.

"Type I—Compulsion—The teacher is concerned with the practical utility in adult life of the subject matter that he teaches. All activity in the class is a

means to the acquisition of subject matter, and the strict discipline which he demands is to prevent the entering of any activity which will lessen the time devoted to the development of this efficiency. Little attention is given directly to the development of ideals, purposes, and standards. Stress is placed on the development of skills and factual knowledge. The teacher's activity consists mostly of assigning lessons from the textbook, in questioning to see how well the pupils have studied, and in explaining and drilling them on the parts needing it most. The pupils study their texts and try to answer in the words of the book. All activity is dominated by the teacher; and subject matter is chosen from logically organized materials."

Description of the teaching of the Babcock test by a compulsion type teacher: The class had been following

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*Adapted from an article written by Dr. Jackson and published in The Visitor, Vol. XV, No. 5, January, 1928, University of Minnesota.

Have types of teaching changed?

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their texts very closely, going from one topic to another as the textbook presented them. The Babcock test was the subject of the next topic. The teacher, realizing the importance of the test, decided that all students must become thoroughly familiar with the use and principles of the test. The pupils were assigned the reading in their text. During recitation periods, the teacher asked questions of each pupil. In order to insure a mastery of facts, each pupil was required to write out the details of the test from memory. No pupil was excused until he could describe each step. At the close of the chapter was an exercise on testing milk. The teacher brought some milk to school and required each student to carry out the exercise until each one could make satisfactory tests. At the close of the work, each student was informed as to the details and steps in the testing procedure and could make satisfactory tests of milk.

It will be noted in the preceding description that the teacher controls or dominates the situation entirely. All students are required to learn the test in the same manner regardless of their need for using the test. It appears that the test is being taught for the purpose of fortifying the student against some future need. There is little connection with the present. No attempt is made to acquaint the students with reasons as to why the test should be learned. No doubt, the importance of the subject matter is uppermost in the teacher's mind rather than the importance of relating the subject matter to the students.

"Type II—Teacher Preparation—The teacher's general aim is to determine the facts, knowledges, and skills necessary for adult life and to pass them out to pupils so attractively that absorption by the pupils will result. Many devices are used in the presentation by the teacher; these usually result in interest and voluntary attention by the pupils. Teacher-made outlines based on the text and enriched by references to supplementary books and other forms of pertinent materials are very evident. There is less studying from textbooks by pupils than in Type I. More variation in answers is allowed, and less emphasis is placed on repetition and drill. Supplementary material is used under the direction of the teacher. Discipline is more relaxed than in Type I, the teacher "talks down" to the pupils in a friendly way, and sometimes allows a class discussion. There is complete teacher control at all times."

Description of the teaching of the Babcock test by a preparation type teacher: According to the teacher's outline of teaching material, for his class in agriculture the Babcock test was to be considered as the next unit of work. The teacher read the text on the subject and also studied several reference books. The first class period was devoted to finding out what the students knew about testing and the reasons for using the test. The teacher then placed on the black-

board an outline of study which was copied by the pupils and used by them in their study. Recitations consisted of a question and answer procedure, which was continued until the teacher was satisfied that the students knew the facts. During the next class period, the teacher gave a demonstration in testing milk. As the teacher proceeded, he asked various students to tell what step or procedure was being developed and what were the next procedures to be carried out. Following this, each student made tests under the careful supervision of the teacher. At the end of the work, all students had knowledge of the test and each student could make satisfactory tests of milk.

The *preparation* type teacher thinks of education as an "absorption" process on the part of the students and a "doing" process on the part of the teacher. Such a teacher will spend much time carrying out certain preparatory activities which, if left to the pupils to do under the guidance of the teacher, would constitute valuable educational practices. Why should a specially prepared outline for study made by the teacher be given to the students with directions to follow it? Why not work out the study plan with the students, rather than for them? As in the compulsion type, the textbook is the rule and guide of nearly all activity, so in the *preparation* type the teacher might be said to have become the textbook, for the students must act as he acts, think as he thinks, and do as he does. It might be said that the teacher through his preparation becomes the model. A teacher of this type apparently assumes that students are incapable of self-direction.

"Type III—Motivation—The teacher's general aim is to teach pupils a body of subject matter through lessons in which activities are brought in by the teacher to arouse interest in the work and to bring about a better understanding of the material being developed. The activities are planned and motivated by the teacher, and are carried out by the pupils. Subject matter is grouped around major topics, often problems set up by the teacher. Subject matter limits are less rigorously observed than in the previous types. Desirable attitudes and ideals toward the work being covered are stressed. The teacher brings in pupil activity in the form of individual and group reports on assigned topics and in other forms of activity. He spends on drill only the time necessary to fix the subject matter. Much reference material is used, but it is mostly of the teacher's choice, although pupils are encouraged to look for pertinent material. Attempts are made to provide the socialization, but this is seldom real, usually consisting of the appointment of committees, chairmen, etc., by the teacher. The teacher meets the pupils in a friendly way in class discussion, but retains for himself the directing of most activities."

Description of the teaching of the Babcock test by a motivation type teacher: In order to promote interest in the Babcock test among his pupils, the teacher told them the interesting history concerning the development of the test. To further stimulate interest, the teacher ar-

ranged for his students to visit a local creamery when testing was being done. After this introduction, the teacher suggested that the pupils test milk from cows belonging to their home herds. With this in mind, the pupils under the direction of the teacher learned the facts about the test. This was done by studying the description of the test in the texts and by referring to reference books which were suggested by the teacher. The teacher questioned the students and had them write a paper setting forth the facts concerning the test. The next step was that of making tests. After the pupils had become reasonably proficient in testing, the teacher allowed them to complete their testing work by testing milk from their home farms. The pupils enjoyed their work, and all pupils knew the important facts and could make satisfactory tests.

The *motivation* type teacher marks a distinct advance over the *compulsion* and *preparation* types. Learning through doing makes its appearance in the *motivation* type, but there is still restraint and teacher domination. The teacher believes in student activity, but chooses to select and direct rather than stimulate and guide. The *motivation* type teacher is very prone to use artificial and external means of motivation. The procedure may lack when measured against criteria of genuineness. The weaknesses of the *motivation* type will appear further in discussing the following type.

"Type IV—Purposing—The teacher's general aim is to stimulate activities among his pupils which will enrich their present life in such a way that the experiences gained will be useful in adult life. The class work is markedly divided into phases, part teacher-controlled and part pupil-controlled. The teacher controls the activity during the periods of stimulation and reflection, the pupils determine the activities involved in the carrying out of the unit of work, with the teacher assisting where difficulty arises and guiding activity into fruitful channels. Subject matter is chosen and organized by the pupils, usually after stimulation by the teacher. The content and organization of subject matter are determined by purposes and not by logical sequence. There is almost complete socialization. Class work and disciplinary control are organized and administered by the group through pupil-appointed leaders. The teacher is accepted as one of the group. Group and individual reports of various kinds are very evident. Emphasis is placed on purposes, achievement standards, and ideals, not on results purely in terms of knowledges and skills. Memorization of facts is used only as a means to an end. Much supplementary material is chosen and used by the group. Little effort is made to restrict the material to the specific subject being studied, since a definite attempt is made to make the activity as many-sided as possible to establish contacts with other fields of knowledge."

Description of the teaching of the Babcock test by a purposing type teacher: Students in this class, with the help of their teacher, made plans for keeping production records on their home herds of cows. The boys worked out the nec-

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A practicing teacher's interpretation of - -

The problem method

He finds that it works

EVERETT CLOVER, Vo-Ag Instructor, Webster City, Iowa



Everett Clover

decide whether or not that learning situation was the best you could have provided.

1. Were the boys interested in the class activities today?
2. Did those boys learn new principles which they will retain and later be able to put into practice?
3. Have they been stimulated to do sound thinking for themselves today?
4. Have the "fast" students been challenged as well as the slower ones?
5. Have they developed ideals which will call for changes in their ways or in their farming practices?
6. Have they studied a seasonal topic?
7. Are they happy with their accomplishments for today? Do they feel they have learned something of practical value that can be put to use on a boy's home farm in the very near future? (not just a Mr. A and Mr. B problem.)
8. Are these boys leaving my class today with a feeling that I was sympathetic with them and their problems? (They leave some classes with a different impression—a feeling that they did a pretty good job of guessing what was in the notes the instructor prepared the night before or possibly last summer, not that the teacher was helping them with their problems but rather that they had to help the teacher find out something he has known for a long time.)
9. Do they feel that the teacher has the subject and the course of study very well in mind and was not just wandering or groping about in the vast field of agriculture?

Well, how did you make out? Could you answer yes to every one of these questions? Those lads who just walked by you on their way out of your classroom are the future farmers of your community and their parents and neighbors are justified in expecting the very best you can provide for them with the available facilities.

The Procedure

Would you mind looking over this outline of the method I am using now and teaching to college students under my supervision during their practice

FARM boys sent to your classes for education in vocational agriculture are entitled to the best learning situation you can provide. As you dismiss your next class and these boys walk out of your room ask yourself the following questions.

I should help you decide whether or not that learning situation was the best you could have provided.

1. Draw real problems from class members.
2. Select a problem.
3. State the problem clearly.
4. Seek probable answers from class.
5. Seek authority.
6. Discussion to correct inference.
7. Will our recommendation to the boy work for him?
8. Are there others in the class who might use these recommendations?
9. Summary of principles learned—notes.
10. Measuring progress of students.
11. Follow-up visits.

Making Problems Real

Most of these steps are self explanatory but some need to be picked apart to discover their place in the method. The step which gives the most trouble and if mastered will make this method work is *No. 1, Drawing real problems from the class*. To simply ask the class, "What problems do you have today?" is the very poorest approach. About all you will get from the class are problems it takes a veterinarian to solve. Boys will think only of things on their farms which are unusual and very much out of the ordinary. If there are no such conditions at home they will sit and say nothing. Space does not permit me to list all the various questions that can be asked to get the desired effect. Here are a few I use. You may have to fill in the blanks and of necessity will have to re-word some of the questions.

a. The teacher says, "Tell us about your productive project, Jim." You know he raises hogs and you want a chance to bring to the attention of the class some principles in swine production—that's why you asked Jim.

b. "Say! Do any of you boys know how to (some farm practice)?" If you allow them to discuss their ways of doing this practice long enough they will discover differences in ways of doing it and someone in the class will ask you, "Which is the best way to (do this practice)?" He really wants to know—they have that very problem on their home farm. That's it—that's what you want—a real problem.

c. Refer to the field trip taken the day before. "Why did they do this practice on Bill's farm this way?" There will very likely be various answers and when you get differences of opinion some class member will ask which is the best way. This puts the teacher in position to help the student asking the question and also encourages other class members either to prove they are right or to want to help find out the correct answer.

d. If some Dad seeks your advice on a farm practice you might encourage him to have his boy in your class ask that question in class. You would give the Dad the advice he was seeking but also have his boy seek out the probable answer in class.

e. Another question by the teacher, "What decisions are you and your parents going to have to make in the near future on your farm?"

f. Develop an experience related by a student.

g. Quiz over material in which they have had no work.

h. Capitalize on current events—papers, magazines, radio, television, gossip.

i. "Are you meeting your production-per-unit goals?" This question is excellent to use in a class of older boys if their project record books are up-to-date.

j. "I visited Floyd last evening. They have purchased their seed corn for planting in the spring. How many of you have bought yours at home? What kind are you going to grow? Why?" (Assuming that the teacher wants to take up a unit on seed corn selection or something closely related.) Some class member will likely ask what variety he should buy. Then you're off in the direction you want to go in helping the boy with his problem. You don't just give him an answer but follow the other steps in this method as outlined. You must ask questions until you are sure it is a real problem on some class member's home farm.

These are a few of the approaches and you will readily see opportunity to bring out problems in many other ways but in every case get yourself in the position of helping the student—the sympathetic approach. Now he's not studying something you have in your notebook in front of you—no, he's very much interested in finding out the answer to his own problem or in the real problem of a classmate. If this technique of drawing out real problems can be mastered you may proceed with this method. Until this technique is developed don't try the other steps. Think about ways of drawing out problems and many opportunities will present themselves. You'll get problems all right and they'll be real. Hypothetical problems made up about Mr. A and Mr. B won't do at all.

Select the Problem

Selecting the problem becomes necessary if you were skillful in *Step No. 1*. In most cases this *Step No. 2* works in conjunction with *No. 1* so it is really rather simple but very necessary. It may be that two or three boys have problems presented before you are able to get on in the procedure. Selection can be made in the following ways;

a. Give a verbal "quick" answer for the "undesirable" question or problem.

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The Problem Method

(Continued from Page 53)

Never ignore a question or problem for that would discourage future questions raised for class help and that must not happen here. Such answer will satisfy the boy who asked it and yet he will quickly forget the answer in most cases and that same question will come again later, so don't consider that it is lost forever.

b. Distribute the help on problems among members of the class. Members like to pass the help around and know their turn will come soon.

c. At the opening of a course you outline it and go over with the class what the course contains and covers. Now you may ask them what unit of their course needs attention and seems to have been neglected thus far.

Delimit the Problem

Having selected a problem we are ready to move to *Step No. 3, State the problem clearly*. There are three things to do here.

a. Write the problem as simply as possible including the boy's name who asked the question on the blackboard.

b. Clear up any questions there might be about the problem. Be sure it is understood by all class members.

c. Have students write the problem down in their notebooks.

