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THEME: Achieving Quality Classroom Instruction

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Table of Contents

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Articles and photographs should be submitted to the Editor, Regional Editors, or Special Editors. Items to be considered for publication should be submitted at least 90 days prior to the date of issue intended for the article or photograph. All submissions will be acknowledged by the Editor. No items are returned unless accompanied by a written request. Articles should be typed, double-spaced, and include information about the author(s). Two copies of articles should be submitted. A recent photograph should accompany an article unless one is on file with the Editor.

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EDITOR'S PAGE

Achieving Quality Classroom Instruction

LARRY E. MILLER, EDITOR
(The Editor is a Professor in the Department of Agricultural Education at The Ohio State University.)

The theme of this issue marks the beginning of a series to re-emphasize the importance of maintaining programs of high quality. Declining enrollments, reduced funding and criticisms from several fronts send many supporters scurrying for evidence and things to justify our program. The best armor-coating we can provide to our program, to protect it from the elements chipping away at it, is to have programs of high quality. The justification for the program in vocational agriculture is sound as long as the programs at the local level are meeting the needs of students and the agri-industry through programs of high quality. If programs are doing the job well, then we have little to fear.

The theme of this particular issue focuses upon the heart of the program. The classroom provides the location for the principle reason teachers exist. To have programs of high quality, effective classroom instruction must occur. The evaluation of our overall program quality begins here. Energies exerted in extracurricular and intra-curricular activities can go unnoticed if this component of our program is found lacking. Every person that carries the prestigious title of "teacher" will have earned it first and foremost in the classroom.

High quality instruction in the classroom places high demands upon the teacher. The difference between a poor and a good teacher is often the willingness to spend that little extra time to make sure that the lesson is carefully prepared. The excellent teacher carries to class all those extra things that help students learn. The things are not always animate things, but things like clarity, enthusiasm and caring. Enthusiasm is infectious, spread it! Learn all you can to improve your teaching. As the old sage says, "teach students not the subject" and join those that have stepped up to the rung of excellence.

This issue and theme brings a new Editor to THE MAGAZINE. Your Editor is concerned about following the fine tradition of service that has been provided by past Editors and at the same time being daring enough to seek new frontiers that will better enable THE MAGAZINE to serve as the voice of the profession. How can THE MAGAZINE better serve your needs? Feel free to contact your Editor and express your beliefs and needs. I look forward to serving as Editor in order that together we might continue to improve the total profession. THE MAGAZINE needs your input if it is to provide a means of sharing professional concerns and of improving ourselves professionally.

New Editorial Staff

Regional Editors

Four new Regional Editors have agreed to serve THE AGRICULTURAL EDUCATION MAGAZINE. Their terms will run concurrently with that of the Editor and will end on December 31, 1985.

The new Regional Editor for the North Atlantic Region is Elmer Cooper of the University of Maryland. He has been active as a teacher of vocational agriculture, state supervisor and now as a teacher educator.

The Southern Region will be served by Larry Arrington from the University of Florida. Larry has been a teacher of vocational agriculture and is currently in teacher education in Gainesville.

Joe Townsend from the Department of Agriculture at Illinois State University will serve the Central Region. He has been a teacher of vocational agriculture in Texas and Iowa.

The new Regional Editor for the Pacific Region is John Mundt, director of vocational agriculture in Idaho. John is widely known for his past participation in the National Vocational Agriculture Teachers Association.

Special Editors

Three Special Editors have consented to serve the profession as Book Review Editor, Teaching Tips Editor and Picture Editor.

The new Book Review Editor for THE AGRICULTURAL EDUCATION MAGAZINE is Lonell Moeller. Lon is currently an Assistant Professor of Agricultural Education at South Dakota State University.

The Teaching Tips Editor will be Lowell Hedges from The Ohio State University. Lowell has been a teacher of vocational agriculture, school administrator and teacher educator. He has also been involved in international agricultural education.

Roger Roediger of the Ohio Curriculum Materials Service will serve as Picture Editor. He has an extensive interest in photography and in printing illustrated materials and will carry considerable expertise to the position.

The Cover

Active participation by students in the classroom promotes student learning. (Photograph courtesy of Dr. Gilbert Guiler, The Ohio State University)

THEME

Quality Classroom Instruction — A Must For Vocational Agriculture

Achieving quality instruction in the agricultural classroom is critical in this age of accountability. Currently, there is a focus on the basics in education. In some school districts, evaluations for program continuance are being initiated. We, in agricultural education, must be sure we are achieving quality in all aspects of our program.

By Bob R. Stewart
Editor's Note: Dr. Stewart is Professor, Agricultural Education Program, University of Missouri, Columbia, Missouri 65211.

Teachers Make It Happen

The teacher of vocational agriculture has a tradition of effective resources and methods to use in the classroom. However, the teacher also has many demands for time and may not always teach as effectively as they know how. The outcomes of quality instruction must focus on what the student has learned. Now is the time to assess those methods which serve us well and to implement new procedures to improve the learning environment for our students.

The effective teacher of vocational agriculture draws upon many resources. Furthermore, those seeking to improve their effectiveness must also consider teaching within the context of the classroom environment. The articles on the theme, "Achieving Quality Classroom Instruction," will examine the relationship between principles of learning, the problem solving approach to teaching, the evaluation of teaching within the context of the learning environment of the classroom, the utilization of local resources to supplement instruction, the use of competency based instruction, and the role of emerging technology in the agricultural classroom.

The teacher is the critical catalyst in quality instruction. Planning, assessing student needs, selecting content, creating a positive atmosphere, utilizing appropriate methodology, maintaining student control, and utilizing resources are all parts of the process. The list could be expanded. There have been many articles written on effective teaching. An informal review of 11 recent issue of the Journal of the American Association of Teacher Educators in Agriculture revealed that eight of the 64 articles were somewhat related to effective teaching. In the Agricultural Education Magazine, five of 36 issues focused on the instructional aspect of teacher effectiveness.

Although there has been a great deal written about the effective teacher, there is not an identifiable set of characteristics that will fit all persons. However, there is much agreement that the effective teacher is interested in students, carefully selects methods appropriate to the subject matter and background of the students, and is knowledgeable in the implication and relationship of various learning theories to instruction within the classroom.

Using Learning Principles

An examination of the principles of learning as related to the problem solving procedure would indicate that many desirable aspects of learning are incorporated when the teacher skillfully executes the problem approach to teaching and learning. However, there are those who are concerned about the use of the problem solving approach. They might suggest that "we cannot cover enough subject matter" or that "it takes too long to develop problems with students." In my estimation, these people are approaching education with the theory that "you unscrew the head, pour in the information for 40 minutes, and screw it back on." The emphasis is on how much information the teacher covered and not on how much learning takes place on the part of students. Those concerned with teaching an approach to learning, an approach to using information, a way to help the student become proficient in terms of analyzing data, and an approach that draws upon the scientific process will do well to examine the problem solving approach to teaching.

Shifting Demographics

The needs of and opportunities for agricultural students have continued to change. There is a continual need for students to reassess the appropriateness of various occupations. They are examining their association with agriculture in the context of the attitudes of their peers and their perceived importance of the food and fiber industry and the services connected with this industry in our country. In a typical class, ½ to ⅔ of our students will be seeking and obtaining employment after graduation from high school in areas other than production. In a regional survey in Missouri, we found that ⅓ of the students work in production, ⅓ work in related agriculture, and ⅓ work in areas not related to agriculture. Therefore, a strictly production oriented curriculum, except as it supplements the other areas of agriculture, is preparing only ⅓ of our students for gainful employment. This suggests that we must adjust programs and use business examples if our instruction is to be most meaningful for our students.

If the student population does not increase so that we can have more specialized offerings, then it means that we must change the delivery system within the classroom by using different approaches. This suggests that we should have students in some advanced classes studying different subject matter. We should be using small group and individual study modules with small seminar or recitation activities to provide the group involvement important for motivation and sharing among students. This suggests that the teacher must promote more independence on the part of the students and must assume even a greater role as a manager of instruction rather than the guiding force of a group learning process. Coupled with the varying abilities of students in reading and mathematics, the need to adjust methods of instruction provides indeed another challenge for the teacher of vocational agriculture.

Summary

The effective teacher will evaluate methods and adjust procedures to achieve quality classroom instruction. Careful judgement will be required to retain those procedures from our tradition which provide a positive learning environment and at the same time modify and utilize new resources to provide for the most effective student learning.

Remember, if our students have not learned so that their behavior is changed in a positive way and so that they can apply the outcomes of their classroom instruction, then we may have become very well paid babysitters. This our program cannot survive. Quality classroom instruction is a must!

THEME

Quality Instruction — Hope For The Future

Do we teach as well as we know how? Could American agriculture get along without programs in vocational agriculture? Could your community get along without your program? Would you want parents and students to vote on whether or not to retain your program in Vocational Agriculture? Drake (1982) suggested that agricultural education will continue in public schools only to the degree that it appears cost effective and socially essential to the taxpayers. Consequently, the development of agricultural education hinges largely on how taxpayers perceive the effectiveness of teachers. Who influences taxpayers in a community? Newspapers, students, parents, school counselors and administrators all develop some type of opinion and attitude toward a vocational agriculture program. Could a local teacher's effectiveness, as perceived by this group, form the basis for community opinion? What might be done to measure teacher effectiveness?

By Roland L. Peterson
Editor's Note: Dr. Peterson is Associate Professor, Division of Agricultural Education, University of Minnesota, St. Paul, Minnesota 55108.

Results of Research

Considerable research has been conducted on teacher effectiveness and numerous approaches have been studied. Peterson and Wahlberg (1979) in a review of teacher effectiveness research indicated that teacher behavior seems to be a criterion that is measurable and gives a clue to instructional effectiveness. In research completed on teachers of special needs students, one characteristic teacher behavior that has been verified is the learning environment of the effective teachers' classroom. Effective teachers tend to be more orderly, psychologically supportive (more praise, positive motivation) and maintain the positive situation with little effort. Another effective teacher behavior involves the use of student time. Research revealed that effective teachers spend more time in academic activities in large group situations and less time in small group and independent work. A third finding was that the method of instruction effective teachers used was low level questioning. Could this mean these teachers were "tuned-in" to student needs and were knowledgeable about skills and ability levels of their students? Finally, it was shown that effective teachers supervise their students more closely than ineffective ones.