There is a natural tendency for a "Unit Method" teacher to enlarge on a simple question and expand it to cover a whole unit of material. This soon discourages questions from the boys. To carry and keep possession of the ball in the game of football we have to continue to make our "downs." Likewise in teaching boys of high school age we have to make our "downs." We do it ten yards at a time and not the full one hundred. In making "touchdowns" we must go down the field piece by piece—keep the problems limited to a very small area. It will vary with age groups.

Obtain Tentative Solutions

Step No. 4 seeks probable answers from the class based upon home experience and knowledge before study. Some will take one stand on the issue, some will take another. The teacher calls to the attention of the class this difference of opinion and asks, "What principles are we going to have to know to get at the answer for this problem?" He might say, "What fundamentals will have their influence on this situation?" or by some such remark cause the class to evaluate their probable answers in terms of the principles involved. At times I have labeled this a separate step in the procedure.

Obtain Information

You, their teacher, have not told them the answer and they differ so much in their probable answers that it becomes very evident that they need to *seek authority*. This *Step No. 5* is the study period and by following this procedure the students are inspired to find information to support their stand with proof from books, bulletins, the teacher (who may be referred to here as authority), movies and farm magazines. There must

be a vast supply of well filed reference material and it will of necessity have to be very much up-to-date. The teacher at this point moves about in the room to see that the students are using the indexes, finding material which applies and showing interest in the information they are finding. Some may think they have the answer but it may not be applicable. You have your own ways of carrying on a study period but in this set-up small committees, buzz sessions, field trips, demonstrations, talks by people outside of class such as successful farmers or insurance men and other techniques may be utilized. Here is one place in the learning situation where individual differences are recognized. Students may "neighbor" back and forth helping one another just as their fathers do on the farm in busy seasons. Some boys like to tell about their experiences, this may be a place for a small amount of this type of trying to excel exhibited by them. You may even want to have a special report on the subject by some student at this point.

Check Information Obtained

When it appears that enough information has been located and that the class as a whole has found material which applies it is time for *class discussion to correct the inference, or Step No. 6*. Now the discussion is based upon quoted statements and there usually is much closer agreement. The teacher may want to say something like this, "Well, you had it about right in the beginning" or "It isn't just as some of us thought." Whatever is said must be tactful and let the losers down easy. Quickly turn the attention to the boy who has the problem and ask if the ideas found will apply on his farm. Don't dwell on it but try to get him to say he will suggest this recommended change in farm practice to his parents. Sometimes I think a short course in selling needs to be included in their curriculum but possibly we can tell them to just ask questions about this practice until they have a chance to make the recommendation decided upon during the class period. If *the recommendation to the boy appears to be workable, Step No. 7*, then we are ready to move on to *Step No. 8—that of checking to see if there are others in the class who might use the recommendation on their farms*. This makes the discovery of new information seem a little more useful to the members of the class.

Reach a Sound Conclusion

We may have the feeling that the problem is solved and so be ready to leave it and take up another. That would be a mistake for we should *make a summary of the principles learned and take notes, Step No. 9*. The notes taken are our final recommendation to the boy on his problem and statements of principles learned. We may have to revise our own list of approved practices.

All of these nine steps should, in my opinion, be completed in about two hours or less for most high school students. If it takes much longer we are not making our "downs" and interest will lag and that shouldn't happen to any of us.

Step No. 10 measures the progress of the students and is usually attended to the day following the others or in some cases several days later. The quiz and test questions should be over the recommendations and principles that were deemed important enough to write down in the notebooks. I think you will be gratified with these results, the principles will be understood and will be retained longer than usual. Tests and quizzes of course will not give us the full picture of the progress being made by the student.

Follow-up

Step No. 11 follows up the progress of the student on the farm. When we visit we always check up on how the recommendations made by the class in the classroom are working out in practice. By basing one third or so of the grade on this home practice more problems will be encouraged for class use. It will assist you with that most difficult technique, namely, drawing out problems.

Some Criticisms Answered

Here are some criticisms offered regarding this system and my view of them.

1. It doesn't look as though you can plan ahead. You will not be able to follow quite as exact a pattern as by other methods but it will be seasonal and the time to study a problem is when it comes up in class if at all possible. The teacher's head work is done during class time and primarily during the *Step No. 1* process of drawing out problems. The more skillful you are in this the more nearly you can follow your plan. Lesson plans are made as usual on the unit basis and for the reason that most absenteeism among teachers is on Monday morning—these plans give the substitute a unit to work on in your absence which will be new to the boys in the class. If you are present Monday you may or may not follow the lesson plan made out Friday.

2. It appears you might repeat material. To this remark I simply have to say that the teacher must be alert but also that if a problem comes up which uses the same principles already learned it gives opportunity to quickly review them, which is good. Repetition can be controlled by your handling of *Step No. 2*.

3. Can we be sure of covering all of the course in four years? All of the material we plan for these high school boys will not be valid four years from now and so I think it is better to put emphasis upon rules of good thinking and work on problems which can bring change today and trust that if we have done a good job of training boys to solve their own problems now they will be able to do so the rest of their lives. We couldn't teach all agriculture in four years anyway.

4. Are students interested in other class member's problems? I counter with this one—Are they interested in the hypothetical problem of Mr. A? They are very much interested in a fellow classmate's problem and will work hard

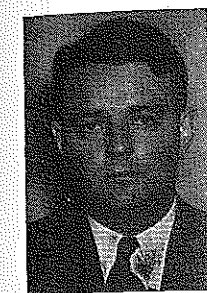
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You can improve your teaching by - -

Using Production Goals

Their meaning and how to use them

STANLEY WALL, Teacher Education, University of Kentucky



Stanley Wall

WORKERS in agricultural education should be concerned with evaluating the progress of students in developing and carrying out their farming programs. Teachers should evaluate the progress they make toward the attainment of their teaching objectives. Many of the evidences of the change in the learner's behavior may be manifested in the changes in agricultural practices followed by the learner.

Relation of Goals to Practice

Much has been written and said as to the need for practice in order to learn. Even so, some people get mixed up in their thinking as to the basic reason why students should have farming programs. This can be illustrated by a recent observation: A teacher and class listed as one of the reasons for having a farming program—"Opportunity to practice what we have learned in class." The teacher should not have students engage in a supervised farming program in order that the students may practice what *has been learned*, but in order that the students may learn. Always, of course, there should be plenty of opportunity to practice what has been learned.

One's goal determines his action, determines the activities he engages in as he attempts to reach the goal. It is through engaging in activities that learning takes place. In the absence of goals, the learner has no desire to do things differently than he is now doing them. The same thing applies to teachers. If teachers have no goals relative to students' having better farming programs

or to providing better learning experiences through the farming programs, there will likely be no change in what the teacher will do in securing better farming programs. Persons who are satisfied with what they do—who believe it to be good enough—will not likely change their manner of performing.

Production Goals

Students may set goals in terms of specific yields or other forms of production they hope and expect to attain. Goals may be set in terms of the product secured in the enterprise by the end of the period, such as pounds of butterfat produced by a cow in one year; or they may be set in terms of results which occur while carrying out the enterprise, such as the number of lambs dropped per ewe. Students should have goals for each efficiency factor in the enterprise to be conducted.

The teacher of vocational agriculture should focus his attention on accepted (by authorities), justifiable, desired (by the students), learning achievement in his teaching and then relate his teaching efforts to the achievement. He needs to keep in mind that boys may stress achievement other than learning as being evidence of progress. The desired learnings will take place if the teacher provides the necessary meaningful learning experiences in securing the achievement.

Ordinarily, achievement does not occur only at the end of an undertaking. Instead, it occurs all during the undertaking. To get a flock of ewes to drop 1.3 lambs per ewe is an achievement. The teacher need not wait until the lambs are sold to recognize this as an achievement or to cause the student to see the relation of the results secured to the practices carried out. The time to do this is as soon as the lambs are dropped. The same is true in securing good production in dairying. The stu-

dent need not wait until the end of the lactation period to determine if the cow is producing in terms of the yearly production goal. In fact, it may be undesirable to keep a cow through the lactation period if her total production will likely be too low.

Setting Production Goals

The setting and using of production goals (which may later be used as production standards), especially the intermediate goals for the efficiency factors in an enterprise, can greatly increase the effectiveness of the teaching-learning situation.

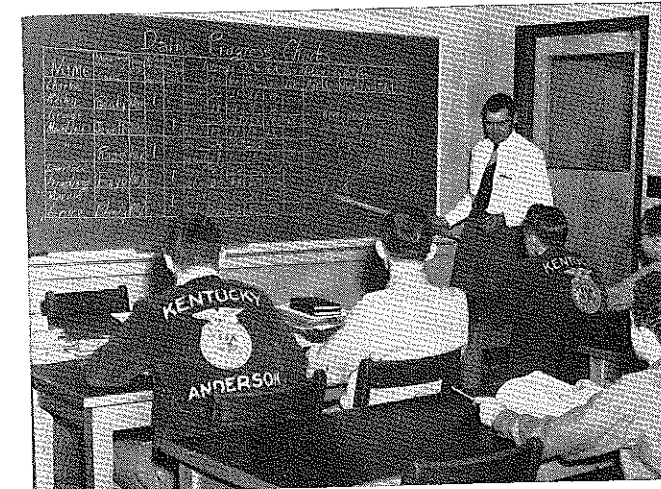
One of the real values of establishing intermediate goals for the various phases of each enterprise is that it enables the student to have clearly in mind the production he hopes to secure. The intermediate goals become mileposts by which the student can determine if he is on schedule in attaining the final, over-all goal. They serve as a closer magnet toward the kind of performance the student accepts, and enable him to have evidence of his success or failure nearer the time of the performance. Knowledge of the occurring achievement (success or failure) contributes much to nearly all learning. Once a student understands that certain efficiency factors have a direct bearing on his success, he is ready to study and decide how he should carry out the practices that will affect the final outcome in terms of his goal. There is then an opportunity for meaningful learning.

Immediately after the student has selected an enterprise to be in his farming program, he needs to establish production goals in terms of the efficiency factors which apply to his conditions. Fairly frequent checking on the progress made is essential if students are to receive guidance in overcoming difficulties. Teachers cannot intelligently plan their instruction unless they know the difficulties and where they exist, and then cause the students to recognize the difficulties. The teacher should guide the student to give emphasis to those factors that can be measured objectively, such as weight of pigs at 56 days; number of lambs dropped per ewe; pounds of milk produced during the second

(Continued on Page 56)



Vo-Ag students at Lawrenceburg, Kentucky make regular entries on progress charts.



Warren Duncan, teacher at Lawrenceburg, Kentucky uses progress charts in teaching agriculture.

month of lactation; etc. In so doing, the student has set for himself certain goals, with the attainment not too far in the future, which provide motivation for meaningful learning through striving to attain them.

Students can determine the progress being made toward the attainment of their goals by comparing the results they are securing with the standards and with other students. For example, if boys know the relation of the weight of lambs at 60 days and the likely weight at 120 days, they can check the weight of their lambs at 60 days and determine the progress being made toward the 120-day weight goal. If certain practices necessary to attain the goal are being neglected, they may be detected and the necessary changes made to enable the boy still to succeed with the project. Some teachers spend a great deal of time in teaching the various phases of farming and then are satisfied with recording only the total amount of products produced or marketed and calculating the income. Sometimes entrants in various contests are recognized as having done an outstanding job, using only these two criteria as a basis. Granted the desirability of knowing these things, it is only a partial evaluation of the students' achievement of proficiency in the enterprise. When they become the teacher's only criteria for evaluation, much opportunity for good teaching is lost.

Using the Production Goals

The students must be caused to realize that they cannot attain their production goals unless they use good practices. What practices the students should follow and how to carry them out become the basis of problem solving both in the class and in on-farm supervision. As the student, from day to day, is aware of how he is progressing toward his next goal, he is conscious of the need for learning how to carry out each practice that contributes to attaining his goal.

The interest of the student in adapting and using improved practices will be greater if he discovers the need for their use when something can be done about it immediately. To discover, after the project has been completed, that he should have used some practice and he will not need to use it again for several months, does not provide much challenge. Therefore, he does not have much incentive to learn the practice.

Teachers spend time and effort in getting students to keep farming-program records. The chief reason for keeping records is the use to be made of them. If students do not use the records they have kept, they have less and less interest in keeping records. Junior and senior boys should have more interest in and do a better job of keeping records than freshmen and sophomores. However, the reverse is true in many cases, due to the fact that after keeping records as freshmen and sophomores, no use was made of them other than to fill in a summary form.

The use of production goals and standards, in terms of the efficiency factors in an enterprise, from the plan-

ning of an enterprise to its completion, will stimulate interest in record keeping, and help give meaning to records, summaries, and the evaluations that may be made. The student is able to decide realistically whether or not he is making progress, and whether his goals were too high or too low. By periodically checking on the attainment of his goals, the student can know to what extent superior performance is necessary on his part to attain the goals.

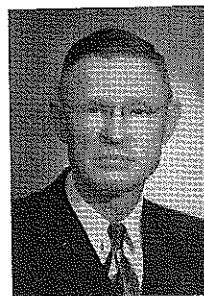
Farmers need to evaluate their performances intelligently. Prospective farmers need to learn to evaluate their performances. They can learn this only through evaluating them. Teachers of agriculture should teach their students to evaluate their own performances. A fundamental step in teaching an improved practice is to see that the learner develops the ability to evaluate the results from the use of the practice. If learners do not acquire this ability, the teacher has failed to fully teach the use of an improved practice. As already stated, teachers spend a great deal of time attempting to teach improved practices. If this time is to be spent most effectively, some of it must be used in teaching the learner to evaluate his progress—evaluate throughout the project, not at the end only.

Keeping and Using Progress Charts

One of the easiest ways of getting students to have intermediate goals is to provide a progress chart on which the students may record their goals. The chart should have space for listing the student's name and other facts about the project such as degree of ownership, scope, etc. Columns should also be provided for each efficiency factor that is to be checked on. Production goals in terms of each of the efficiency factors should be decided on and entered in the appropriate columns as soon as the student has selected the project. Probably the teacher should have progress charts for all the enterprises on which he spends group-teaching time. For example, if teaching time is allocated to group teaching of improved practices in sheep production, the teacher can justify using group time in keeping and using a progress chart on the sheep projects.

After the project is under way and the first milestone has been reached, the progress should be checked and evaluated. For example, if a progress report is being kept on sheep projects, soon after the students' ewes have finished lambing the progress to that point should be checked and evaluated. A comparison of results secured should be made to the improved practices carried out. The teacher should be able to cause each student to understand how and why he came out as he did. The student should recognize the relation between the practices he used and results secured. If he has reached his goal, he should realize that it was due to the use of certain good practices. If he failed to reach his goal, he needs to understand why he failed. He should be able to see the relation of where he is now to his ultimate goal. If he is behind schedule, he will want to know what can be done to attain the goal. In some cases

More Teachers Join Point 4



A. C. Hale

A. C. HALE of Camden, Arkansas, formerly the vocational agriculture instructor in the Fairview School at that place, and past president of the NVATA, has accepted assignment with the Mutual Security Agency and is now in Thailand. His title

there is that of Educationist.

WILLIAM Holloway has taken a leave of absence from teaching in Oregon to join the Point 4 Program at Karachi, Pakistan. He has had twenty-three years of experience in teaching vocational agriculture in Oregon and recently served as alternate



William H. Holloway

NVATA Vice-president for Region I. His assignment calls for serving as one of the advisers in vocational agricultural education and to assist in training Pakistani teachers. The position is that of Agriculturist (Extension Specialist-Training) with temporary headquarters at Karachi. □

The Problem Method

(Continued from Page 54)

on it if it is practical. It is for me the very best interest developer and will bring healthy participation by the entire class.

5. What about the development of "background" material? Well it just appears to me to be the best time to develop this background as we go along for it will appear to the student as useful information then. All of these principles are really background material as I see it.

Each teacher must develop his own system, method and teaching techniques. I am firmly convinced that teaching vocational agriculture based upon real problems of the class members is an efficient and successful way to provide desirable learning situations which will change obsolete practices on the farms of the nation. The farm boys in our classes will meet the challenge if we as teachers meet ours. □

he may need to realize that his achievement is so far behind that it will not be possible to attain the goal; therefore, he will need to revise his goal. His achievement may be so good that the goal is no longer a challenge; in this case he will want to revise it upwards.

When the teacher is providing such teaching-learning situations much meaningful learning will take place. □



These members of the Young Farmers class are using magazines with specimens and samples.



Orderly and attractive display of magazines increases their use and their effectiveness.

If used properly - -

Magazines provide teaching aids

Read one teacher's estimate of their value

M. O. PHILLIPS, Vo-Ag Instructor, Coats, North Carolina



M. O. Phillips

FARM magazines are becoming more popular each year with vocational agriculture teachers throughout the country. This is apparent from the increased subscriptions to farm magazines by most departments in the United States.

Teachers go to great odds in making their magazines attractive by building display racks, cabinets and panels. The one illustrated in this article is only one of many kinds and types being built by Ag teachers. Here a young farmer is scanning through a farm magazine for information. Farm magazines may be classified into the following groups and normally at least one or more copies of these groups may be found in most departments. 1—General magazines (covers

both livestock and crops); 2—Livestock; 3—Poultry; 4—Crops; 5—Specific subject matter or areas; 6—Miscellaneous; and 7—Farm Mechanics and shop work.

Why Are Magazines Used?

Agriculture teachers may ask why farm magazines are becoming more popular. Several answers may be given. Here are a few. 1—Newer information may be had from magazines than some of the other available publications; 2—Magazine articles are usually better illustrated, color illustrations may be found in several of our leading farm magazines; 3—Editors and publishers recognize the importance of authentic information and have gone to our experiment stations and colleges for much of their information, and in a lot of cases research workers actually write the articles for magazines; 4—Magazine editors find farmers using successful practices and write up their practices and successes—this type of article has great appeal for farm boys. Some disadvantages may also be listed: 1—Some

ideas presented in magazines lack years of testing and fail to live up to advance notices; 2—Not enough information is given in some articles and is misleading. Farm magazines though have their place as supplementary reference materials in our library.

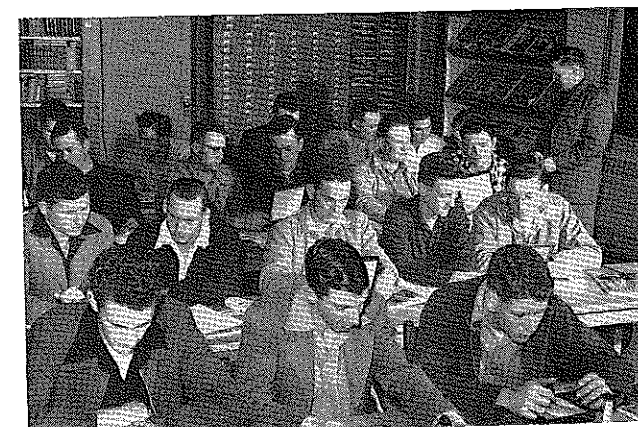
How to Use Magazines

Another question an Ag teacher may ask is: "How can I use farm magazines?" There is no 1-2-3 answer to this question. The magazine itself has a great deal to do with how it can be used. We have several magazines that are written for area coverage, while others have nationwide coverage. In each of these types, I have found many helpful ideas and information. In our general magazines where articles on crops and livestock are written we find the greatest use. Many of our fine magazines today dress-up their articles with catchy titles, quotations, and illustrations. In departments where an opaque projector is owned or can be secured, the use of farm magazines is greatly enlarged. Nearly all of the major articles will have one or more illustrations, many of which will be in color and can be used as opaque slides.

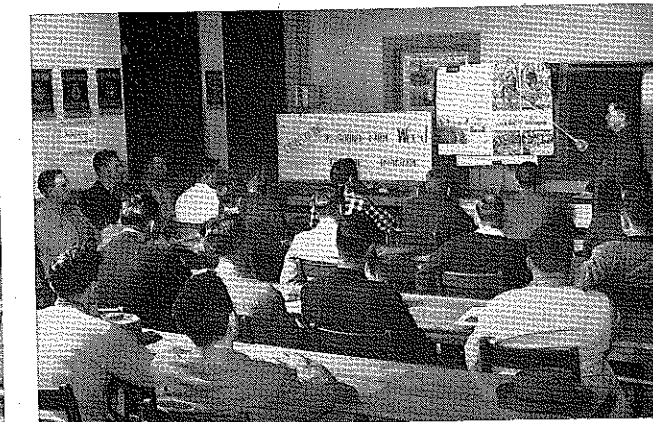
Selecting Materials

For the past several years I have had a visual aids committee and it is the duty of this committee to help find, if possible, new teaching aids for the de-

(Continued on Page 63)



Magazines have usefulness in teaching Young Farmer classes along with other teaching aids. Note the orderly arrangement of materials to facilitate use.



Interest and assistance in using magazines is increased through the use of wall charts. Such charts sometimes are furnished by magazine publishers.

Appraising aptitude for farming*

Here you will find some guides

A. GORDON NELSON, Associate Professor of Educational and Vocational Guidance, Cornell University

YOU are a teacher of vocational agriculture. You feel that you have a right as well as a responsibility to help students answer the question, "Should I Take Vocational Agriculture?" You therefore must have some criteria for distinguishing between those who should be encouraged to prepare for farming from those who should be discouraged. You need to have these criteria in mind not only when you are talking with students but also when you are discussing the present and future make-up of your classes with the principal or counselor in your school. What criteria do you use? "That's easy," you say, "I want students who have at least some aptitude for farming." But what is "aptitude for farming," and how can it be appraised?

When we say that a boy has aptitude for a given occupation, we mean that an appraisal of his past achievements and present characteristics has led us to infer that he has "what it takes" to develop proficiency in that occupation. When we state that a student has aptitude for farming, we mean that in our judgment he can probably become, relatively speaking, a successful farmer. As used here, the term "aptitude" has a complex connotation, for it implies . . . "not only the capacity to learn, but also appropriate interests, temperament traits, and physical attributes."¹

Capacity to Learn

There is some research which indicates that, of a group of boys who became farmers, those who received higher marks in school tended to achieve a higher status in farming. However, there is also evidence that individuals who are farmers range in tested intelligence from very high to very low. For example, when the scores on the Army General Classification Test of over 18,000 enlisted men were analyzed in terms of the 74 civilian occupations from which they came, it was found that former farmers as a group displayed greater variability in their scores than did the men from the 73 other occupations.² This finding suggests that a relatively low rating on a group intelligence test should not by itself constitute a basis for discouraging a boy from taking vocational agriculture in high school.

The use of tests to determine fitness for farming has received virtually no

* Based in part on a more technical article entitled, "Aptitude for Farming," which was written by the author for the *Encyclopedia of Vocational Guidance* (New York: Philosophical Library, 1948).

¹ Nelson, A. G., *Aptitude for Farming. Encyclopedia of Vocational Guidance*, p. 375.

² Harrell, T. W., and Harrell, M. S., *Army general classification test scores for civilian occupations. Educational and Psychological Measurement*, 1945, 5, 229-239.

attention in the literature of vocational guidance. Although no instrument is available for measuring farming ability *per se*, tests of academic, clerical, and mechanical competencies may supply information which can be used in counseling with students who claim an interest in farming. If the results of such tests are wisely interpreted, they may be particularly useful in helping boys choose between the many types and levels of jobs in the general field of agriculture.

In appraising aptitude for farming, careful inquiry into an individual's work record relative to farming activities is much more useful than are test results. Capacity may be judged from a boy's demonstration of his ability: to do well in a course in pre-vocational agriculture; to operate and repair farm machinery; to recognize problems that exist on his father's farm; to begin, finish, and secure a fair monetary return from, a farm project; *et cetera*.

Interests

The fact that a student *claims* that he is interested in vocational agriculture is not sufficient evidence that he has a well-founded desire to become a farmer. In order to appraise a boy's interest in farming as an occupation, a teacher or a counselor should look for other "clues." Among the "signs" which suggest real interest are these: participation in hobbies of an agricultural nature; taking part in extra-curricular activities related to farming; active membership in organizations that are open to farm youth; and the voluntary initiation and completion of farm projects.

An interesting study designed to measure interest in farming was conducted by Scott.³ He devised a test and administered it to a group of individuals who were known to be interested in farming; he also gave it to a group who were *not* interested. He found that certain items differentiated, to a statistically significant degree, between the two groups. Some of these items are presented below, in order that teachers of vocational agriculture may use them to elicit "clues" when they interview prospective students. The interested group tended to answer "Yes" to the following questions, whereas the not-interested group tended to answer "No":

1. Do you enjoy talking to people about agricultural problems?
2. Do you like to walk over fields to see how everything is growing?
3. Do you read books or magazine articles relative to better farm practice just for your own pleasure?
4. Do you feel that further training

³ Scott, M. J., *Devising a test to measure interest in farming*. St. Louis: Unpublished M.A. in Education thesis. Washington University, June, 1938, p. 71.

along agricultural lines would be worthwhile for you?

5. Do you object to eating in restaurants for any length of time?
6. Does the soft earth of a freshly plowed field give you a feeling of pleasure?
7. Do you like to watch livestock judged at a fair?
8. Do you feel that children growing up on a farm are usually happier and develop a better character than city children?
9. Are you confident that there is a good future for a better than average farmer?
10. Do you feel that agriculture is the most important single industry in the world?

The interested group tended to answer "No" to the following questions, whereas the not-interested group tended to answer "Yes":

1. Do you feel that a city child has more advantages than a child who grows up in the country?
2. Would you like to live in a large city?
3. Do you prefer to sleep late in spring and summer?
4. Would you be satisfied in working for some one by the week or month at a reasonable salary all the rest of your life?
5. Do you feel best when you are all dressed up?
6. Do you consider yourself among the healthiest fifty per cent?
7. Do you like to watch a storm?
8. Would you prefer a more exciting life than that which you now lead?

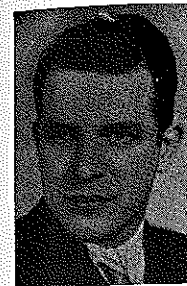
Temperament Traits

Although there is no objective evidence available concerning traits which might be considered essential components of aptitude for farming, a perusal of the relevant literature indicates that the following are believed to be important: ability to adjust to the conditions of rural living, enthusiasm for farm life, industry, dependability, persistence, cooperativeness, thriftiness, and ability to work without supervision. It is not possible to measure these traits, and a person cannot be reliably rated with respect to them on the basis of a single interview. Nevertheless, a teacher who knows a given student well has some basis for making at least a "rough" appraisal of that student in respect to traits such as those mentioned.