In summarizing research studies on teacher effectiveness Rosenshine (1971) found the following patterns of teacher behavior distinguish between effective and ineffective teaching:

A. Clarity (of the teacher's presentation)
Effective teachers provide students with feedback, teach things in a related and step-by-step manner, orient and prepare students for what is to be taught, provide students with standards and rules, use a variety of teaching materials, repeat and stress directions and difficult points, demonstrate, provide practice (supervised practice is a proven theory of learning), adjust their teaching to the learners, provide illustrations and examples, communicate so that students can understand and cause students to organize materials in a meaningful way.

B. Variability
Effective teachers use variety in the level of instructional materials, procedures, and activities. There is also variability in the levels of classroom conversation used by the teacher.

C. Enthusiasm
Effective teachers exhibit vigor, power, interest and excitement. Consequently, the level of involvement of teachers with students reflects the effectivenss of teachers.

D. Task-oriented achievement and/or businesslike behavior.

(Continued on Page 6)

Quality Instruction — Hope For The Future

(Continued from Page 5)

Effective teachers encourage students to work hard and instill a desire to want to learn.

E. Student opportunity to learn criterion related material.

Effective teachers teach students content on which they will be tested. Consequently, strong positive relationships exist when students realize that the subject matter taught will be the basis for testing.

Applying These Findings

Withall (1982) suggested that students need to be active in the learning process. They must be allowed to choose some of their own goals. He suggested that students need to glean personal meaning from their readings, and that learning is organized around student needs, not around subject matter. He stated that "My behavior addresses my needs!" Finally, he pointed out that teachers' actions speak more loudly than their words. When vocational agriculture teachers teach, a number of questions need to be asked if the aim is quality teaching. These questions may be: What do students observe and experience from their teachers? Would the program and experiences students obtain result in a community actually "fighting" to keep their vocational agriculture program in the school?

Determining quality classroom instruction is a sensitive issue that appears to be extremely difficult to describe but readily detected (right or wrong) by students, parents, administrators, other teachers and outside observers. In a challenging address, Drake (1982) reminded agricultural educators that the agricultural education profession must realize vocational agriculture programs will remain in schools on the basis of quality teaching. Teacher education programs, state supervisory guidelines, professional associations, salaries and benefits are all of secondary significance when the teacher of vocational agriculture closes the door to the classroom or laboratory and interacts with students. What occurs in the situation is critical as to accomplishments that really make a difference. The quality of the situation results in whether or not vocational agriculture makes a difference in the lives of students.

Effects on Students

In evaluating quality teaching, Peterson and Wahlberg (1979) suggested that testing the amount of content mastered must be shown over a long period of time (years rather than a few days or weeks). Secondly, quality measures of student learning may require that the results from half of the class may need to be ignored. Could it be that quality vocational agriculture teaching does make a difference with some but not all of the students (if the same test is used)? Traditional testing and evaluation generally assumes that all students have the same abilities to learn. Copa and Forsberg (1980) found that 34 percent of the students enrolled in vocational agriculture programs were in the lower 25 percent of their class and 14 percent were in the upper 25 percent. Consequently, in evaluating instruction, consideration needs to be given to gains over a long period of time and tuned to the students' ability.

How to maintain an orderly and supportive classroom climate, how to increase the amount of time devoted to learning activities, and how to improve the quality of learning are all determined by what the teacher does with a wide range of students. Quality instruction rests with the quality of teachers and the future of vocational agriculture depends upon today's teachers.

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THEME

A Basis for Effective Instruction

The improvement of classroom instruction in vocational agriculture deserves careful evaluation in this age of accountability and concern about the basics in education. Instructional management occurs in the classroom and involves the interaction of the teacher and the students within the learning environment. The teacher of vocational agriculture is responsible for planning and executing the classroom instructional phase of the program. This planning and execution must be based on current knowledge in terms of the educational needs of students, the social context of the learning environment, and the role of the effective teacher within the classroom.

The Procedure

As we examine the role of the learner within the classroom, an appropriate first step is an examination of basic theories of learning as they relate to methods of teaching. For many years, learning theories have been able to describe ways in which students learn best. However, we often fail to relate these principles of learning to practices in the classroom. The problem solving approach to teaching vocational agriculture has been examined and evaluated over the years in terms of its effectiveness in meeting student learner needs. We would suggest that it is both appropriate and helpful to relate specific principles of learning with the steps of the problem solving procedure.

The problem solving procedure involves the basic steps of review, motivation, assignment, introduction of new information, discussion, conclusion, and evaluation. The related supporting principles of learning are:

REVIEW:

Use and Disuse implies that the more a fact, principle, etc., is used; the better it will be retained; therefore, review of the previous lesson is beneficial.

Practice infers that repetition, up to a point, enhances learning. This may be encouraged by review of previous information.

MOTIVATION:

Set is openly demonstrated by students. Their attitudes must be considered when determining the appropriate motivational technique. If the mental attitude or set of the student is not positive and open, then the teaching and learning process will be diminished.

Apperception may be used to relate what students already know to stimulate interest in a new topic. We perceive the new in terms of our past knowledge and experiences.

Motivation is an essential part of teaching. As a principle, it states that a learner must find meaning and relevancy in the lesson in order to be stimulated and, as a result, learn.

ASSIGNMENT:

Timing or discussing current happenings and problems as they relate to the lesson will enhance learning. Students are most interested in what is happening today and how it can focus on them.

Set also implies procedures and direction. Students learn more easily when given directions.

SUPERVISED STUDY:

Self Activity maintains that learning is an active process. Involvement by the learner should result in more retention.

Individual Differences, for example, may be approached by using different types of media during the supervised study period. Different students learn in different ways and at different rates.

DISCUSSION:

Contrast can be an effective method to stimulate discussion by comparing, for example, desirable and undesirable conformation of livestock.

Readiness, as a principle, should be applied to allow students to respond in the manner we, as teachers, have prepared them to react. To provide positive reinforcement in this manner will instill class discipline and a cooperative atmosphere.

Recency or using instances that have occurred in the near past are more easily remembered. Today's hog prices are more easily recalled and mean more when, for instance, developing a partial budget than using last year's prices. "how does today's lesson affect me now?" is very meaningful to the student.

SUMMARY/CONCLUSIONS:

Association of ideas, concepts, and principles can result in the highest level of learning. The response of a student to a similar situation would depend on the association and application of relationships that we, as teachers, have helped them to previously develop.

Satisfyingness can be reinforced by attaining competentency based objectives that are measurable. If students find application, learning has become more meaningful.

EVALUATION:

Reward for the student should be a teacher goal so as to encourage each student to achieve at their maximum potential.

These procedures become a part of the tools of the teacher as they work with students in the classroom. They promote the use of information by students to solve problems. These procedures can help students learn to think and to provide a basis for solving future problems.

BY TERRY HEIMAN AND NORMAN ROHRBACH

Editor's Note: Mr. Heiman is a supervisor of Agricultural Education, Missouri Department of Elementary and Secondary Education, Jefferson City, Missouri 65102; and Mr. Rohrbach is Instructor of Agricultural Education, University of Missouri, Columbia, Missouri 65211.

The Learning Environment

Many factors influence the classroom environment or the set which enhances or deters learning. The following factors need careful consideration in examining the learning environment:

Discipline — There must be appropriate discipline in the classroom for effective instruction to take place. Without discipline, positive learning is nearly impossible. Good discipline can be encouraged in a number of ways including teacher planning, successful motivation, and teacher policy but the important thing is that there is discipline.

Teacher Attitude — Does the teacher have the kind of attitude that makes students want to learn? In order to be successful in the classroom, teachers must set the example for students. We, as teachers, need to be cheerful, enthusiastic, and willing to take time for students and their problems. Teachers also need to be as fair as possible and, above all, to avoid the "teacher's pet" syndrome. In short, teachers need to let the students know they really care.

Knowledge of Subject Matter — Does the teacher possess an adequate command of the subject matter in the course? A teacher needs not only to know the subject matter, but be confident of it and able to use it. It is important also to admit not knowing an answer sometimes rather than just "avoiding the question" or "making up an answer."

Grooming and Appearance — It is important that a

(Continued on Page 8)

A Basis For Effective Instruction

(Continued from Page 7)

teacher dress and act professionally. Being neat and clean daily rubs off on students. The vocational agriculture teacher should be dressed as appropriately as other teachers in the system.

Use of Grammar and Mathematics — Does the teacher use good grammar in the classroom and encourage proper grammar on the part of the students? Good grammar and basic mathematical skills should be strengthened and certainly not weakened in the vocational agriculture classroom.

Supervised Study — Is supervised study used to the students' benefit? A time of supervised study including the use of student notebooks can be a real contribution to learning in the classroom if used correctly. The teacher has a responsibility to help students during this time and make sure that quick students are gainfully occupied.

Class Discussion — Is the entire class involved in the discussion of the lesson? The teacher has a responsibility to make sure all students are included in discussion of the problems. The discussion should serve to help solidify the concepts being taught and clarify ideas not found in the references.

Methods — Are appropriate classroom methods followed consistently in all classes? The use of successful teaching methods should be second nature to teachers of vocational agriculture. Students in each class should be aware of standard procedures and be able to learn within the daily classroom environment.

Summary

After reviewing the learning principles as they relate to problem solving and the factors influencing the learning environment, we have to evaluate the total structure in terms of effective instruction by asking the questions: What learning of value took place in my classroom today? Did the students learn what was intended? Was it the most important thing they could have learned? The students learn in our classrooms every day whether it is what we teach or something else. As teachers, we have a responsibility to establish a base for "effective instruction."

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THEME

Be A Teacher, Not A Teller

Teachers and teacher educators share one common concern — quality teaching. Although there are many textbooks to guide each of us in our teaching efforts, many of us trip into the pitfall of being a "teller" and not a "teacher."

This pitfall may seem strange because many believe that the two are the same. You may be puzzled, or even insulted because you believe you are a teacher; that you know what quality teaching is! To help clarify the point, one must answer the question: "What are the differences between a teacher and a teller?"