Physical Attributes

It is true that the physically handicapped can and do succeed in some types of farming. In general, however, farming is an occupation in which good health, physical vigor, and freedom from disabilities are definite assets. A teacher of vocational agriculture may make use of the following as a basis for estimating the extent to which a student possesses the physical qualifications for farming: observation of his participation in athletics, farm work, and other activities requiring physical exertion; interviews; attendance records; and medical reports.

(Continued on Page 60)



Lloyd J. Phipps

There are several different types of scorecards in use in vocational agriculture. One type is used in judging contests for grain and livestock. Another type is used to evaluate progress of individuals or to evaluate the difference between individuals. A third type is

If you use scorecards in your teaching, then read - -

Developing scorecards

To increase their effectiveness

LLOYD J. PHIPPS, Teacher Education, University of Illinois

used to evaluate the progress of programs or to evaluate the difference between programs of organizations such as the FFA.

Although personnel in vocational agriculture are constantly using scorecards and developing or revising them, little attention is usually given to what constitutes a good scorecard. Little attention is also given to the principles of developing a good scorecard that measures what it is supposed to measure.

Objectives

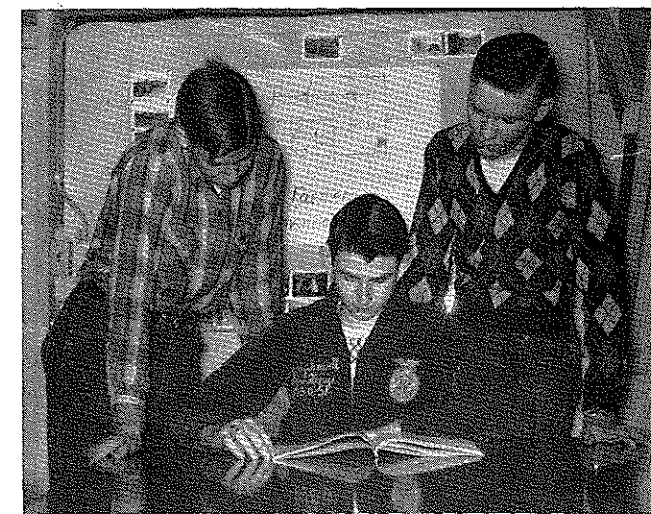
The first step in developing any scorecard probably should be a careful analysis of what it is supposed to measure. Placing in writing the abilities which a scorecard is to measure is usually a good use of time. A committee of educators and subject experts was appointed recently in Illinois to develop a scorecard for classifying land according to its best use. No progress was made until they took time to "spell out" the abilities they wished to measure.

Not only should the objectives of a scorecard be developed, but the objectives of each part of it usually need to be determined. These objectives, in terms of abilities, should then become a part of the scorecard.

Situations change, but it seems that scorecards once developed tend to be rather static. They also seem to help perpetuate a contest or program. Probably one of the reasons why this is the situation is that most scorecards do not specify the abilities they are designed to measure. Since they do not specify these abilities, they often are used year after year with little thought regarding whether they measure what they are supposed to measure or whether what they measure is still desirable, or worthwhile. For example, some scorecards

SCORECARDS or rating systems of various types are used in vocational agriculture, and they are revised or new scorecards are developed each year to measure various aspects of the program. The Future Farmers of America Chapters use scorecards extensively in their programs of work.

used in corn contests are designed primarily to evaluate an individual's ability to select seed corn from the field. When such a scoreboard is used in a region where individuals do not need this ability because hybrid seed corn is purchased in a sack, it perverts the activity so that it becomes only a contest which achieves little of its educational potential. Designation of the objectives of each



Quality of performance while serving on a committee should also be evaluated.

recently developed scorecard for determining land use. It illustrates how the objectives for each section or part of a scoreboard may be "spelled out."

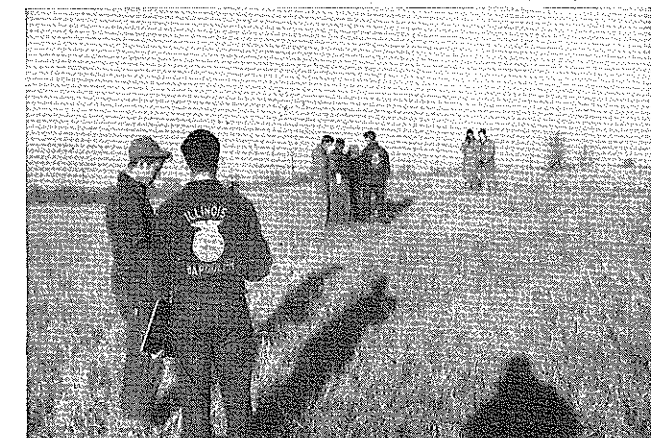
Flexibility

Any scorecard developed for use in more than one situation is more useable when it provides for some flexibility in its use. The scorecard for determining land use illustrates how provisions for flexible use may be incorporated.

The first section is designed to determine the ability to recognize the physical features of the land. Thirty-six points are allocated for this ability. There are six ratings which are used as evidence of possession or lack of the ability. A typical scorecard would probably allocate six points for each rating. In this scorecard no definite number of points is allocated for each of the six ratings under this ability. This makes the scorecard more flexible because the importance of each of the items of evidence may vary in different parts of a state. When no points are allocated for each item of evidence, the local users can correlate the value of each item to its importance in their communities.

The Scorecard for Determining Land Use also illustrates another desirable feature. Space is left for adding other factors which may be considered as evidence of an ability. This allows for

(Continued on Page 60)



The recognition and "spelling out" of the abilities to be measured by a scorecard should make an activity more meaningful to the participants.

On page 60 is a

You need to understand - -

The meaning of final marks

As one basis for improving instruction

J. STANLEY AHMANN, School of Education, Cornell University

SOMEONE once likened a teacher's marking system to the procedure followed by a farmer who wanted to estimate the weight of one of his hogs. Having no scales, he tied a band around the midsection of the animal, fastened this to the end of a long pole, and with the other end across a high board fence, attached a basket into which he piled rocks until the two ends balanced. Then he guessed the weight of the rocks.

This pithy analysis of the ordinary teacher's marking system is, unfortunately, more accurate than inaccurate. The elaborateness of the process followed by a given teacher has not always guaranteed the presence of greater reliability and validity in the final marks given. More often than not the resulting marks from practically every system, be it elaborate or not, have been widely and justly criticized, particularly because of their lack of meaning. Perhaps no other element of the modern educational system suffers more abuse more regularly than these numbers and letters which attempt to indicate academic success.

Final Marks in Vocational Agriculture

The problem of assigning fair and meaningful final marks is particularly troublesome to the vocational agriculture instructor. Not only must he consider the usual classroom successes and failures experienced by his pupils, but also he must certainly remember the progress made by each pupil in his supervised farming program. Furthermore, the heterogeneous nature of this program clouds the picture considerably.

Attempts to evaluate the learning which has taken place in all of the various activities that are a part of the vocational agriculture program have been reported regularly in the literature. In recent years in this journal, for example, Raine¹, Schulte², Rhoad³, Prescott⁴, and Makel⁵ have described in detail what each considered to be a proven method of evaluating their pupils in vocational agriculture. Although their schemes varied in design and in purpose to a minor degree, they were uniformly consistent in recommending rating scales in which the pupils performed at least a part of the rating. In spite of the fact that writers such as Tyler⁶ are only moderately enthusiastic about pupil self-evaluation, the foregoing investigators subscribed to the point of view that the cooperative evaluation each proposed offered the pupil an insight in the results of his learning experience and also improved pupil morale.

As successful as rating schemes of the type reported may be for a given vocational agriculture instructor in a given teaching situation, two problems of a

practical nature remain unsolved. First, how can the ratings, whether made by a pupil or instructor or both, as well as any achievement examination scores be reduced to a single final mark which is so often demanded by the school system? To this question the parent as well as the pupil might add the second question: After the reduction has been achieved, what does the result mean? The failure of not only vocational agriculture instructors but all educators in general to answer successfully these two questions is undoubtedly the source of much of the dissatisfaction expressed by all concerned with final marks.

Considerations Pertinent to the Problem

To clarify the position of the vocational agriculture instructor in this matter, several basic considerations must be reviewed. In the first place, as pointed out very clearly by Hammonds,⁷ learning should be evaluated in such a way as to obtain evidence of the degree to which the course objectives have been attained. In addition only the educational objectives and not the agricultural objectives, i.e., those pertaining to the improvement of agriculture, are involved in the procedure.

The second consideration is a direct outgrowth of the concept of individual differences. Whether the differences can be precisely measured or not, the fact remains that every pupil entering a vocational agriculture class differs from every other pupil in terms of his present command of the knowledges, skills, and appreciations considered to be the educational objectives of the course. In addition, each pupil profits to a varying degree from every learning experience, thereby progressing toward the educational goals of the course at different speeds. The fact that each pupil begins his pursuit of knowledge at different starting points, and then advances in an individual manner, should, to be sure, influence the method of representing the learning that took place.

If these two considerations are acceptable, additional guiding principles concerning the two questions posed in a foregoing paragraph can be formulated. With regard to the first question, which pertains to the reduction of ratings and examination scores to a single final mark, the vocational agriculture instructor, like virtually all other teachers, finds himself facing a task that is as arbitrary as it is compulsory. If objectives are unique enough to be classified as to importance and type, it seems logical that the evaluation should be sensitive enough to reflect the degree to which a pupil has achieved each objective individually. This argument tends to support the detailed evaluation schemes proposed by Raine, Makel, and others.

Relation to Objectives

A final mark only has meaning in so far as it can be related back to a specific educational objective. It would seem, then, that the most reasonable method of organizing a marking system would be, first, the careful formulation of objectives in the light of the subject matter to be mastered, the interests and attitudes to be developed, the skills to be perfected; and secondly, the construction of some type of rating scale or examination in keeping with the particular objective in question. The resulting profile represents the status of the pupil. The summing of the various marks composing the profile so as to obtain some type of conglomerate final mark, which incidentally defies definition, is no less ridiculous than combining soy beans, wheat germ, and hog litters in an attempt to obtain pomegranate seeds.

The foregoing discussion partially answers the second question, which concerns the meaning of the final marks. However, one often ignored aspect is yet to be brought into focus. Briefly, it is the differentiation between pupil growth and pupil achievement.

Possibly it has been implied in the previous discussion that a single mark should be assigned for each objective. Although it is true that such a system yields more meaningful evaluation than one final mark covering all objectives simultaneously, the mark still contains an undesirable mixture of growth and achievement. The distinction between these two terms can be readily identified. The already mentioned "starting points," each unique to that pupil as he begins the course, can be considered as the achievement levels of the pupils as of that moment. Examinations, along with product and procedure ratings, identify the achievement at the completion of a unit, a semester, and the like. The difference between the two is growth, or gain. Thus, it is easy to imagine a pupil, having begun at a relatively low achievement level with regard to a given objective, exhibiting sizable growth during the course, yet ending with only average achievement when compared with his classmates. On the other hand, a second pupil, having begun at a relatively high level of achievement with respect to a given objective, may make only moderate gain during the course, yet finish the course at an achievement level well above the first student. In fact, it is possible that the final achievement of the first pupil was lower than the initial achievement of the second pupil. An infinite number of other variations for other pupils are possible, of course.

To be meaningful, a final mark for any objective can not contain some mysterious combination of growth and achievement. The vicious criticism of marking systems will never subside unless a certain mark for one pupil resembles in meaning the same mark for a second pupil. Can parents be blamed for their perpetual state of puzzlement when they are confronted with a pair of identical final marks, one of which is supposed to indicate excellent growth coupled with average achievement for one pupil whereas the second represents

(Continued on Page 69)

To succeed in shop instruction - -

Use practical shop projects

LEONARD DERR, Vo-Ag Instructor, Ferndale, Washington

ONE gets results in a shop by demanding projects. We all know that each boy must have a supervised farming program; then why not a supervised shop program as well? You say that there are no projects in your district because of the small farms and the dads are working on jobs in town. I don't believe it! Even for such a farm there probably is a need for an extension ladder to be used in case of fire, a conventional step ladder, gates in a yard, a good work bench, a tool case or a utility cart.

How can one stimulate boys to have projects? By the same procedure that he develops supervised farm projects. Take the boy home and talk over with his parents what can be repaired or constructed that will be useful and practical on the farm. Up to this point probably any of us can succeed, but from here on the work begins.

First the boy should decide what he wants to build. If an instructor is acquainted in his community, he will probably know where two or three of the intended projects are located. For example, a boy may be interested in making a loader for a cub tractor. In the company of the boy the instructor may look over the types of loaders, select the one he'd like to copy and draw plans with all of the dimensions. One should remember that commercial concerns hire designers to work out the best plans. It is a wise move to follow them. An instructor should know that he may copy a patent if he uses it for himself and not for resale.