By Lowell E. Hedges

Editor's Note: Dr. Hedges is Assistant Professor, Department of Agricultural Education, The Ohio State University, Columbus, Ohio 43210.

The Teller

Let's look at this teacher we call a "teller." Basically, we could identify a "teller" as one who is a dispenser of facts and information. A teller is concerned about giving out facts, and getting them back on examinations. One would thus view the students as sponges whose responsibility is to "soak up" the knowledge and facts that the "teller" gives them. In this so-called method, the "teller" pours into the students the information needed to satisfy the examination. When test time comes, the student is supposed to give back to the teacher the same facts and information that the teacher poured in during class.

The "teller-teacher," by means of the examination, "squeezes" the information out of the "sponge," the student. The student is, unfortunately, unchanged in terms of needed skills, attitudes, and understandings. If anything, the student has learned to dislike the subject, school or both.

The Teacher

In contrast is the person we call the "teacher." A teacher is primarily concerned with bringing about relatively permanent desirable changes in the student's basic skills of thinking, reasoning, judgment, manipulative skills, creativeness, communication, attitudes, appreciations and understandings. This teacher is not so concerned about the student memorizing unrelated facts. Rather, the teacher uses facts and information to assist the student in the development of basic skills.

These Teachers Compared

A specific example of the differences between a "teller" and a "teacher" can be found in the way classes are conducted. For illustration purposes, let's start at the beginning of a class. The bell has rung. The students have come into the classroom. The "teller" surveys the classroom, and attention is drawn to the rear of the room where some students are visiting. "You, back there! Sit down and no talking! This lesson is very important so you'd better pay attention to what I'm going to tell you. If you don't shape up, I'll send you to the principal's office! Remember, too, that you're getting a test on it."

How do the student react? Some will quiet down. Some will begin to listen, and some will say to themselves, "I dare you to try to teach me something today." Others may weigh the trip to the office against the attention they would get from their peers.

Now that the teacher has their attention, what would a "teller" do? Talk, most likely. And the interest approach to the lesson would probably be: "Today we're going to talk about . . ." The teller by that means of communication would thus make the lesson subject-centered, or teacher-centered, rather than the desirable student-centered lesson.

Let's take the same scene, the same students, and the need to bring the class to attention. What is a realistic way? What is the "teacher's" way?

For one thing, the teacher would motivate, not intimidate. And how would a teacher get the students to want to learn what the teacher wants to teach?

The teacher would meet student needs. Basic human (and student) needs are security, love, approval, having new experiences and achievements, and reasonable freedom from feelings of guilt. An effective teacher will understand and appeal to these needs as the lesson is planned and taught.

Rather than use threats and sarcasm to get the attention of the students at the beginning of class, the teacher will first attempt to answer the students' usually unspoken, but nevertheless, thought question, "Why should I learn what you're going to try to teach me today?" This will usually be accomplished by helping the student understand how the lesson objectives, if reached, will help the student obtain something wanted, or else remove an unwanted condition. The teacher uses an interest approach that gets the students' attention. The approach usually appeals to one or more of the students' needs. An interest approach appealing to the need for security, for example, might involve the potential for profit if an improved practice, such as improved field drainage, is adopted. A "Cause-and-Effect" chain can be developed by the class to emphasize how improved field drainage increases profits from crops, thus increasing the financial security of the crop producer.

Aids and the Senses

Once the teacher has obtained the students' attention and interest, efforts will continued to be made throughout the lesson to sustain the students' interest. How is this done? One effective procedure is to use audio-visual aids. When the aids are employed, use is made of the five human senses: sight, hearing, touch, taste, and smell. The more senses that can be used, the more effective and lasting will be the interest created in the student for the lesson. For example, the "teacher," in a lesson on selecting shade trees for a home, may use a handout illustrating the basic tree shapes by line drawings. Next, slides may be used to identify and illustrate the various species of trees that fall into the various categories of shapes. Finally, the teacher may take the class on a field trip to view in live form the trees of each category that are suitable for the situation being studied. The students can not only see the shape of each tree, but can "experience" the trees through the other senses: hear the rustle of the Cottonwood trees, touch the seed balls of the Sycamore or the Buckeye trees, taste the fruit of the Persimmon tree or smell the Ginko's fruit.

In contrast, the "teller" may be satisfied with just using the line drawings to illustrate the various categories of tree shapes, and write on the chalkboard the names of selected trees within each category of shape. Unfortunately, the "teller" has used only one method of communication (one sense), that of words, words, words, all day long.

Philosophical Difference

Another difference between a "teacher" and a "teller" can be found in their teaching philosophies. A teacher's philosophy might include the belief that one should "teach a student a subject," while the teller might believe that one should "teach a subject to the student."

This difference in philosophy can be seen in the lesson topic. The teacher may title the lesson, "What landscape design principles should we use in beautifying the school building entrance?" Or, "What procedure should (Beth) follow in setting out her shrubs?" Using the problem-solving approach to planning and teaching the lessons helps create a student-centered learning environment. Lessons taught with this approach center around actual student problems or management decisions needing to be made by the students in their supervised occupational experience programs. What is taught (and learned) is of direct benefit or use to the student. The teacher has effectively answered the question, "Why should I learn what you are going to try to teach me today?" The teacher has also contributed to self-motivation of the students.

In contrast to the problem-solving approach to planning and teaching the lesson, the "teller" might entitle a lesson, "The basic design principles in landscaping a home." Or, "What are the basic landscape design principles?" Being able to list the names of the design principles doesn't necessarily mean that the student can apply the principles in creating a landscape design for a specific situation. The teller omits the student application of skills, learned concepts and principles.

A study of the lesson plans of the two types of teachers will probably reveal another major difference. The "teacher's" lesson plan will attempt to answer four questions: "Where are we now (in our skill proficiency, our knowledge, our understandings)?" "Where are we going (what are our objectives in terms of behavior changes in thinking, reasoning, judgment, manipulative skills, creativeness, communication, attitudes, appreciations and understanding)?" "What steps do we need to take to get there (lesson presentation, application by students of skills, attitudes, and understandings)?" And last but not least, "How do we know when we've arrived (the evaluation of student learning to determine if the lesson objectives have been reached)?"

A close scrutiny of the "teller's" lesson plan will prob-

(Continued on Page 10)

Be A Teacher, Not A Teller

(Continued from Page 9)

ably reveal the use of the technique of the "3-R's": Read (the assigned chapter in the book); Regurgitate (let's review what we just read); 'Rite (answer the even-numbered questions at the end of the chapter.) The lesson planning efforts result in a teacher and/or subject centered lesson, ignoring the human and vocational needs of the students.

If the teacher's goal is to bring about relatively permanent desirable changes in student behavior — changes in thinking, reasoning, judgment, manipulative skills, creativeness, communication, attitudes, appreciations and understanding — then that person should accept the challenge: "Be a teacher, not a teller."

THEME

Quality Instruction Begins With The Teacher

By Jerry L. Peters and Robert A. Martin

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The job of the vocational agriculture teacher is complex and the teacher's actions reflect upon the philosophy of what he or she believes the vocational agriculture teacher's role to be. Working with students and parents in the classroom and on the home farm or agribusiness, with in-school and out-of-school groups, with curricular and extracurricular activities, and with adolescents and adults makes the vocational agriculture teacher's task uniquely interesting and challenging. With so many tasks and roles to fulfill as teachers of vocational agriculture, we may often lose sight of our primary mission and fail to provide our students with high quality instruction.

Therefore, it would be of benefit for each of us to occasionally take the time from our busy schedule to reflect upon the quality of the instruction we are providing our students. In order to do this, we should ask, "What is quality instruction?", "What teaching behaviors are associated with quality instruction?", and "How do we recognize if our teaching is of high quality?"

What Is Quality Instruction?

Quality may be defined as a "degree of excellence". Quality instruction may therefore be understood to be excellence, or rather effectiveness, in bringing about student learning and satisfaction. Keep in mind that although the teacher has the responsibility of bringing about student learning, that does not make the responsibility any less significant on the part of the student. Successful learning in the education process is the responsibility of both the teacher and the learner.

We should all be aware that there is no one best method of teaching. Each teacher starts with his or her own individual personality and must build upon it in developing an effective teaching style. At the same time, students vary greatly in their abilities to learn and in the rates at which they learn, just as all subject matter requires different teaching strategies and techniques. High quality instruction takes all these variables into consideration from the initial planning stage. It is important for teachers to remember that one must plan for quality instruction. It does not just happen.

What Teaching Behaviors Are Associated With Quality Instruction?

Student achievement and quality instruction are directly connected in the learning process. Therefore, when attempting to provide quality instruction, it is of benefit to make use of those teaching behaviors believed to be associated with positive student achievement.

Rosenshine and Furst[1] found five teaching behaviors which are most often positively related to student achievement.

The first of the behaviors is that of clarity. Students tend to learn more when what the teacher says is "clear" to them. Being "clear" implies that the teacher shares with the student the goals and objectives of the lesson and overall unit. The agenda or "road map" is laid out for all to see where they are headed. In this way, the goals become the student's goals. Additionally, a teacher may achieve this clarity by orienting students to the subject; by repeating and stressing the important and difficult points, as well as the directions; by demonstrating skills and providing illustrations and examples when possible; by adjusting the teaching to the student's abilities; by relating the material in a step-by-step manner; by allowing for practice in problem solving and skill mastery; by providing standards for the students; by communicating in an understandable manner; by providing feedback to the students; and by having the students organize the materials they are provided in a meaningful way.

The second of the teaching behaviors is that of variability. A teacher should use a variety of materials, methods, learning activities, levels of classroom discourse and media. Using a variety of strategies helps the students and teacher to remain interested in the topic.

The third of the teaching behaviors most often having positive effects on student achievement is enthusiasm. The teacher develops a quality learning environment by being energetic, presenting the material and skills with appropriate gestures and eye contact, showing interest in the subject matter through voice inflection, being energetic not only about the subject, skill or problem, but about students and oneself as well. In this manner, the teacher may enthuse and motivate students.

The fourth of the teaching behaviors is that of presenting a goal-oriented, task-oriented, achievement-oriented and/or business-like behavior. Let students know where they stand in the teaching-learning process. The students need to realize that the teacher means business. Goals and objectives must be shared so that there is a feeling of group ownership of goals as well as achievements.

The fifth and final of the teaching behaviors most often having positive effects on student achievement is that of providing students the opportunity to learn criterion material. Tell students what is expected of them and then evaluate them on the material process, product, or skill. Don't allow students to worry about "picky" items they will be expected to know for the test. Let the students know what is important.

How Do We Recognize Quality Instruction?

You may find yourself saying, "So I'll try thinking about these teaching behaviors, but how will I know if they are having any effect on my instruction?" The most obvious answer is to look to the students. One can judge quality instruction not so much by the process itself as by the outcome. If your students are pleased, if they have learned what you wanted them to and if you feel comfortable and enthusiastic about your efforts, by all means keep it up. Somehting good is happening. However, these indicators may not be enough. To understand the "something" that is happening or not happening, teachers should continuously evaluate their teaching by answering four basic questions which are built upon the above-mentioned teacher behaviors:

(1) Where are my students now in relation to the skill, knowledge, process to be learned?
(2) Where should my students be going? (objectives and goals)
(3) How can they get there? (student activities and teacher strategies)
(4) How will they know they have arrived? (evaluation and feedback)

These questions form the basis for quality instruction. Teachers must continually gauge the quality of their instruction.

It might be good for teachers to remember:

No printed word nor spoken plea
Can teach young minds what men (and women) should be,
Not all the books on all the shelves,
But what the teachers are themselves.
(Anonymous)

If a teacher has the desire to learn and make the effort to improve upon instructional quality, then it is likely to be reflected in student achievement.

Reference

[1]Barak Rosenshine and Norma Furst, "Research on Teacher Performance Criteria," in Research in Teacher Education: A Symposium, ed. B.O. Smith (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971): pp. 37-72.

BOOK REVIEW

The Commercial Greenhouse, by James W. Broodley. Albany, New York: Delmar Publishers, 1981, 568 pp., $12.95.

This is a comprehensive book, offering a wealth of information on general aspects of greenhouse production as well as the culture of individual crops. A section on the floriculture industry in general opens the text, discussing domestic production, competition from abroad, and opportunities for employment in the field. Though devoted to the production of flowers and some foliage, the sections on growing structures, media, and propagation are also relevant to other types of crops.

Broadly applicable is the section on environmental factors which affect plant growth. This includes practical chapters on the plant itself, light, temperature, and gases. A section on nutrition and watering is up-to-date, and does not shy away from discussing specific products or companies.

There is no chapter covering pest control, but the subject is well treated throughout the book. Devoting little space to support structures such as shade houses and cold facilities, the text sticks firmly to its title, and the crops normally grown in greenhouses.

Much of the book is dedicated to cultural practices for specific crops. One section covers those plants which are normally grown in containers, including flowering pot plants, bulbous species, tropical foliage plants and bedding plants.

Three chapters are devoted to cut flower crops. The book ends with chapters on harvest and storage methods, the wholesale flower business and retail outlets.

Student objectiyes are listed for each of the 31 chapters, and each chapter ends with a set of multiple choice questions which could be used for review, testing or discussion. A useful feature of the glossary is its division into nine parts, one for each section of the book. The vocabulary of the text is fairly advanced, aimed at experienced secondary students or those at the community college level. Too involved for a beginning course, this comprehensive text would prove useful for any student serious about greenhouse production of flower crops.

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THEME

Helping Students Become Independent Learners

By L.H. Newcomb
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Schools tend to force people to depend on teachers as the source of truth and knowledge. This message is conveyed to students by a number of practices which are used by teachers.

Forcing Student Dependence

When teachers "teach" by standing before the class and "telling" the students the facts (see Hedges' article), they are in essence telling the students that teachers are basic sources of knowledge. When students have questions and feel that the chief way to answer them is to ask the teacher, then the idea that they need to depend on teachers to get answers is further reinforced. If the teacher gives the answer to students' questions without promoting the use of other sources of information, then the concept that students need to depend on teachers for knowledge is further reinforced.

Making Students Independent

All of us know how quickly the information we "personally possess" is outdated. We know, too, that with the magnitude of the knowledge explosion we need to energetically search many reliable sources of information to keep current and solve problems as we encounter them. This reality must be shared with students.

As caring and helpful as we agriculture teachers are, still we cannot guide our students' learning very long. Quickly our time with them has ended, and we are no longer there for them as sources of knowledge.

Our job is to work hard to prepare them for the inevitable transition to the real world where they can neither rely on teachers or anyone else to readily nor gladly "give them" quick answers to their questions. We need to design ways to help our students become increasingly independent of us as their source of answers. Why? Life demands it. Students must rely on other standards and reliable sources of information once they are out of school.

In the process of helping students learn to rely on sources of knowledge which are more dependable and available than teachers, we also help them develop self-confidence and a greater sense of self-worth. In the final analysis, the extent to which we accomplish the goal of helping students become learners, who need not depend on teachers as the primary source of knowledge, is a valuable measure of our success as teachers.

Techniques to Use

The way we teach in the classroom and laboratory is what determines whether students are provided the environment, encouragement and practice needed to become increasingly independent. There are basic teaching techniques and strategies which can provide the skills to make students more independent.

Chief among these is supervised study, when it is properly planned and conducted. This means the teacher creates interest in the students to solve the problem at hand or answer the question which blocks their progress, study questions are assigned that will carefully guide the class' inquiry, students are provided appropriate resource materials, and a final discussion is conducted with the class to summarize what was learned from the supervised study and to develop conclusions.

Maybe the finest way to promote independent thinking and inquiry is to use experiments as teaching devices. When students wonder why or question the need for using an approved practice, they ought to be encouraged to compare practices. Before they jump into experimenting, they need to read and/or be exposed to classroom discussion that examines the content being used and forces the development of "best guesses" as to the probable outcome of the experiment and why they made the "guess" (hypothesis) they did.

No matter what teaching techniques are used, we as teachers need to be alert to the opportunities to have students call the extension agent, local dealers, elevators or others to seek out specific facts and recommendations that they need to know. By using a variety of the above ways to help students find the information they need, we will also help them "discover" that teachers are not the only nor even the best source of facts, information or knowledge.

This same basic strategy of helping students find answers without depending on the teacher also needs to be used in the laboratory. Too often, students run to the teacher for quick answers that are already in their notes. When this is the case, students ought to be instructed to check their notes, and if they still are not clear, come back and you'll help them. This same strategy of having them inquire into reliable sources of information to gain answers to their questions needs to be used to get students to rely on manuals and other references to get specific data.

Additionally, we need to display more pieces of work in the laboratory to which students can compare their work in order to gauge the need for further refinement without having to see the teacher. For example, one could have on display "A" welds, "B" welds, "C" welds, etc., as well as welds that were too hot or too cold or where the speed of travel was too fast or too slow. Students can compare their work to the samples as a self-check and diagnose problems with their work. This helps them begin to be their own evaluator which most people who are extremely successful have to be.

Summary

As we teach students agriculture, we can also teach them to learn from varied sources rather than allowing them to depend too heavily on teachers as their source of knowledge. By doing this, we will contribute far more to their chance for future success than if we allow them to graduate without knowledge of appropriate sources of information or practice in using these sources.

THEME

Microcomputers: A "Byte" Of The Action

By William G. Camp
Editor's Note: Dr. Camp is Assistant Professor of Agricultural Education at Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

Microcomputers are catching on like Hong Kong flu. But in the case of micros, it is better to catch the "bug" than to avoid it. Microcomputers have the potential to provide more help to the teacher than any teaching aid since the overhead projector.

According to the National Center for Educational Statistics, there were over 101,000 microcomputers in U.S. public schools as of the Spring of 1982. The literature predicts that the average high school will have 16 or more microcomputers by 1985. But, what does all that mean for you, as a vocational agriculture teacher?

Microcomputer Applications

There are three basic uses that we in agricultural education have for microcomputers in our program: (1) CAI, (2) CMI, and (3) agribusiness or farm management application.

The first two of these are common to all teachers. The last one is what makes agricultural education unique. Let's briefly look at CAI and CMI, then examine agribusiness or farm management applications more closely.

CAI stands for computer assisted instruction. This is an area where all teachers can use the microcomputer. Anything that can be written or drawn, can be programmed. As the computer revolution continues to expand, more and more curriculum materials will become available in the form of mass-produced microcomputer software. As a rule, teachers are not very good programmers and programmers are not very good teachers. In general, we will want to buy instructional (CAI) materials rather than trying to program it ourselves.

General reading materials, basic skills tutoring, drill and practice, instructional games, business simulations, and technical instructional materials are already available on the open market for the more common micros. The amount of instructional materials is growing daily. The larger vocational areas, such as business and office education, already have vast amounts of such materials. In agricultural education, we have less actual curriculum materials available, but this is rapidly changing.

One of the things vocational educators have talked about for years is individualizing instruction. There have been two problems with individualized instruction: students who won't or can't do it and teachers who can't or won't use it. Individualized instruction on the microcomputer actually works. Students like it and teachers can handle it. A well written CAI program is actually fun. One special education teacher told me that her students (EMR and LD) are tearing down her doors to get in, not out of, class since she got micros.

CMI, or computer managed instruction, is another area where all teachers can use the micro. In Virginia, as well as a number of other states, competency based or performance based curricula require student progress charts. Computers are ideal for maintaining individual and class records of all kinds. Busy work; such as keeping track of attendance, student scores, scoring tests, computing averages, and assigning grades; can be done faster and more accurately on the computer.

Time Savings

You might develop a file of test items. As you write a test, enter each item on the computer. When your item file is large enough, you can develop new tests by simply selecting the items you want and having the computer print them out.

All the micros have "word processing" programs that allow you to compose and change banquet programs, letters, handouts, instruction sheets, and many similar items easier and faster than by using the typewriter or the pencil. Letters to advisory council members, alumni members, young farmers, adult farmers, board members, and all those other things that must be done so often, can be developed and stored for reuse. There is no need to completely retype a letter or a handout just to change a date or a few words. Lesson plans placed on the computer can be up-

(Continued on Page 14)

Microcomputers: A "Byte" Of The Action

(Continued from Page 13)

dated with little effort each time they are used. Work schedules, expense records, inventories, FFA activities, state reports, deadlines, and almost any other records you can think of, can be computerized to your advantage.