How can the instructor get all of the boys started on projects at once? Don't expect to. Every year you assign unit work to develop skills and undoubtedly the best students will finish their units first. As each student completes his unit, get his project selected and assigned and see that he has the necessary material to go ahead even if you have

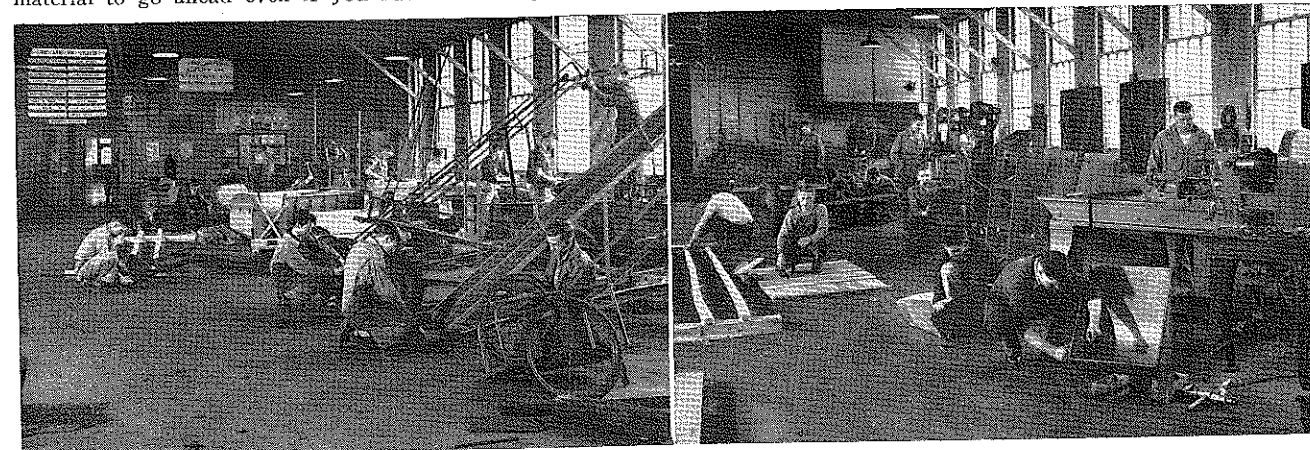
to get it yourself. Under this plan you are starting your best students first so that they may set an example for the others. As they make each part of the project, see that it is done correctly. If it is wrong, have him re-do that part. Other students will fall into line. Require that every boy have a project or a continuation of projects to keep him busy for the year with absolutely no exceptions. Remember that you get from students just what you demand.

For each boy merely to have a project isn't the whole answer either. In fact it may be to the discredit of the instructor if the projects aren't correctly made. Remember that, regardless of how large the project is, it is merely a combination of small parts that make up the larger part when combined. Make each part exact. After all parts are made, assemble them to save floor space.

I know that in any given community one may compile a list of 500 projects and build them with a minimum of equipment. After all, if these farm boys are not going to have all of the farm shop tools at home, train them to work under the existing conditions of their respective homes. □

The Cover Picture

The process by which a teacher brings about desirable changes (learning) on the part of a pupil is likely to find its best opportunity in situations similar to the one illustrated on the cover page. Here we see Don Strickland, an advanced pupil in the Vo-Ag Department of the Fair Bluff, North Carolina, High School and his teacher J. R. Rabon conferring on a problem which has grown out of Don's supervised farming program. Teaching built around real problems and directed toward the needs of individual learners furnishes much of the solution to improving the teaching-learning process. □



The key point of Mr. Derr's success in getting good construction and repair projects into the farm shop is said to be the confidence of the parents that their boys can do a workmanlike job that results in usable, durable, practical equipment. This confidence is due to the high standards of workmanship required by Mr. Derr of his students. These high standards are developed while students are doing work units to develop skills. All such work must be accurate and well done or it is not acceptable and must be repeated until acceptable. Note the use of the very excellent space provided in this shop. The many practical projects underway in the above pictures require well-organized space.

Magazines Provide—

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partment. This committee looks through all the farm magazines that come to our department and if a picture or illustration is worth using as an opaque slide or as a poster, the committee prepares it. They clip from the magazine, paste the picture on black cardboard using cico paste or rubber cement and when dry place a file number on one corner of slide or poster and file. They record the file number in the file record notebook in pencil, which will later be typed for permanent record. This committee occasionally prepares materials that are of no value to the department but this can always be discarded later. The value of this committee to my department has been invaluable in time saved, increased teaching aids available, and creating interest among the students to build up the department. I have, in the past two years added more than 200 usable opaque slides to my library by the use of this committee. Another job this committee does is to remove certain articles from issues of farm magazines, clip to fit a manilla folder and file. These articles are called tearsheets. The value of tearsheets is in the space saved. Space becomes a problem if magazines are filed. Also much of the information in the magazine will be of no future use. This committee files tearsheets much in the same way as opaque slides except in quantity. This makes it possible for future class use. While making my lesson plans I look through these files and if I come across one or more of these tearsheets that have no value I discard them.

Manner of Use

Magazines are no different than bulletins, pamphlets and other reference materials in their use. Magazines are supplementary reading materials and should be used as such. I believe variety in any type of teaching is essential to good morale, high interest, and accomplishments of students.

While I have used magazine-reading days in my teaching, a practice I don't like, I believe the most effective way to use magazines is as other references are used. I have used trick ideas such as the

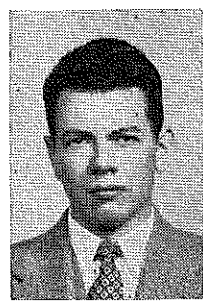
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Why use

The field trip in teaching

Some answers and advice on planning

J. K. COSTER, Teacher Education, Purdue University



J. K. Coster

ONE of the major activities of the vocational agriculture teacher is that of creating environments or atmospheres in such manner that appropriate learning outcomes may be enhanced. If an educational program is to be truly vocational in nature, the educational environment should duplicate—insofar as it is practicable and possible—occupational environments in which persons work.

From a purely practical standpoint, and in consideration of factors such as time, instructional costs, transportation problems, the number of students with whom a teacher is working, and the like, instructional activities should be carried on whenever possible at the school plant—in the classroom, laboratory, or shop. However, in view of the nature of instruction in vocational agriculture, it must be recognized that many instructional activities require a more practical, realistic type of environment than that which may be obtained within the school plant. Thus, field trips to farms and to installations where agricultural products are marketed and processed are an integral and essential feature of the vocational agriculture instructional program. School administrators and teachers who are endeavoring to establish and maintain instructional programs of high quality will be aware of the fundamental values of field trips and will provide for them through establishing appropriate policies and arranging for adequate transportation. The field trip in vocational agriculture instruction, it should be noted, is basically an application of a larger educational conception in which the school and the community which surrounds it are seen not as separate entities but as a continuous, broad, comprehensive learning environment.

Purposes of Field Trips

Field trips in vocational agriculture instructional programs may be conducted for one or more of the following purposes:

(1) *To introduce units of instruction.* Sound educational practice suggests that students should be prepared for and convinced of the value of the learning activities which they undertake. It is the responsibility of the teacher to provide incentives for learning. Field trips conducted for the purpose of observing the practices of farmers in the community or to see the need for farming practices that should be initiated by

farmers in the community may serve as effective motivating techniques. Students, for example, may be shown the destruction wrought by soil erosion or the effect of inadequate fertilization of a corn crop in the way of introducing units dealing with conserving soil or fertilizing corn. A trip to the home of a member of the class who has reported a diseased condition of one of his project animals may help the other students to recognize the symptoms of the disease and serve as a point of departure for initiating a study of the nature, prevention, and control of the disease.

(2) *To secure a desirable locale in which demonstrations may be performed and skills may be practiced.* Many farm skills such as castrating pigs, culling hens, building fence, and laying out contours need to be taught on a farm in the community.

(3) *To collect additional data upon which conclusions to farm problems may be based.* Information contained in sources located in the classroom is likely to provide inadequate basis for drawing conclusions to farm problems. There may be a need for securing first-hand information from farmers or other persons in the community. For example, in order that an intelligent decision may be made regarding the type of farrowing house to construct, the members of a class may need to visit several farms and inspect different types of farrowing houses.

(4) *To compare conclusions drawn in class with actual farm practices.* It is desirable that students of vocational agriculture have the opportunity, through their supervised farming programs, to try out the conclusions that they have developed in class. However, in a large number of cases, students may not have the opportunity to try out conclusions within the span of their high school careers. A type of indirect try-out may be obtained if they may be taken to farms where they are able to compare their own conclusions with the practices of successful farmers. In cases where one student has been able to submit his conclusions to a test in connection with his farming program, the other students may ob-

serve the effect of this student's conclusions. Through field trips of this type, the students are able to subject their conclusions to a kind of practical test and thereby become more appreciative of the practicability of their ideas.

(5) *To develop appreciation for the intricacies of marketing and manufacturing processes.* The intelligent, well-informed farmer should be able to understand and appreciate the processes by which the products that he produces are prepared for ultimate consumers. Trips to such places as livestock markets, meat packing plants, milk processing plants, poultry and egg marketing houses, and seed houses are valuable inasmuch as they afford students the opportunity of assaying the role of the marketing and processing agencies in providing outlets for the products which farmers produce.

Planning Field Trips

The planning of field trips involves two distinct yet related stages. The first of these refers to administrative policies that are formulated by school administrators—by themselves or in cooperation with the entire professional staff—which govern the use of the field trip technique and specify the procedures to be followed in arranging for a field trip. These policies should be sufficiently broad and flexible to permit the teacher to use the field trip technique under circumstances in which he feels that instructional activities will be more effective if they may be carried out away from the school plant. On the other hand, provisions should be made for informing an administrative officer regarding the purpose of the trip, the location of the trip, the hour of departure and return, and the method of transportation to be used. In cases where a school-owned bus is to be used, the teacher may need to ascertain that the bus will be available at the hour that it is needed.

The second stage of planning refers to that done by the teacher and by the teacher and students cooperatively prior to the trip. The teacher's part of the planning is actually a year-around activity; during the year while he is making visits to farms he may be constantly analyzing farming operations for field

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W. S. Weaver (right), Vocational Agriculture Teacher in the Delphi, Indiana, High School instructs a group of students on a farm. The boys are learning how to mix sodium flouride properly with grain and to use it as a method of worming hogs.

Further evidence that - -

Supervised practice is essential for complete learning

Examined in the light of the learning process

OBED L. SNOWDEN, Teacher Education, Mississippi State College



Obed L. Snowden

THE relationship of the supervised practice program to the teaching program has been stressed for years. We have employed it as the basis for teaching content; as a stimulus in the teaching procedures used; and as an opportunity for the learner to apply the subject matter studied. However, we have not sufficiently emphasized it as the farm boy's learning laboratory.

Basically, all learning takes place by the process of association. There are several factors which condition the extent to which learning is likely to occur in any situation. These are well covered in the so-called "laws of learning."

- The law of readiness. (Desiring to respond)
- The law of effect. (If response is satisfying, will tend to repeat)
- The law of exercise. (Repetition strengthens the response, leading to "habits.")

Involved in all the above is another principle of learning: namely, one learns what is practiced. Supervised practice in vocational agriculture, or rather the practice itself, or just the fact that a topic is being discussed which is as close to the experiences of the student as are the common practices of the farm, gives fertile basis from which associations of various kinds can spring. The Leaning Tower of Pisa means to the student no more than the closest thing he has seen, experienced, or visualized that approaches the actual Tower itself. Supervised farm practice has as its basis things which are common to the boy's everyday experiences. He knows the soil.



J. E. McCarty, Vo-Ag teacher at Utica, Mississippi, makes a field visit to Ray Neal. Such supervisory visits help to improve the teaching-learning process.

he knows livestock, he has seen things grow, reproduce, and die. These experiences which he has had can be added to through supervised practice. Further associations can be made which are only a few steps further than something he already has visualized and experienced. There is not the large gap sometimes found in trying to get learners to associate two things, neither of which is a real, living, experienced part of his past learning.

Farm practices being a part of the boy's past experiences; being a familiar thing; having at least some past associations which are pleasant to the boy from which further associations can be added, furnish one of the most strategic points for the law of readiness to be applied. Any number of motivating devices can be applied: the hope of financial return; the desire to do a better job of something that is already being done; establishment in farming, etc., all can be used to promote readiness on the part of the learner to make his present practices better and to add new practices.

The primary aim of vocational agriculture is "to train present and prospective farmers for proficiency in farming." If we follow the principle—one learns what he practices—there is but one way for a student to learn to be proficient in farming. Supervised practice is the core of this learning to be proficient.

According to this concept, the job, learning to fertilize cotton efficiently, is completed only when cotton is efficiently fertilized. The fertilizing of the cotton is the content of the job. Whether this "learning to fertilize efficiently" means learning the job entirely (no knowledge previously of fertilizing cotton) or learning to do it better, supervised practice, practice under the supervision and control of the one attempting to teach the practice, is a necessity.

In summary, according to the concept of the principles of learning set forth, this is what is expected through supervised practice:

1. We wish the student to learn either an altogether new practice or modify an old one. We begin by complying with the first law of learning. We get the learner, through motivation, in readiness to accept and desire the new or modified practice.

2. Complying with the principle which says that one learns what he practices, we attempt to see that he puts into practice this new or modified practice. Here supervision is necessary to see that the objective is realized and that he does what is planned.

3. If the learner is satisfied with the results, he will tend to repeat the practice. Whether because he made more financial gain, whether it saved time or for whatever reason it is superior to an old practice or is an acceptable new practice, the effect is the same. His being satisfied with the results puts into play the law of effect—for being satisfied with one thing will tend to make him continue that same thing as long as it produces these same or more satisfactory results.

4. As satisfaction with a given practice gradually induces the individual to try the practice again and again, the law of exercise will become effective, and what was a new or newly modified practice will become a "habit." To insure that satisfyingness will continue with repeated practice, close supervision must be given. □

The Field Trip in Teaching

(Continued from Page 64)

trip possibilities. Prior to taking the trip, a personal visit to the farm is advisable in order to make necessary arrangements for the trip. In planning to visit a plant such as a livestock market, preparations should be initiated two or three weeks in advance of the date of the trip so that arrangements may be made to provide plant personnel for assisting with the trip.