CAI and CMI alone have the potential to both simplify your life and improve your teaching greatly. But, these are for all teachers. The math teacher, English teacher, business teacher, everybody can use these things. For your own sake and your students' sakes, you should be sure to gain access to the microcomputers in your school. Do not allow those micros to become the sole property of some other program or teacher. But, there is another, overwhelming reason why you, as the agriculture teacher in particular, should gain access to and learn to use microcomputers.

Technology in the Industry

Agribusiness and farm management applications of microcomputers are revolutionizing our industry. We are living through one of the most exciting ages of human kind. Microprocessor technology (including microcomputers) makes it possible to do things in agriculture that simply could not be done just a few years ago.

Farmers everywhere are buying and learning to use microcomputers. Farm records, budgets, inventories, tax decisions, livestock records, crop records — in short, anything that can be reduced to columns and rows — are already being computerized. Remote sensors, coupled with radio transmitters/receivers, and microcomputers, make it possible to automate irrigation systems, feeding systems, milking operations, harvesting/storing/drying operations, and countless other operations unique to the industry of agriculture.

Agriculture teachers should be teaching their farm management students, young farmer, and adult students how to select the appropriate computers and associated parts (hardware). They should be teaching how to select the appropriate business and farm programs (software). They should be teaching how to use those programs for records management, enterprise planning, decision making, and operational control.

For the horticulture teacher, similar arguments can be made. Greenhouse operators, nursery operators, garden center managers, wholesale growers, distributors, turf management specialists; in short, all kinds of small business owners or managers can simplify their lives and improve their operations by using currently available microcomputer hardware and software. By the same token, teachers in all the other areas of agricultural education can also make the same case for using micros in their programs.

We are training workers for the agricultural industry. That is the unique mission of agricultural education. As teachers of agriculture, we are training workers to enter, progress, and survive in the world of agriculture. Microcomputers are a fact of life in all aspects of agriculture. They are already here, in large numbers and with great potential. But, we haven't seen anything yet. Only the tip of the iceberg is showing now.

One microcomputer manufacturer predicts that 30 times as many microcomputers will be sold in the next 15 years as have been sold to date. Micros could well become more numerous than TV sets in the next few decades; and, what an impact that would be!

If agricultural education is to keep pace with these changes, we must move now and rapidly! State departments and teacher education programs can help provide direction and assistance. But, as usual, the teacher is the key to success in training students to use the micros in agriculture.

As agricultural educators, we owe it to ourselves, our students, and our profession to move forward with the rest of the world. We simply cannot afford to ignore the microcomputer. In fact, we need to provide leadership for its intelligent selection and use in agriculture.

If you are not already familiar with microcomputers, get started today. You are already late, but not too late. Find a microcomputer, sit down at it, get someone to help you or get a manual, and get started. If you are up to speed already, find a fellow vocational agriculture teacher who isn't and get him or her started. Try it! You'll like it. After all, microcomputers won't "byte" you.

BOOK REVIEW

AGRICULTURAL MATHEMATICS: PROBLEMS IN PRODUCTION, MANAGEMENT, MARKETING MECHANIZATION, AND ENVIRONMENTAL QUALITY, 2nd ed. by Roger Higgs, Charles Heidenreich, Tichard Loberger, Robert Cropp, and Milton Mitchell, Danville, Illinois: The Interstate Printers & Publishers, Inc., 1981, 297 pp., $6.95, Answer Book, $1.00.

This is an excellent text for agricultural students from high school through higher education. The easy to read print describes mathematical problems across many areas of agriculture. This text aids the instructor in the relatively new subject matter area as agricultural mathematics. For years, teachers have frequently assumed that agricultural students possessed competence in mathematics, only to find out that the vast majority of students did not know how to do the simplest problems that arise in the agricultural classroom and laboratory.

With the low cost of this textbook, this is a great educational tool. Many of the areas in this book are too advanced for the middle, or junior high agricultural courses, but it could be used in the high school. Instructors will find it useful in polishing their personal skills.

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THEME

Community Support For Quality Instruction

BY JOHN FRISCHIE
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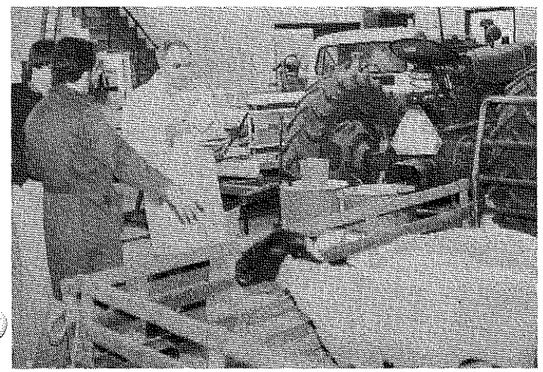
Much time and effort is spent discussing ways to inform the public about our vocational agriculture programs. It is very frustrating to have a newsworthy event occur in your program and not have anyone find out about it. Most of the time, publicity effort is spent on taking pictures and the who-what-when-where-why-and-how theory of journalism. While these activities are important, here are some ideas that have highlighted our instructional activities.

First of all, before any public relations can take place, there must be some activity worth reporting which grows out of a sound instructional program. Then if it is worth reporting, there are three groups that should be involved: members of the community, members of the staff and administration, and members of the student body and their parents.

Community Involvement

South Newton High School is a 400 student (9-12) school located in the geographic center of four Indiana townships. The South Newton vocational agriculture program includes production agriculture, an extensive mechanics program, three Young Farmer Chapters, an active FFA chapter, and adult class offerings. Many of our students have no farm background.

The program is housed in a new 10,000 square foot vocational agriculture building constructed in 1980. The original school and agriculture facility were built in 1966 with publicity and community support. There are three full-time vocational agriculture teachers. The FFA chapter is involved extensively in test plots and various farming activities. The chapter rents 44 acres of land in the school district from six different landlords. The FFA chapter owns its own farm equipment with the exception of harvesting equipment.



The superintendent participates in the judging contest held during National FFA Week.

Public awareness and community involvement in the instructional program have been important parts of the program's success. It became evident several years ago that articles in local weekly newspapers were not the total answer to the public relation needs of the program. The following ideas have been used to inform and involve members of the community with the program.

When information needs to go to the community, the local radio stations are sent press releases to be used at their convenience. The farm show directors are also contacted for phone interviews during their farm broadcasts. The teacher should be acquainted with the news directors so they can call the teacher or students when a special interview is needed. Also, the local papers are sent press releases prior to news deadlines. A trip to the newspaper office for an interview will often result in more prominent coverage in the weekly paper. If news coverage in a large daily paper is sought, it helps to become acquainted with the editor of the section dealing with the agriculture program. The newspaper reporters are invited to all activities that merit their attention. Articles and pictures prepared by the reporter of the paper always make publication. After reporters have become acquainted with our agriculture program, they will often call for news or special interviews when they are doing a feature story.

Methods of Informing The Public

Information is directed to, and help is solicited from, groups of people who have a special interest in the program. Ten years ago a mailing list on three by five cards was started by taking the mailing list of local fertilizer and chemical dealers who were involved with the program. To this list were added the names of other agribusinesspersons, Young Farmers, advisory committee members, and parents. Students were then asked to fill out cards for their neighbors who were not on the list. At each field day, guests are asked to register for door prizes given by the seed or chemical dealers. These cards are then sorted and added to the mailing list. Each time this group needs to be informed, a letter is sent using the high school bulk mailing

(Continued on Page 16)

Community Support For Quality Instruction

(Continued from Page 15)

permit. This allows the 300 plus people on the mailing list to be contacted for less than four cents per letter. This mailing list has been very effective. The list also provides an excellent source of names when selecting resource persons to assist with instruction in the secondary and adult classes.

In addition, information can be spread by word-of-mouth or a phone call. When the agriculture teachers are in local agribusinesses, they tell the people what is going on, giving them information regarding the success of a judging team or of a planned adult class program. Posters are also used to supplement the information. When there is parent contact in the community, efforts are made to compliment them on their child's accomplishment. Once an acquaintanceship has been established with people, it is easier to ask them for help on a project when it is needed.

Each year the department conducts chemical and variety yield test plots. These tests plots are an important instructional activity for the students as well as the community. Each year about 20 seed dealers, 15 chemical dealers, 5 fertilizer companies, and 300 area farmers as well as the students are involved. A local farmer donated a combine to harvest the seed corn variety plots and a fertilizer company donated an electronic weigh wagon. Seed corn representatives helped FFA members record the yield results.

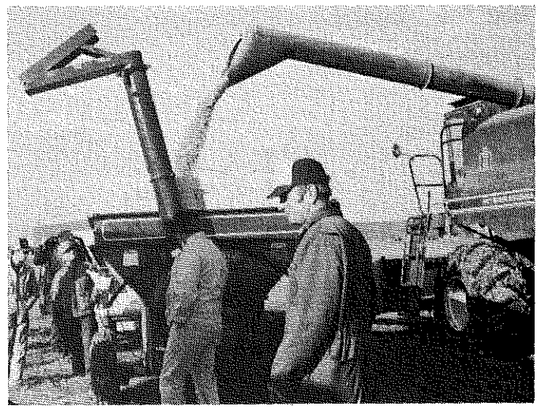
About 130 farmers attended a field day and pork chop dinner and the plot results were mailed to 300 area farmers and agribusinesspersons. "Follow through" on the activity is important. Because of positive past experiences, dealers know that the department will operate the plots in a professional manner and are willing to provide their support. In addition, the involvement of students in planning and conducting the trials as well as having contact with business persons and farmers in the community has proven to be an excellent educational experience.

Don't Forget The School Staff

A group that is often overlooked is the school staff and administration. Many times it is necessary for students to miss other teachers' classes when they are involved in vocational agriculture activities. How can the principal or English teacher be expected to support your program if they do not understand the importance of what is going on?

The principal, vice principal and superintendent have accompanied the National FFA Convention representatives to Kansas City as a second-car driver on several occasions. They have all enjoyed attending the state convention with us. When they are aware of what happens on a field trip, they are very supportive of future trips.

We ask various teachers to help coach our public speaking candidates or essay contestants. They are asked to serve as judges at district FFA contests. In appreciation for this help, our chapter invites all teachers to a breakfast each year during National FFA Week. This is a good time for a FFA slide show describing the chapter's activities. Students who are going to miss school for a vocational



Collecting data from test plots is an important instructional activity for the South Newton Vocational Agriculture Department.

agriculture activity are required to get each of their teachers to sign a form explaining what they will be doing while they are absent from class.

To stimulate interest, the vocational agriculture students conduct a livestock judging contest for the entire school. There were groups of sheep, hogs, and cattle. Winners were selected from junior high students, high school students, and staff groups. Winners were treated to free pizzas at a local restaurant. This is a good FFA Week activity and lets teachers and students see what the livestock team learns.

South Newton has an outstanding school newspaper and its reporters are invited to attend field trips and various activities. This year they attended the Farm Progress Show and the soil judging contest with the chapter. When they see what is going on, they are usually impressed and return for more interviews.

Parents and Students

Do not forget the kids! Make sure their parents are informed about all aspects of the program prior to the students' involvement in various activities. Stress how the various activities support and grow out of the classroom instruction. Write the parents a note and compliment them on their child's behavior on field trips and during conventions. Hold a parent-member banquet and invite parents to attend State and National Conventions. Parents are also asked to join the members on field trips. Taking students to a FFA member's farm develops positive feelings. The FFA Chapter has also sponsored scholarships and scholarship dinners for all underclass students.

The department seeks to involve its students in various work projects which can provide additional learning experiences. They have helped erect the roof on a 300,000 bushel grain bin, served as tour guides for a county farm show, covered outdoor grain storage for a local elevator and helped in the research plots of a local seed corn company. The South Newton Chapter in cooperation with North Newton FFA sponsor a Young McDonald's Farm at the county fair each year. This gives people a chance to see farm animals and gives the members a chance to exhibit projects.

Summary

In conclusion, almost every activity conducted by the local vocational agriculture program is related to public relations. Every activity worth doing is worth publicizing. It is easy to see that there are many interesting ways in which a community can be involved with and learn about its local vocational agriculture and FFA program. Involving students, parents, school officials, agribusinesspersons, and local community leaders all add to the strength and credibility of the instructional program. Through involvement in program activities, people will begin to recognize your program as a progressive one that serves the needs of its students and community.

ARTICLE

Quality Teaching — An Elusive Goal Are We Getting Closer?

By Johnny M. Johnson

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Quality classroom instruction will not be achieved until it become the number one priority to all parties concerned in the educational process. Teacher educators, administrators, teachers, students, and parents must place quality teaching above all other facets of vocational agriculture. Quality teaching probably receives more "lip service" than any other part of the program, but receives less attention. Somewhere in the maze of records, FFA, stock shows, fund raising activities, announcements over the school speaker system, public relations, shop supplies, courtesy pick-ups, and judging contests quality teaching loses its importance.

Daily Logs For Teachers

During the past three years, a group of teachers in Texas have been keeping a daily log of their activities. The teachers chosen for this informal survey were those who were considered to be among the "up and coming" young teachers. They were asked to keep an accurate and honest log of their daily activities. Confidentiality was assured. It is believed that rapport was sufficient to assure realistic logs. For example, in one log the teacher wrote, "During this hour, I let the kids clean the shop while I planned a ski trip. I was pooped from the banquet last night."

A study of the teacher logs was very realistic. In a program where there are 180 days of planned instruction, only 25 percent was spent in classroom instruction. Another 35 percent was spent in shop. Forty percent of the time was spent in various and sundry activities which seemed important at the time, but which probably did not result in a long-lasting learning experience for the students.

Funding For Programs

Each of the teachers was interviewed concerning their log. Most were surprised at the amount of class time spent on activities unrelated to instruction. Most said they were going to make changes. Fund raising activities seemed to be a large consumer of time. This probably will not change significantly until local school boards, administrators, and parents realize that the vocational agriculture teacher is running a sizeable business and that operating capital is needed. This lack of funding is partially due to the fact that young teachers have seen their former teachers raise money; they have been taught fund raising in the teacher education program; and, consequently, have become somewhat of an expert at keeping enough operating capital to run the program. As long as sufficient capital is available, the community and the local educational system see no need for additional funding. The victims of this dilemma are the students who are deprived of high quality classroom instruction.

School Public Address Systems

Administrative policy seemed to continually arise in the interviews. Speaker systems in the public school interrupt more classes and break more trains of thought than any other obstacle. Anyone who travels to a lot of school districts has seen a whole school disturbed so that the principal or school secretary can find one student. In some schools, an off-period is used to handle all the trivia. If teachers would unite and insist that classroom teaching not be interrupted, this problem would be solved. Principals certainly do not have as their purpose to lower the quality of teaching. They just fall into the trap of using their speaking system for convenience. Even worse, in some schools, almost anyone has access to the speaker system.

Teacher Education Impact On Quality

Quality teaching in the public school cannot be attained without quality teachers. The term "quality teacher" refers to a person who can present material to students through a variety of interesting and effective means. Presenting material does not mean that the teacher is always the lecturer. It may include coordination, peer teaching, consultants and a vast array of teaching techniques. Quality teaching should result in long remembered knowledge and skills that students will value enough to use in the out-of-school setting.

Teacher education programs in agriculture have only a short time to prepare teachers for entry into student teaching. All facets of the vocational agriculture program are taught. Students learn teaching methods through

(Continued on Page 18)

Quality Teaching — An Elusive Goal: Are We Getting Closer?

(Continued from Page 17)

video taping, private counseling sessions, etc. If a log was kept by teacher educators, they might be surprised at how little time was spent per student on preparing for classroom teaching.

Student Response to Teaching

Students in the first grade are usually very enthusiastic about learning. When the teacher asks a question, all hands go up. Somewhere between the first grade and high school, this enthusiasm can be lost. When a high school teacher asks a question, no hands may go up. Teachers hear a lot of "I don't knows" and "I don't cares." It is not considered "cool" to be smart. This trend seems to be seeping deeper into the elementary grades.

For quality teaching to occur, students must become more receptive. Almost any counseling manual will support the fact that a person who does not want help is very difficult to help. The same is true for learning. This informal study does not solve this problem. No one seems to have the answer. From the interviews with teachers, one major obstacle was identified. The Vocational Instructional Services Center in Texas has done an outstanding job of making excellent teaching materials available for teachers.

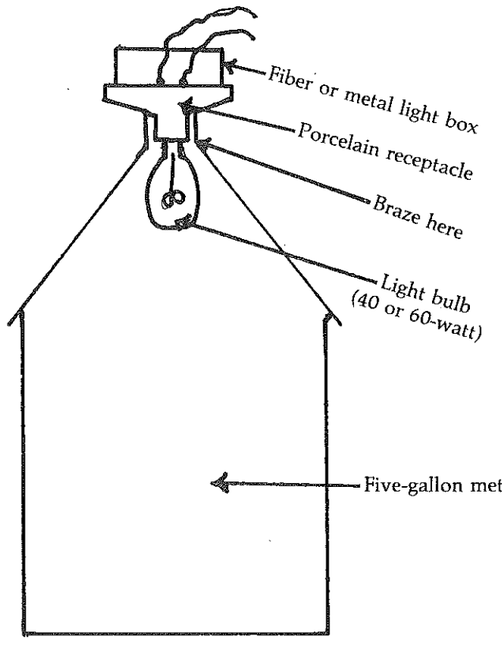
One can fill a room with transparencies and slide sets. If these materials are abused and overused, the students will become less receptive to learning. Who wants to sit day after day with transparency after transparency flashed before them? Whatever happened to real wool, real cotton, real soil, and all the thousands of other native teaching aids?

Teaching Must Be First Priority

Quality classroom teaching is the backbone of any agricultural program. No one has all the answers. Quality teaching is an elusive goal. It is something that educators must place a high priority on and constantly strive to attain. Based on the daily logs and teacher interviews, it seems that we are not moving closer to this goal. We may, in fact, be headed the wrong direction. An instant reversal can be made in the trend if all parties involved in the educational process will set one priority. The most important role of a teacher is to "teach."

TEACHING TIPS

Electrode Dryer



Are you having the problem of stored welding electrodes drawing moisture? If you are, you will be interested in learning how Freddie Waltz, vocational agriculture teacher at Pelion, South Carolina, has solved the problem. Freddie built a dryer from "on-hand" materials. Here's how he suggests making the dryer.

Find an old five-gallon metal can and remove the top. Clean out any oil, chemical, or whatever was in the can. Take a piece of sheet metal and make a funnel big enough to fit over the top of the can. In the small end of the funnel, attach a light socket. A porcelain socket and a fiber box work best, but a rubber socket can be used.

Wire the socket and install a 40 or 60-watt light bulb. Put electrodes in the bucket, put the funnel with attached light on the bucket, and plug it into a 110-volt receptacle. Keep the light burning and the electrodes will stay dry. The cost of the construction and operation is very minimal.

ARTICLE

Quality Instruction Through Motivation

By R. Lee Cole

Editor's Note: Dr. Cole is Assistant Professor, Agricultural Education, Oregon State University, Corvallis, Oregon 97331.

One of the ten commandments of good teaching is: "Thou shalt not fail to enrich thy material. All doctrine and no story maketh a dull lesson." (Author Unknown).

Quality instruction requires good technical information (doctrine). Understanding and learning are enhanced by providing motivation to that which is taught (story).

Motivation Principles

How can students be motivated to learn what is taught? Several points can be made that will help motivate students to learn that which is to be learned.

1) The instructor should connect new subject matter quickly and clearly with that which has previously been taught.

2) New subject matter should be directly related to student needs (present and future).

3) Be enthusiastic about the material and be positive about how the student will be able to do various challenging activities.

4) Draw on natural interest principles to keep the students involved with the lesson (i.e., curiosity, desire for approval, desire for advancement, competition, pride of ownership, the novel or unexpected, etc.).

5) Challenge students to think and creatively solve problems facing them in class and in life.

One of the key contributors to motivation, interest principles, is frequently overlooked by teachers who are pressed for time by lesson preparation, FFA activities, SOEP supervision and a myriad of other school related activities.