Since time on a trip away from school is at a premium, the teacher and students should carefully plan the trip so as to secure maximum benefit from the experience. One excellent technique is to request the students to assist in preparing a list of questions, the answers to which they may expect to obtain on the trip. Each student should be provided with a list of the questions and should be encouraged to use these as a basis for interviewing the person who is being visited. Note-taking should be encouraged; consequently, it is desirable that each student be provided with a clip-board or some other device to facilitate writing.

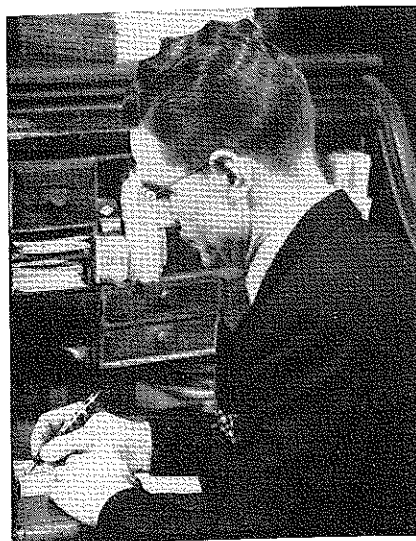
Some field trip experiences may be concluded at the place of the trip; however, it is generally advisable to devote some time to reviewing the trip after the class has returned to the classroom. Here the points that were observed may be discussed more frankly and completely, although caution should be exercised to avoid criticizing unduly or untactfully the operations that were observed. Frequently, members of the class may wish to discuss points that were not specifically related to the unit under consideration, but which have a definite relation to some aspect of vocational agriculture instruction. □

Do you need help in using - -

The field trip as a teaching procedure

Here is some advice based upon experience

R. E. HAUPTMANN, Vo-Ag Instructor, Mount Ayr, Iowa



R. E. Hauptmann

OF all the various teaching procedures at the disposal of an instructor of vocational agriculture, I feel that the field trip is one of the most difficult procedures to use efficiently and effectively. If one is teaching on a problem basis, certainly there is no better place to teach farm problems than on the farm. The field trip poses many more problems than does class room procedure because there are many details which contribute to a training and a learning situation. If a field trip is to be used efficiently and effectively, much time needs to be spent in preparation and planning. The student must first know the problem at hand, what to look for, where to look and how to look. The problem should be presented in class with ample time allowed for searching out the technical information needed for consideration in the solution of the problem. At this point in the class discussion, it will be brought to light where such problems might arise on any farm and where one might look for those problems.

With the problem well in mind, including the technical knowledge related to it and some of the conditions which might be creating the problem, the student is now ready to study a real farm situation by making a field trip. Proper

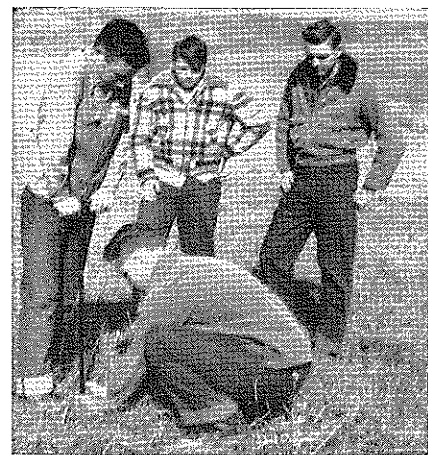


Students learn to map soils. Here they are using the Abney level in determining slope.

conduct to, during and from the field trip all contribute to a good learning situation. Regardless of the farm problem to be studied on the field trip, every student should share a definite responsibility in the final solution of the problem. With large classes it is sometimes difficult to assign definite jobs or responsibilities to each student in studying some farm problems. In some cases, it may be necessary to divide a problem or to study more than one problem on a single trip. Nothing will contribute more to lack of interest and ultimate failure of worthwhile accomplishments than to have some students without any responsible job to be done on the trip.

Possible Procedures

At this point, I might mention some teaching procedures used in our department in making field trips, realizing such procedure is not adaptable to all situations. With a large department and large classes, I find it advisable, particularly with farm problems to be studied on our 40-acre demonstration plot, to spend time presenting the over-all problem and then break that down into smaller problems. Take, for example, the problem of how to establish a seeding of Birdsfoot Trefoil on ground following soybeans. Since this problem is studied on a field trip following class room discussion, it will be necessary that we study several problems. One group will be assigned the job of making soil tests in the field to determine the fertility level of the soil. One group will be assigned the job of laying out key contour lines, and another group will be responsible for drawing up plans for the cultural practices to be used including the use of a nurse crop. The first class room discussion following the field trip will be spent summarizing the findings of each group and arriving at definite procedures to be followed in establishing the seeding. Arrangements will be made by appointed committees



Taking soil samples to be sent to laboratory for complete chemical analysis.

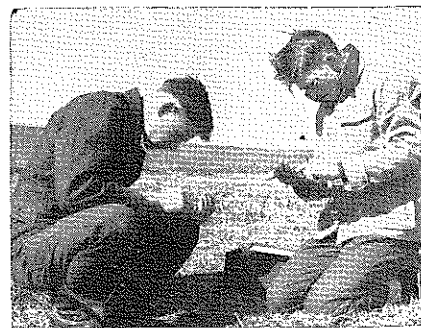
for the purchase of the required fertilizers, trefoil, and nurse crop seed. When all necessary materials have been received and the weather and soil conditions permit, another field trip is planned.

Before departing on the field trip to the demonstration plot one committee will have the responsibility of servicing the tractor and all equipment needed for seed bed preparation, fertilizing, inoculating and seeding. It will be the responsibility of this committee to see that all equipment is delivered to the plot. As the remainder of the class arrives, one group will be assigned the task of setting the fertilizer spreader for proper application of fertilizer. One group will apply the fertilizer. Another group will take turns on the tractor preparing the seed bed. While these groups are at work another group will be adjusting the drill and filling it with the trefoil and nurse crop seed. As soon as all preparation has been completed, one operator will be responsible for the tractor pulling the drill while one rides the drill to keep a check on its operation. As the seeding operation progresses the entire class will observe the rate and depth of seeding by inspecting the ground seeded. Thus, by dividing the responsibilities, giving every boy a definite job, we succeeded in seeding four acres of trefoil with flax as a nurse crop in one field trip. In this manner every boy learns by doing.

Many Teaching Opportunities Available

There is a definite advantage in planning field trips so that every class member has a definite responsibility while on the trip as well as contributing to the class discussion following the trip. Transportation to and from field trips offers many opportunities for the study of highway safety, traffic laws and regulations. If a field trip involves the use and operation of farm equipment, here is the opportunity to teach care, maintenance, and operation. If equipment is transported on highways, there is the opportunity to teach responsibility, laws in using highways, and safety precautions to be used by farmers with machinery on the road.

In summary, I would suggest that a field trip be well planned in advance; that the trip be used as a follow-up of a class room discussion of a definite farm problem, and that the teacher capitalize on every phase of the trip as a teaching situation. Every class member should have a definite responsibility and the findings of a trip should be summarized in the following class discussion. □

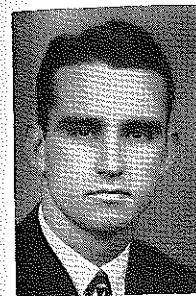


Testing soil in the field for lime and phosphate. (All pictures from Mt. Ayr, Iowa.)

This will help you in developing

A procedure in planning pupils' farming programs

HAROLD R. BINKLEY, Teacher Education, University of Kentucky



Harold R. Binkley

THE students must have farming programs if the teacher is to teach vocational agriculture. It is through good farming programs that students are trained for proficiency in farming and that the students make a beginning and advance in farming. The better the farming programs, the better the training opportunities, the sooner the start in farming, and the more rapid the advancement in farming. It is the job of the teacher to help each student have the best farming program possible in his situation.

The teacher has many important responsibilities in guiding students in deciding on their farming programs. He must feel that good farming programs are important if his students are to have good farming programs. To get good farming programs chosen is half the battle in succeeding with supervised farming. Guidance is an exceedingly important function of a teacher of agriculture. If students are to select good farming programs, they will need teacher guidance. Before the teacher can intelligently guide a boy in setting up his farming program, the teacher must first have thought through the situation to determine what program he thinks the boy, probably, should have. In too many instances a teacher waits until a boy comes to him and says, "I can have a gilt and 100 chickens"; then, without guidance, the boy ends up with these two projects as his farming program. The teacher must, of necessity, be ahead of the boy in his thinking if he is to guide the boy in the selection of his farming program.

There seem to be three distinct steps a teacher of agriculture needs to think through before he can give a boy good guidance in selecting his farming program.

1. Become familiar with the home-farm situation
2. Decide on the pattern of farming that should be on the farm
3. Decide on the farming program the boy, probably, should have each year in vocational agriculture

Become Familiar with Home Farm

Becoming familiar with home-farm situation involves:

A. Securing certain home-farm facts which include:

1. Tillable acres and total acres in the farm

2. Kind, acres, and yield of the various crops grown
3. Kind, head, and production of the livestock kept
4. Acres of woodland, weedland, and waste land
5. Kind, size, and condition of power and machinery on the farm
6. Kind, size, and condition of buildings on the farm

B. Securing certain personal information, such as:

1. Age and health of the father
2. Approximate labor income
3. Approximate net worth of father
4. Age of other boys in the family and number of sisters
5. Enterprises in which the boy has responsibility for management
6. Desire of the father to take the son into the farm business with him
7. Conveniences, such as: radio, telephone, running water, bathroom, electricity, and refrigerator
8. Willingness and ability of the father to permit the boy to share from a desirable supervised farming program

C. Going over the entire farm with the boy and the father to determine:

1. The various classes of land on the farm and the approximate acres of each
2. How the various classes or kinds of land are now being used and how they can be used to best advantage
3. The kind and quality of hay crops grown
4. Kind and quality of pastures on the farm
5. Kind and quality of livestock on the farm
6. Kind of fences and gates on the farm
7. Field arrangement of the farm
8. The stock-water supply
9. Condition of the farm buildings

The teacher of agriculture should go over the entire farm situation of each farm from which a student comes (as outlined above), find out what factors are limiting the success there, and decide in his own mind how these factors may be improved. This is necessary if the teacher is to guide the students intelligently in deciding on their farming programs.

How can a teacher become thoroughly familiar with the home-farm situation of a particular boy? R. V. Keeling has been selected as a "case" to illustrate how this question can be answered. R. V. is 15 years old and will be a sophomore in agriculture this fall in the Anderson County department of vocational agriculture. Mr. Warren Duncan is his teacher. This boy is by no means

the best sophomore in the class, neither is he from the best farm represented in the class. He is from a rather typical farm in the county.

The father is 38 years old and is in good health. "R. V." has two brothers age 10 and 17, and one sister. The father lets the boys have management responsibilities in their crops and livestock. Conveniences: automobile, radio, electricity, and refrigerator with no running water, no bathroom, and no telephone.

In addition to the above information, the teacher needs to go over the entire farm once or twice in order to get an idea of the kind of land on the farm, the crops grown, the livestock on the farm, the fences, gates, buildings, livestock water supply, and many other things.

With this background, the teacher of agriculture should be ready to think through step two.

The Future Pattern of Farming

The amount of land of the various classes will determine, to a large extent, the pattern of farming that should be on the farm. A soil-conservation map is valuable at this point. If no such map is available, the agriculture teacher will need to estimate the acres of land of the various classes on the farm.

Most of the land on this farm is relatively unproductive, as shown by the soils map. Therefore, pasture should be the main feed crop produced, with enough hay to feed the livestock when the pastures are not productive. There is no corn land on the farm.

With this basic decision made, the teacher will need to decide on the kind of pasture-consuming livestock that is best suited to the farm. Should the major livestock enterprise be beef (Kentucky cow-calf plan), sheep, or dairy? Because of the poor fences and the dog problem, sheep are eliminated. The facts indicate that this farm is well suited to beef. It would make a good farm for producing milk-fat calves. In this particular case three other factors affect the decision: personal preference for dairying on the part of the father and the three boys, the farm being located on a grade "B" milk route, and an ample supply of farm labor. Therefore, dairying was selected as the major livestock enterprise. One of the boys is likely to farm at home with his father after finishing school. If only one boy were at home now, the "Kentucky cow-and-calf" plan might well have been selected as the major livestock enterprise.

With the basic feed crops and major livestock enterprise determined, the next step is to decide what the farm should have on it and what it should be producing four or five years hence—say by 1957. By this is meant pounds of tobacco per acre, acres of improved practices, acres of good alfalfa hay, number of cows and their average production, buildings that should be added, what stock-water supply should be developed, what fences built, and other farm improvements.

(Continued on Page 71)

To increase your effectiveness - -

Use demonstrations in teaching

Some helps in selection, planning and execution

O. P. NAIL, Teacher Education, Arkansas State College

MUCH has been said and written, by educators, concerning the processes of learning. For example, what is learning and by what avenues do we learn? Most educators of today seem to agree that learning is a process whereby a change in the doing, knowing, or feeling behavior is achieved by an individual. Learning is an active process, not a passive one. Most educators and psychologists agree further that eighty per cent or more of what a person learns is learned through the eyes. A relatively small percentage of our total knowledge comes through the ears.

The above definition and generalizations seem to indicate rather clearly the importance of the utilization of the demonstration technique in teaching vocational agriculture. If learning is the change of behavior and if most of our knowledge comes through the eyes, what technique of teaching can better utilize the eyes as an avenue of learning? Can any other method or technique mark the beginning of change in behavior as effectively as a good demonstration?