Classroom Application

In his book, Permanent Learning, W.H. Lancelot indentified several interest principles which contribute to a student's motivation to learn. They were identified as: activity, love of nature, curiosity, creativeness, gregariousness, desire for approval, altruism, self-advancement, competition, pride of ownership, increase in knowledge and skill, interest is contagious, the novel and unexpected are interesting, and humor creates interest.

Many of these principles are used almost automatically by teachers. Some require real creativity to utilize. The purpose of this article is to provide some ideas and/or examples for one of these principles which is not commonly used, but which sparks real excitement and enthusiasm when it is used. That interest principle is "the novel or unexpected is interesting."

If an instructor was going to start a Dairy Management Unit, and the problem of determining cost of replacement stock was to be considered, the following would be a novel way to start the unit.

Be relating replacement stock purchase to the process of buying a car, the instructor can gain interest in the replacement stock purchase decision making process.

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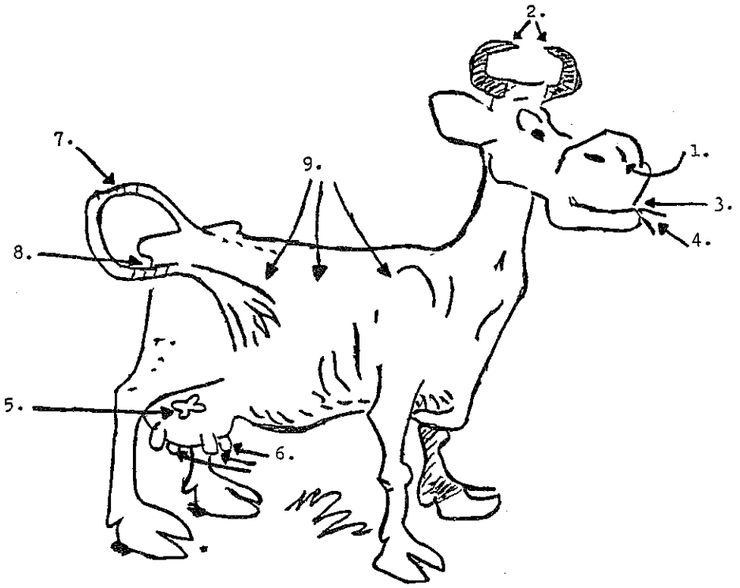

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Quality Instruction Through Motivation

(Continued from Page 19)

When starting a rope unit, demonstrate how to tie an overhand knot without letting go of either end of the rope. This cannot be illustrated on this page, but is easily demonstrated and creates tremendous interest on the part of the students to see if they can do it also. This interest can then be transferred to tieing other knots in a rope unit. There are numerous rope tricks that can be used for a rope unit, such as a bow knot that is tied in one motion apparently without releasing the rope, or throwing an overhand knot in the end of a rope without touching the knot end. Several teachers and teacher educators utilize these or similar examples; ask them for a demonstration.

In introducing a microcomputer unit, show students how easy it is to program by using the following activity.

Ask a student to "Say 'stop' three times rapidly. That's very good. Now say 'stop' five times rapidly. Excellent. Now say 'stop' seven times rapidly. Superb. Now say 'stop' ten times rapidly." Then say quickly, immediately after the student says the last stop, "What do you do when you come to a green light?" Nine times in ten, the student will answer "stop." This only works on unsuspecting students, so don't try it twice with the same class.

Another example of programming is as follows. Have the following sentence printed on a small piece of paper: FINISHED FILES ARE THE RESULT OF YEARS OF SCIENTIFIC STUDY COMBINED WITH THE EXPERIENCE OF MANY YEARS OF EXPERTS.

Turn the paper face down in front of the students. Have the students turn it over and read it quickly for understanding. When they are finished reading they should put the statement face down on the table again. Say "Did you understand it? Okay, turn the paper over again and count the "Fs" on the page then turn the paper face down again." There are seven "Fs" on the page; students usually get three. Ask them how many got three, put the number on the chalkboard, how many got five, etc. Make a game of it — both you and your students should have fun at this. Then relate what you have just done to programming a computer accurately. The reason most students only get three instead of seven "Fs" is that we are programmed to pronounce "of" as "ov", and therefore do not read the "Fs". It is important for computers to have all words spelled correctly.

There are numerous other example of programmed reactions; ask your teacher educator to help you with some.

The last example can be used when teaching photosynthesis to students. Don't just put the equation on the board. Follow this process: "Plants make sugar, right? You learned that in biology! How do they do that? They take air, dirty old air (blow in a paper bag) and mix it with water (add a couple drops of water to the paper bag and blow into the paper bag a couple more times), mix them together (shake the bag vigorously) and then the plant produces sugar that it can eat (palm a candy bar, reach into the paper bag and pull out the candy bar, and eat it in front of the class)." Now relate this to the way a plant produces fruit and fiber and deal with the photosynthesis equation in more detail if that is a goal.

The point of this article is simply that learning can be greatly enhanced by some creativity on the part of the instructor. Teaching should be enjoyable — allow it to be. Students will learn more if learning is both applicable to their needs and an enjoyable experience in their lives.

BOOK REVIEW

ARE PESTICIDES REALLY NECESSARY? by Keith C. Barrons, Chicago, Illinois: Regnary Gateway, Inc., 1981, 245 pp., $6.95.

ARE PESTICIDES REALLY NECESSARY? is an interesting, informative, and realistic overview of the usefulness of pesticides in our environment. The book is divided into three sections.

Section I addresses the issue "Why Pests Have Not Overwhelmed Us." Emphasis is placed on how nature provides our environment with a defense against pests, predators, and parasites. The development of new disease free seed varieties or hybrids has assisted in combating many disease. Importation of selected species of insects has aided in controlling harmful predators. Farming practices such as crop diversity and rotation have helped in reducing the severity of pests.

Overall, Section I provides some interesting insight into some myths that exist concerning growing plants and how pests may be controlled. The use of facts and examples makes for interesting reading. Integrated Pest Management (IPM) is identified as the most practical means to keep pest populations below the threshold of economic damage.

Section II is entitled "The Pesticide Drama." The impact of seed protectants on crop production stability and the economic benefits resulting from seed protectants are discussed. Crop and animal production in the United States in a product of better breeding and improved pest control. Factual information is provided concerning environmental reasons why nitrification inhibitors should be utilized with ammonia fertilizers. Emphasis is placed on environmental and chemical practices as necessary components in protecting our health.

Section III, entitled "Pesticide Safety" deals with concepts, controversies, and controls. Chapters 29 and 30 highlight the chemistry and toxicology of many elements in the environment. How pesticides are regulated in the United States and international cooperation are lightly covered. The question of human health and pesticide controversies are reviewed from a trade-off approach. Data concerning lethal and nonlethal accidents are discussed as related to the type of poisonings.

Integrated pest management first line of defense is pesticides. The author concluded that there are trade-offs, but "Yes, Pesticides are Really Necessary."

Dr. Keith C. Barrons' expertise as a plant breeder and personal experiences in pest control is reflected in his book. ARE PESTICIDES REALLY NECESSARY? would be a very good teacher reference to provide vocational agriculture teachers with insight into the pros and cons of pesticide use.

Fred Reneau
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ARTICLE

Applying Educational Psychology To Agricultural Education

BY RICHARD MAKIN

Editor's Note: Mr. Makin is a Pennsylvania vocational agriculture teacher pursuing a doctoral degree in the Department of Agricultural and Extension Education at Mississippi State University.

The chances are that at sometime in the past you were required to know about B.F. Skinner, Jerome Bruner, David Ausubel, and countless other educational psychologists. Should the ideas of these men be a part of your teaching? Do the terms operant conditioning, negative reinforcement or concrete operations have any significance for the teacher of agriculture? Is educational psychology applicable to agricultural education?

If you answered yes to all of the above questions, you are probably an effective teacher. Too much of what we learn as undergraduate and graduate students is never applied in the classroom and laboratory. This includes our knowledge of educational psychology. Although agricultural education has its basis in developing saleable skills and learning by doing, educational psychology is important and relevant and cannot be overlooked. All phases of the teaching/learning process; preinstructional, instructional, post-instructional; are dependent on an understanding of educational psychology.

Teachers of agriculture are most familiar with choosing and carrying out methods of teaching and then evaluating that instruction. However, we also need to be competent in applying what we know about the learning process, choosing appropriate objectives of instruction, and determining the characteristics of the students that we teach. All of these activities are founded in educational psychology.

Applied Learning Theory In Agricultural Education

Teachers of agriculture need a basic understanding of learning theory. If eleventh grade students have repeatedly practiced but not yet mastered a fillet weld, how can the teacher work with them so that they continue to practice and do not give up? Besides being unsafe, why should an agriculture teacher never operate a table saw without protective eyewear? After a discussion of soil pH and nutrients using a somewhat different approach, what can account for a student concluding that the soil pH is low after observing an iron toxicity?

These questions can be answered with learning theory. Through an understanding of operant conditioning, the teacher would know that positive reinforcement and corrective feedback are important in working with the student having difficulty with welding. Similarly, you would not operate the table saw without eye protection because of the principles of observational learning. In the final situation, unexplained mental processes enable the student to finally understand the relationship between soil pH and nutrient availability. Cognitive learning has taken place.

The implication for vocational agriculture teachers is clear. By understanding a variety of learning theories, the teacher is better able to work with the learner and enhance student achievement. Many teachers take learning for granted until they encounter difficulties in learning or realize that they do have to teach somebody something. The assumption that learning is totally spontaneous is misleading.

It is important that teachers of agriculture consider ways to maximize learning through the application of principles from the most appropriate learning theory. Learning can be directly enhanced by specific practices and strategies dependent on an understanding of learning theories.

Instructional Objectives In Agricultural Education

A vocational agriculture teacher is preparing a lesson on management skills in sheep production. An instructional objective might be: "Given a large ram, the learner will use the nose down method to throw the sheep 100 percent of the time."

Teachers of agriculture acknowledge the importance of written instructional objectives. Nonetheless, many use a variety of reasons for not developing instructional objectives for the course which they teach.