Many Demonstrations Possible

The value of the demonstration is effectively emphasized with an example: Suppose a teacher purposes to teach his students how to tie a rope-yarn knot with a rope. He holds the rope before his class and tells them exactly how the knot is tied. If he then passes out ropes to them, how many could tie the knot? The answer is none. If, however, he demonstrates the tying of the knot slowly, while telling exactly how it is done, the chances are that sixty per cent or more of the students can complete the process. Scores and scores of the things we teach in vocational agriculture lend themselves to the demonstration technique.

Besides being psychologically and educationally sound, the demonstration accomplishes some important immediate objectives. If a new practice or technique is adequately demonstrated, less expensive materials are wasted. The teacher can teach more at a given time. The demonstration is therefore economical as concerns the teacher's time, students' time, material and equipment.

Planning the Demonstration

The potentialities of the demonstration are unlimited. These potentialities cannot, however, be fully realized by the

teacher of vocational agriculture unless he plans carefully and well. Planning and preparation are probably more important when using the demonstration than with most other means of teaching because the teacher must be familiar with the steps in the process or practice to be demonstrated in addition to knowing his subject from the standpoint of knowledge and background. Further, he must have his materials and equipment laid out in advance. Some results of well-planned demonstrations are increased interest, more rapid learning and fewer discipline problems. Nothing disrupts a demonstration more than for a teacher to be forced to stop in the middle of a demonstration and send after or go for needed equipment or supplies. On the other hand students are quick to discern the lack of preparation when a teacher stumbles through a demonstration and indicates clearly that he has not properly prepared himself.

The demonstration is used on operative or manipulative jobs or units, that

is jobs or units that involve the acquiring of a skill. Units such as treating seed oats, pruning fruit trees, and farm mechanics jobs, among many others, fall in this category. The planning for units of this nature is rather similar to that necessary for managerial or informational jobs. Essentially the same steps are involved in making a teaching plan for both types of units. The job analysis or breakdown is the most important preparation a teacher can make for a demonstration. This is not saying that a teacher should not make a complete lesson plan but it does mean that the analysis or job breakdown is a must if a good demonstration is to be carried out. In view of the importance of the breakdown, an operative problem or unit, "Pruning the Common Stone Fruits, Peaches, Plums and Apricots" is analyzed below.

Giving the Demonstration

The necessity for planning and preparation by the teacher has already been emphasized but since the success of the demonstration will depend largely upon this planning and preparation it cannot be stressed too much. It should be borne in mind that the demonstration can be used alone or in conjunction with other techniques of teaching. For example, a classroom lesson could be taught on the unit outlined above before the demonstration is undertaken or in some cases the demonstration itself will be sufficient. (Continued on Page 70)

JOB OR UNIT

PRUNING THE COMMON STONE FRUITS—PEACHES, PLUMS AND APRICOTS

| Steps | Procedure | Questions |
|--|---|---|
| 1. Get equipment ready | 1. Large pruning shears 2. Small pruning shears 3. Pruning wax 4. Step ladder if necessary | 1. When are small shears used? 2. When and how wax is used. |
| 2. Laying out plans for pruning a tree | 1. Gather students around tree. | 1. What systems of pruning are practiced? 2. Which one is best for this orchard and under our situation? 3. What system has been followed here? |
| 3. Lateral cuts | 1. Make a lateral cut near body of tree or near another branch. | 1. What is a lateral cut? 2. Why is it so necessary when marking a lateral cut to do so near the body or branch? 3. When and how to apply wax? |
| 4. Terminal cuts | 1. Demonstrate cutting back the ends of branches near a node. | 1. What are terminal cuts? 2. Why are they necessary in this type of trees? 3. How much terminal pruning should be done? |
| 5. Pruning the tree | 1. Proceed to prune the entire tree. | 1. What branches should be removed first? Why? 2. How much thinning should be done? 3. How is sunlight best let in? |
| 6. Clean and oil equipment. | 1. Demonstrate | 1. Why is it necessary to clean and oil equipment immediately after use? |

Do you know how you can

Cooperate in the guidance program

The Vo-Ag teacher can help.

PAUL F. SPRAGGS, Vo-Ag Instructor, Halifax, Virginia

A key in effective guidance is cooperation—cooperation of teachers and pupils—between the home, the school and the community. Much of this cooperation has to do with securing, analyzing, interpreting and utilizing information so as to assure the fullest growth on the part of pupils.

All teachers in the secondary school—coaches and academic and vocational instructors—should work together in securing, interpreting, analyzing and utilizing information to help pupils in making adjustments and in making vocational choices in light of their ability to profit therefrom. All teachers have certain guidance functions. While it can be said with assurance that guidance personnel, in the main, are better prepared to carry out the program, it can likewise be said with equal assurance that they need information gathered objectively and recorded accurately of a variety of kinds and collected from many sources.

Some ways in which teachers of vocational agriculture may work with the guidance programs of their schools follow—

1. They may collect, analyze and interpret information about farming and related agricultural occupations such as might be needed by their fellow teachers and by their guidance directors. This information could be of a sort needed by boys and girls in gaining greater insight into farming and related occupations such as—

- What types of farming are conducted in our State?
- How does the income from farming in our state compare with the income from other business ventures?
- What is the average income of farmers in our country? Our state? How does this compare with the income of other workers?
- What are some of the related farming occupations in which one might find employment?

Or the information needed might be that essential to teachers and guidance directors in broadening their knowledge of agriculture. Perhaps they are interested in acquiring information as to the occupations available to the agriculturally trained person. Perhaps they want to become better informed on local farming conditions and terminology. It seems that the teacher of agriculture should be able to supply this assistance without much effort.

2. They may keep accurate and complete records on all pupils of vocational agriculture insofar as it is possible and feasible. Just as the records of the academic teachers and the guidance directors are available to the teachers of

vocational agriculture, so should the records of the teachers of agriculture be available to other members of the faculty. Naturally adequate safeguards should be instituted to insure the accuracy, permanency and privacy of records. Some of the records the agricultural teacher has available which have tremendous value for the guidance program are:

- Records of the accomplishments of pupils in NFA or FFA activities.
- Records of conferences and interviews with vocational agriculture boys.
- Records that depict the home background of pupils, showing farming status, income, educational attainments of parents and economic status of parents or guardians.
- Records that portray the attitude of parents towards the students' supervised farming programs.
- Anecdotal records of pupils. These may be made on all pupils, especially those experiencing difficulties in making adjustments.
- Records of pupils' achievements in vocational agriculture.

3. The teacher can keep guidance personnel and academic teachers informed of his guidance functions as a teacher of vocational agriculture. Many members of faculties of secondary schools are not familiar with the duties and responsibilities of their fellow teachers. Thus, unintentionally, they make unjust demands and unfair accusations.

4. They should recognize their limitations in guidance ability and function and, when necessary and without hesitation, refer pupils in need of assistance to the guidance director.

The school with all its departments exists for the purpose of helping boys and girls achieve their fullest development along socially approved and useful lines. To that end every resource of the school should be directed. □

Final Marks—

(Continued from Page 62)
average growth resulting in good achievement for another pupil?

Growth should be rewarded, yet high achievement could be defended as the more important, particularly in such an area as vocational agriculture where it may actually be manifest as dollars and cents. To escape the predicament of trying to incorporate both ideas into a single package, it is apparent that a double marking system for each objective is demanded. With one mark representing pupil growth and a second representing pupil achievement, even though these marks may be based on more subjective evidence than objective

evidence, a long step has been taken toward a simplification of the answer to the nagging question as to what a certain final mark means.

Conclusion

Interesting as it is to speculate as to the future developments in the determination of final marks, the immediate problem of assigning them this semester remains unanswered. If the vocational agriculture instructor is faced with the necessity of submitting a single final mark for each pupil, he has little choice but to combine his profiles so as to award greatest importance to academic successes with respect to most important objectives. He also has the decision of doing this with respect to achievement, growth, or a combination of both. In this connection it would be well to recall the statement of Ross⁸ in which he argues that, if only one final mark is to be given, it should represent achievement only.

Obviously this is only a stop gap suggestion. If adequate solutions are to be found to the perpetual problem of crystallizing the meaning of final marks, elaborate steps will have to be taken. There is little doubt that the position of the teacher today is so vulnerable on this matter that the inauguration of such operations as here proposed, even though detailed and time consuming, is overdue. The difficulties are obvious. To evaluate growth, for example, means evaluating initial achievement, thereby increasing the length of the evaluation process. Also, to evaluate growth and achievement for each objective separately demands a greater variety of instruments and scales.

The process of submitting but one final mark should be tolerated a minimum length of time. The initiative necessary to correct these unhappy results must come from the school faculty. Who but the vocational agriculture instructor should feel more keenly the dismal inadequacies of a single final mark? Faculty discussions, coupled with an intelligent planning in cooperation with members of the community, possibly stimulated by a discussion pamphlet published by the National Education Association,⁹ are the most obvious means of improving pupil evaluation.

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Have Types of Teaching Changed?

(Continued from Page 52)

essary details to put the plans into operation. They arrived at the conclusion that each one would have to learn how to use the Babcock test if he expected to keep worthwhile records. The boys asked the teacher to help them plan the testing program. A procedure was developed which each boy recognized as being the best plan for learning how to test in an efficient manner. As a result the boys overhauled the testing machine owned by the school, and fitted out a corner of the laboratory for convenience in testing. Each boy studied the procedure of the test and made tests.

They called upon the teacher to help them when necessary, and to pass upon their test results. Soon the boys were carrying on the regular testing program necessary to make their production records complete. One of the boys discovered in his reading study that the skimming efficiency of farm cream separators could be checked by this test. This led to the boys' asking their teacher to send for the necessary equipment. The teacher made it possible for the students to order the necessary supplies. The test was used to the best advantage by these boys and their interest in the test resulted in their becoming familiar with the history and principles of the test as well as its practical value.

In examining this last description, what are the evidences of self-control which may be found? It is evident that the teacher did not assign the tasks, consequently, self-control was expressed in the fact that the boys set themselves to the task of keeping production records. No doubt the teacher had much to do with the situation in a stimulative capacity, but in the last analysis, the members of the class made the decisions. Self-appraisal is apparent in the fact that the students must have analyzed their respective situations before arriving at their decisions. As each student strives for proficiency in the activities being carried on, self-appraisal is constantly necessary. It will be exercised under the *purposing* procedure for the student will have a genuine interest in his own development. Practice in self-direction is apparent when one notices that the students have a part in organizing their procedures. As various factors arise, a *purposing* teacher encourages self-direction rather than assuming directive activities himself.

Opportunity for self-control, self-appraisal and self-direction upon the part of students is negligible in the *compulsion* and *teacher preparation* type procedures, and appears in a somewhat repressed form in the *motivation* type.

From the description of the *purposing* procedure, it is evident that co-operation is exercised. The teacher and students plan out their work together and there is cooperation among the students in carrying out the various activities. Facts and skills, otherwise designated as primary learnings, are effectively taught by the *purposing* type teacher. The subject material means much more to the student when taught by a *purposing* teacher because the student realizes his own rela-

tion to the program of study for he has had a part in planning it.

Because of the nature of the procedure, the student will find himself making contact with material other than the regular course of study which has been planned. These additional relationships have been termed "associative learnings." The *purposing* procedure is rich in opportunity for developing primary learnings, associative learnings and those learnings coming through self-control, self-appraisal, self-direction, and co-operation. These terms are those used by William H. Kilpatrick.

The vocational agriculture teacher should think in broad terms concerning his teaching activities. He is not dealing with facts and fact-learners alone, but with the student as a developing personality which must find expression. Distortion follows in the wake of a gross disregard of the growth toward maturity achieved through the satisfactions which result from normal goal-seeking. A farmer expresses his individuality by farming; therefore, the teacher must deal with the complete individual in the total educative process. The *purposing* procedure lends itself to this balanced development which is so desirable. □

Use Demonstrations—

(Continued from Page 68)

The teaching procedure or presentation of the demonstration itself falls into logical steps. One logical system for presenting a demonstration on the above problem is outlined below:

1. Preparation of the group or introduction: The demonstration procedure is rather informal. It is therefore necessary for the teacher to obtain attention of the group.
 - a. The teacher should point out the importance of the practice and its relation to the individuals concerned.
 - b. The teacher should ask pertinent questions designed to develop interest in the skill.
2. Perform the demonstration:
 - a. Perform the demonstration slowly and accurately, step by step.
 - b. Ask questions about each step as the demonstration proceeds.
 - c. Give students the opportunity to ask questions.
 - d. Mention precautions and continually ask the students if there is a better way to perform the steps.
3. Allow all students the opportunity to practice the skill until they are as proficient as is possible for the time allowed.

In conclusion, it should be said that operative skill should be taught carefully and thoroughly, aiming at maximum proficiency. I thoroughly believe that the extent to which we succeed in this important phase of vocational agriculture will depend to no small extent upon the diligence of teachers of vocational agriculture in realizing the importance of, planning for, and carrying out good demonstrations. □

Supervision Improves—

(Continued from Page 61)

useful technique when requested by the teacher.

12. Free teachers to visit other departments in order to observe the teaching-learning process and check the materials of instruction.

13. Obtain and disseminate free professional and technical information in order to conserve the time and energy of the busy staff.

14. Assist teachers in locating and obtaining appropriate teaching aids.

15. Encourage teachers to continue their professional education, either through organized course work or other forms of activity. Ambitious teachers are usually the most successful teachers.