The writing of good objectives is both time consuming and difficult. A realization of why instructional objectives are important makes their development seem less tedious. Through the use of teaching objectives, the instructor is aided in selecting relevant materials, methods of instruction, and evaluation procedures. In times of accountability, objectives convey instructional intent to others. Most important, teachers concentrate on what the learners should do with the content rather than simply the content itself. The advantages of instructional objectives are well worth the time and effort needed to develop them.

The parts of an instructional objective are the testing conditions, the terminal behavior expected, and the performance standards. The testing conditions specify what the learner will be given or allowed to use. The terminal behavior must be clear and explicit in terms of overt, observable behavior. The performance standards are the minimum levels of accuracy that are considered acceptable. Even complex tasks, such as appraising bales of alfalfa hay for quality, become more manageable when specific objectives consisting of the above three components are stated.

A final point concerning instructional objectives in agricultural educa-

(Continued on Page 22)

tion must be made. In too many cases, objectives are written at the lower levels of a single domain of knowledge. In the cognitive domain, objectives are most often written at the knowledge, comprehension, and application levels. Too few objectives can be categorized into the analysis, synthesis, or evaluation levels. This is a serious shortcoming since the upper levels of the cognitive domain are where problem solving abilities are learned.

Likewise, psychomotor objectives are usually at the imitation and manipulative levels rather than naturalization. In the affective domain, teachers seldom write objectives at any level. Teachers of agriculture need to do a better job of writing both low and high level objectives across all three domains of knowledge: cognitive, psychomotor, and affective.

Characteristics of Vocational Agriculture Students

Why is it that some students choose to participate in public speaking contests when others do not? How can an individual develop the best welding skills in class after failing a test on the theory underlying welding? What explains students who are trustworthy and responsible when others are not? The answers to these questions are student characteristics and their differences.

Teachers of agriculture will quickly recognize that differences such as these are common. Many factors contribute to the characteristics of our students. Age, stage of development, socioeconomic status, home and neighborhood conditions, intelligence, and personality are but a few of the variables that interact to give student characteristics. Some educational psychologists recognize five categories of variables that contribute to student characteristics. These are cognitive abilities, psychomotor abilities, affective characteristics, effects of family and socioeconomic status, and sex (Klausmeier, 1971).

The point is that as teachers we need to recognize what these factors are and that they collectively do result in student characteristics. The importanct of this is obvious. Specific instructional procedures are going to affect different learners in different ways depending on the characteristis of the learner (Lembo, 1969).

The teacher also needs to use every available means in assessing student characteristics. Often times this is possible through the use of tests. For example, it is useful to know the present levels of reading achievement and specific reading skills of students when planning instructional strategies. In spite of this, many teachers do not consider this information even when it is readily available.

Obviously, some characteristics are difficult or impossible to determine with a pencil and paper test. It is then that the student/teacher relationship is most important. By establishing rapport and showing interest in a student, the teacher is able to gain an understanding of the effects of factors such as family, peers, and socioeconomic status. In vocational agriculture, this can be readily done through home visitations.

The responsibility of assessing the characteristics of vocational agriculture students is difficult but not impossible. The determination of these characteristics will lead to more meaningful instructional strategies in both the classroom and laboratory.

Characteristics of the Vocational Agriculture Teacher

The teacher is primarily responsible for writing instructional objectives, applying the principles of learning theories, or determining the characteristics of students. With this is mind, it is not surprising to find a low but positive correlation between teaching effectiveness and general intellectual ability and grade point average during the college years (Klausmier, 1971). The cognitive characteristics of teachers are important. Along these same lines, students are more likely to learn when the instructor possesses and can demonstrate specific psychomotor abilities.

However, the affective characteristics of effective teachers are often overlooked when, in fact, the affective differences among teachers are probably more important in determining teaching success than are cognitive differences. During actual teaching, several affective characteristics of the teacher correlate positively and moderately high with teaching effectiveness. These include being warm, understanding, and friendly, being responsible, businesslike and flexible (Klausmier, 1971). Vocational agriculture teachers cannot disregard the affective domain in any of their activities. It is our responsibility to fully develop the affective characteristics which are most conducive to teaching effectiveness.

Summary

An understanding of educational psychology is one requirement for success in vocational agriculture. The better you comprehend the aspects of psychology, the more versatile you are likely to be as a teacher (Biehler, 1971).

It is our responsibility to use every available means to enhance student achievement. If necessary, we need to refresh our understanding of learning theory so that it can be applied in the classroom and laboratory on an every day basis. All too often, instructional objectives are written to satisfy an administrative requirement. In the future, vocational agriculture teachers must be committeed to writing instructional objectives that enhance student achievement.

Finally, teachers need to assess the characteristics of their students in order to select appropriate instructional strategies. If we fail to do so, the situation is analogous to that of a doctor prescribing medication without seeing the patient. To some, these activities may seem incompatible with teaching vocational agriculture. However, this outlook is far from true. The bottom line in education is student achievement. The commonality of all these practices is in fact enhanced student achievement.

In addition, the above practices clearly demonstrates that teachers of agriculture are professional educators. As a profession, we need to convey an unmistaken message to others in the field of education. Teachers of agriculture are educated professional individuals who know how to apply broad educational principles in their classroom situations. This includes concepcepts of educational psychology. As teachers, we must always use our academic background to benefit all vocational agriculture students.

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BOOK REVIEW

Foundations for Managing the Farm Business by D. Lynn Forster and Bernard L. Erven, Columbus, Ohio: Grid Publishing Co., 1981, 351 pp., $20.95.

This is a new text in farm management. The book is well titled. Introductory chapters of the book review management functions as well as define basic economic concepts such as, average and marginal costs, economics of size, fixed and variable costs, and incremental costs. Much of the text is devoted to the explanation of financial statements, budgeting, capital budgeting and farm organization planning.

Step-by-step procedures are detailed to give the introductory student adequate guidance in understanding how to create and use farm financial statements. Farms balance sheet examples are detailed with sample entries. Income statements and cash flow examples are provided to assist in understanding their usefulness to farm decision.

One chapter is devoted to farm labor management. A review of labor laws and regulations is included. Farm lending institutions and forms of farm business organization are useful guides for practicing as well as aspiring farm manager. Chapter 12 treats the topic of farm estate management. Samples of estate transfer tools such as wills, life insurance, trusts, life estates, partnerships, corporations, installment sales and annuities are examined. The final 10 pages are devoted to the topic of farm marketing management.

The book would make an excellent high school or college farm management text. It is easy to read and understand for beginning students as well as practicing farm managers. High school teachers will find the examples quite valuable for preparing future farm managers.

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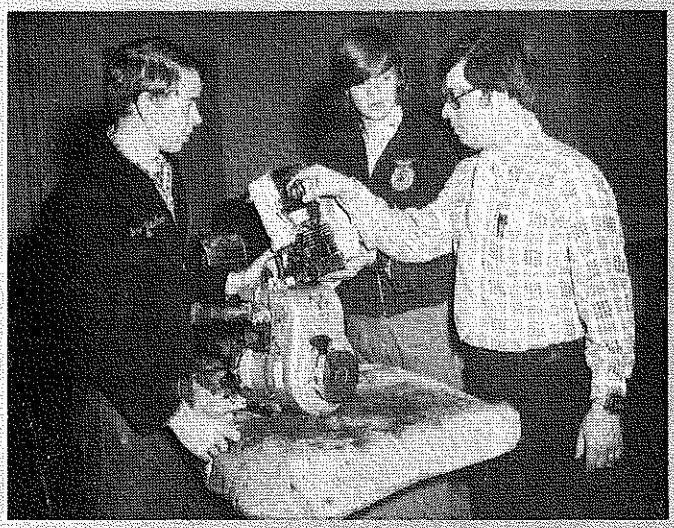
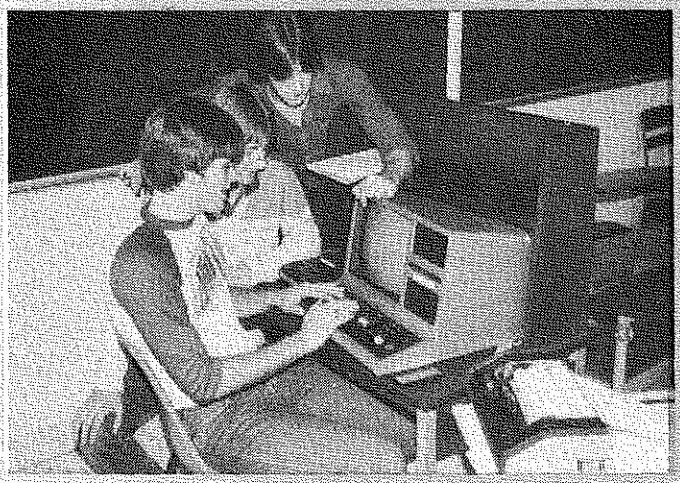
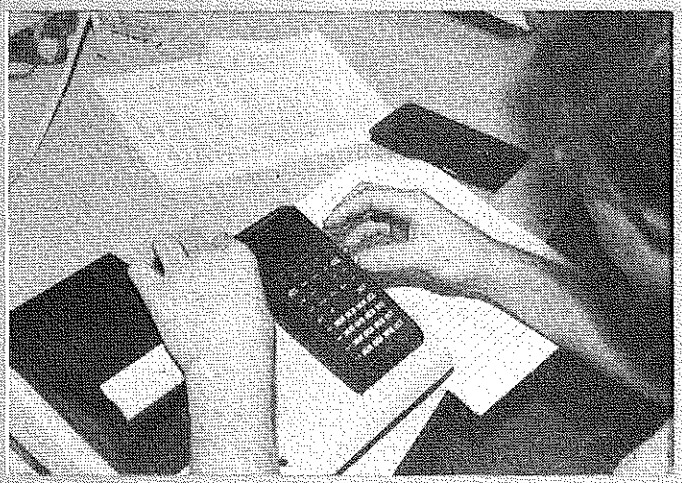


Learning experiences are extended into the laboratory (photograph by Dr. Gilbert Guiler, The Ohio State University).





High technology is becoming commonplace in vocational agriculture classrooms with many schools utilizing mini and microcomputers. (Photographs by Chuck Wiseman, Big Walnut High School, Sunbury, Ohio 43074).