All of us, in the field of vocational agriculture, will agree there is no royal road to effective teaching and learning. The progress achieved during the past thirty-five years emerged because of the cooperative efforts of supervisors and teachers. We must continue to share our experiences, research, new departures, and creative suggestions so the student in vocational agriculture may profit from the most effective teaching-learning process. □

Magazines Provide—

(Continued from Page 63)

football idea described in one of the teaching guides for use with magazine article in the January, 1953, issue of *Successful Farming*. The idea is to draw a football field on the blackboard, select two captains and let each select a team. Each team will read an assigned article (the article assigned should never be out of line with that of the job being studied) and prepare questions to be asked of the other team. Each side, offensive and defensive, will ask questions of the other. A set of rules and regulations can be set-up by the teacher governing the questioning. The whole idea is to get better reading, arouse interest and create some fun while the lesson progresses. Why not have fun while teaching if the pupils learn at the same time? □

Education is a companion which no misfortune can decrease, no crime destroy, no enemy alienate, no despotism enslave; at home a friend, abroad an introduction, in solitude a solace, in society an ornament. It chastens vice, guides virtue, and gives grace and government to genius. Education may cost financial sacrifice and mental pain, but in both money and life values it will repay every cost one hundred fold.

—Author unknown

Theme for October—

"Visual and Audio Aids in Teaching"

Procedure in Planning—

(Continued from Page 67)

All of this is worked out by the mother, father, the three boys, and the teacher of agriculture.

The Boy's Farming Program

Decide on the farming program the boy, probably, should have each year, which will:

- A. Give him good training in agriculture
- B. Make it possible for him to begin and progress toward becoming established in farming
- C. Push toward improving the over-all operation of the farm, to:
 1. Increase the size of farm business
 2. Make it a more efficient farm unit
 3. Make it more productive in all crops
 4. Increase the livestock and the production per animal
 5. Conserve and improve the soil
 6. Improve the stock-water supply, buildings, and fences

The boy should have tobacco as a cash crop and dairying as his major livestock enterprise, with feed crops of hay and pasture for his dairy animals. During his freshman year in school, "R. V." started his tobacco and livestock program, and made arrangements with his father to clear up some pasture land for hay and pasture for his two dairy heifers.

A planned expansion of his farming for the next four years is developed by the boy and the teacher. Each of the improvement projects is blocked out in the same year in which it is dealt with in the course of study.

By working carefully through the following three steps, the teacher is in a good position to give intelligent guidance to this boy in selecting his farming program each year in vocational agriculture:

1. *Becoming thoroughly familiar with the boy's home-farm situation*
2. *Deciding on the pattern of farming that should be on the farm*
3. *Deciding on the farming program the boy, probably, should have each year in agriculture*

It is the business of a teacher to help the learners have the level of aspiration they should have—the goals they should have. Teachers of agriculture should develop worthwhile wants and goals in their students. Once the boy has as his goal the farming programs for the next few years, he is ready to go to work. Through the guidance and help of his teacher and the cooperation and understanding of his parents, this boy is very likely to have at least this farming program each year and perhaps even a better one.

This program should enable the teacher to do two things thoroughly:

1. Teach the boy many improved practices and much good agriculture, which will train him for proficiency in farming
2. Make it possible for the boy to get started in farming and to make definite progress in becoming established in farming. □

A student-teacher learns to - -

Devote time to personality problems

GEORGE C. POPJOY, Student Teacher, Colorado A. & M. College



George C. Popjoy

HAVING completed my student teaching, a question that I often asked myself is—what should be the role of the Vo-Ag teacher in dealing with students who have personality problems? I believe that the Vo-Ag teacher should devote some time

and effort to these students and use his teaching devices to their fullest advantage to help them to graduate from high school as fairly mature individuals.

The Vo-Ag instructor has his share of the mal-adjusted pupils. But when you take a little time to counsel with these students and get to the basis of their problems, most of them are capable individuals who are in need of proper guidance and understanding.

I returned from student teaching believing that it is equally as important to train students to be good citizens as to be good farmers. If we train or condition a student so that he will become emotionally sound, his chances of becoming a good citizen are greatly increased.

Next to individual counseling and guidance, perhaps the outstanding device the Vo-Ag instructor has to use is his FFA Chapter. Here responsibilities can be distributed and self confidence developed among all students. The instructor, as the FFA sponsor and advisor, should do all that is possible to see that everyone participates and plays a part in the Chapter.

Supervised farming and farm mechanics are other outstanding devices that can be used. With a careful integration of problem-students into these activities many latent qualities in students may be developed and many life-long emotional disorders may be avoided. How to use these devices will depend upon the student and the teacher's skillfulness. Misguided attempts to use them may increase the problem.

The farm visit can be used to great advantage. Understanding of the home situation can be obtained and cooperation of the parents often can be enlisted. In most cases the Vo-Ag instructor leaves the farm with a deeper understanding of the boy's problems and is better able to work with him in the school.

The amount of time and effort a teacher can devote to an individual student will be limited. The important thing is to recognize these problem cases in the earlier grades and to give them assistance along the path through school. Correcting a complex or emotional disorder is a hard process for the student and requires a long period of time.

After listening to the views of a

number of individuals who feel that their high school training was inadequate in preparing them for life, I returned from student teaching thoroughly convinced that the Vo-Ag instructor should adjust his teaching situation so as to develop his students into well-rounded individuals. □

Research In Veterans' Education

E. R. HOSKINS, Teacher Education
Cornell University

AMONG THE MORE than 1600 studies in the field of Agricultural Education made since 1917 in answer to a "felt need" for studying our own business—the business and processes of education, occasionally there have been joint or group efforts to complete studies, nation-wide in scope and importance. One such effort resulted in the completion of the study to determine the effectiveness of the I. O. F. Training Program—the greatest experiment in organized youth and adult education that we have undertaken in thirty-five years.

The results of this study have been published as A. V. A. Research Bulletin No. 5, "Education of Veterans in Farming." Snap judgments of idle rumors regarding a minority group of farm veterans, who did not succeed, are no longer in order. The majority, who enrolled for the I. O. F. Training Program, succeeded far beyond our expectations. Their success has been a credit to Vocational Education in Agriculture; to the Veterans' Administration; to the local bankers who financed them; to themselves and families; and to the communities that accepted them.

This experiment in education reveals the truth as shown by careful research on a nation-wide basis. We need only to "look at the record" which is available as a text and well-illustrated story of progressive establishment in farming and home and community life. Our returning veterans have demonstrated the value of effective and timely vocational training; the wise use of capital in becoming established as self-proprietors at a relatively early age in life; the importance of thrift, hard work and good management in climbing the "agricultural ladder"; and the acceptance of the American tradition in establishing family-sized farms where the farm and the home are operated as a well-integrated unit.

A. V. A. Research Bulletin No. 5 can be purchased in single copies or in small lots at a greatly reduced price. Several copies should be in every department of Vocational Agriculture in the United States for use during the fall and winter months of 1953. This publication may serve as a text in both Farm Management and Rural Sociology for advanced classes in high school and for youth and adult groups of farmers. □

Pictures of the month...

A contest open to all teachers
of Vocational Agriculture
and farm veterans

"DEMONSTRATION OF DEHORNING WITH ELECTRIC DEHORNER"

Warren Duncan,
Lawrenceburg, Kentucky
Camera: 4" x 5" Busch Pressman
Film: Superpanchro Press, Type B
Exposure: 1/1000 sec. at F22—
Electronic Flash

FIRST PLACE ⇨



"MY FUTURE"

John H. Klipstein, Wausau, Wisconsin
Camera: Speed Graphic 4" x 5"
Exposure:
Lens Opening F-22, one press 25
Shutter Speed 1/00, for fill in ⇨

"LEARNING NEW SKILLS—BELLY METHOD OF CASTRATING"

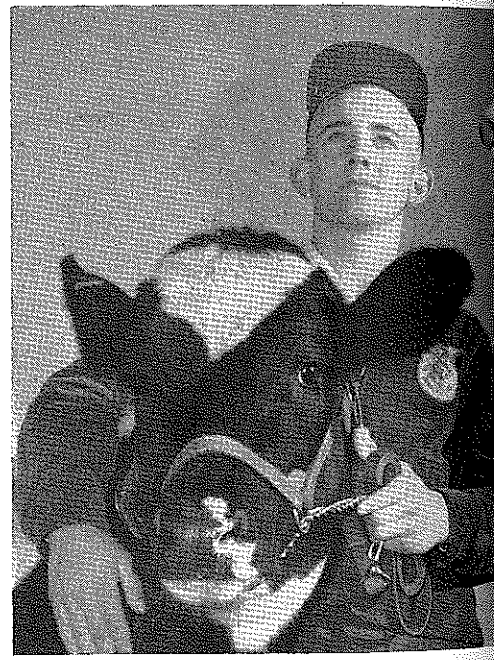
Gerald VanSingel, Hudsonville, Mich.
Camera: Ciroflex
Exposure: F-11 at 1/50 of a second
⇨

"TERRACE LAYOUT"

H. W. Welton, Kearney, Nebraska
Camera: Kodak No. 1, Diomatic
Film: Ansco Plenachrome 620
Exposure: F-1 at 1/50 second ⇨

"HORSEPLAY"

H. W. Welton, Kearney, Nebraska
Camera: Kodak No. 1 Diomatic
Film: Ansco Plenachrome 620
Exposure: F-11 at 1/100 sec.
⇨

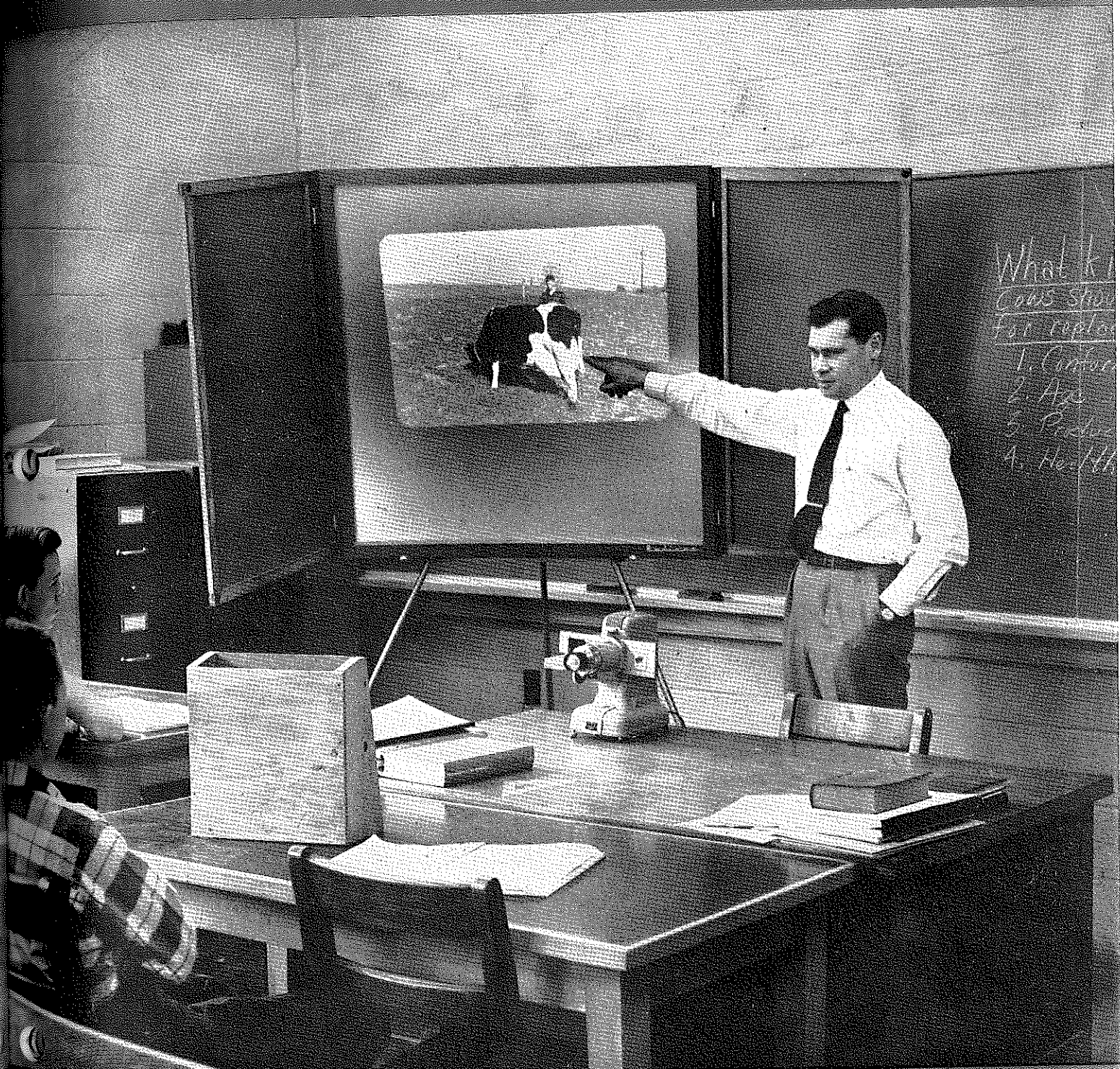


The AGRICULTURAL EDUCATION Magazine

VOLUME 26

OCTOBER, 1953

NUMBER 4



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Featuring
Visual and Audio Aids in Teaching

