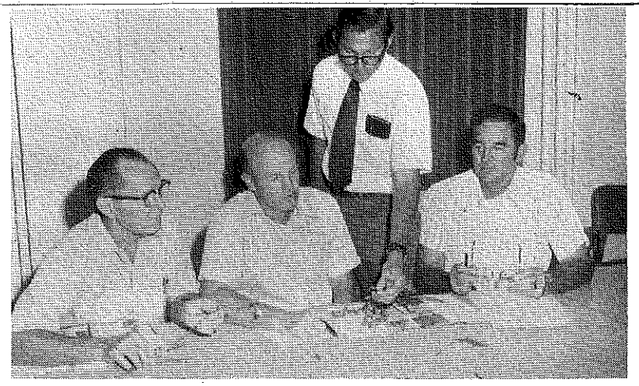
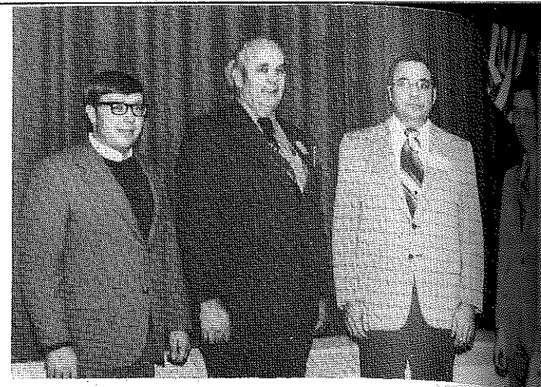
Agricultural Education

Volume 47 — December, 1974 — Number 6



Professionals wage a War on Weeds — Dr. Gale A. Buchanan, standing at center, of the Auburn University Agronomy Department, helps Alabama agribusiness teachers, M. L. Carroll, (left) Grantley; R. O. Bugg, Highland Home; and K. H. Cook, Dozier update their weed identification proficiency at a summer in-service workshop for agribusiness teachers. (Photo from Cecil Gant, Agribusiness Division, Alabama Department of Education)



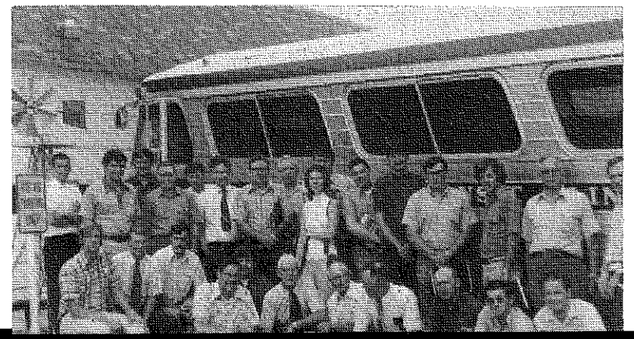
Improving Administrative Techniques was the theme of a Connecticut workshop for 50 teachers. Directors (left to right) were Dr. Alfred J. Mannebach, Teacher Educator, University of Connecticut and Roger W. Lawrence, Consultant, Connecticut State Department of Education. Consultants for the workshop includes Dr. Harold R. Crawford, Iowa State University and Dr. Howard Sidney, Agricultural and Technical College, Cobleskill, New York. (Photo from Alfred J. Mannebach, Associate Professor, Agriculture Education)

Stories in Pictures

by Richard Douglass

Harold Dutsch, Jr., (left) member of the Lee Road Jr. High School FFA Chapter and Nahlon Voght (right) of the Thomas FFA Chapter observe Byron MacGregor as they obtain his autograph during the Poultry and Egg Institute of America Jr. Fact Finding Conference held in New Orleans. MacGregor, news director for CKLW, Windsor, Ontario, became famous overnight when his recording of AMERICANS sold one and a half million copies the first week. Mr. MacGregor gave a reading of his recording during his talk to the delegates at the conference. (Photo from J. C. Simmons, Vo-Ag Area Supervisor, Louisana Department of Education)

Professional Improvement on Wheels — shown below, a group of Missouri Teachers during a summer travel course taught by Professor C. V. Roderick. They visited the following schools: Fairfield High School. Fairfield, Iowa (shown in background); Kirkwood Community College, Cedar Rapids, Iowa; Hawkeye Technical Institute, Waterloo, Iowa; an area voc-tech school, Fairbault, Minnesota; Adult High School Program, Owatonna, Minnesota; Area Vocational School, Chillicothe, Missouri. (Photo from Gene M. Love, Professor and Coordinator, Department of Agricultural Education, University of Missouri)



Several participants in the Floral Arrangement and Design Workshop held at the University of Kentucky are shown discussing their arrangements with the instructors, Dr. Jack Buxton and Mrs. Carol Mitchell, a commercial florist. Shown (L to R) are Dr. Buxton, Jeff Callahan, Mrs. Mitchell, H. Conrad Haynes, W. Thomas Wison, and Dorris W. Bruce. Twenty-four teachers participated in the workshop. (Photo from Rodney W. Tulloch, Assistant Professor, Department of Agricultural Education, University of Kentucky)

Theme—BETTER TEACHING AND LEARNING

The
Agricultural Education
Magazine

EDPRESS Vol. 47 December, 1974 No. 6

TABLE OF CONTENTS

This publication is the monthly professional journal of agricultural education. The journal is published by THE AGRICULTURAL EDUCATION MAGAZINE, INC., and is printed at the Lawhead Press, Inc., 900 East State Street, Athens, Ohio 45701. **SUBSCRIPTION PRICE:** $5 per year. Foreign subscriptions $6. Student subscriptions in groups (one address), $2 for October-May. Single copies and back issues 50 cents. In submitting subscriptions, designate **new** or **renewal** and address including ZIP code. Send all subscriptions and requests for back issues to Harlan E. Ridenour, Business Manager, AGRICULTURAL EDUCATION MAGAZINE, Box 3843, Columbus, Ohio 43214.

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Send articles and pictures to the Editor or to the appropriate Special Editor.

COVER PHOTO:

Elissa Walters (second from left), horticulture teacher at Pulaski, Virginia, explains special requirements of fancy-leafed caladiums to her students in the school greenhouse.

Guest Editorial

MASTERY LEARNING: Fact or Fiction?

Raymond Garner
Teacher Education
Michigan State University

Raymond Garner

Given the students who typically enroll in classes in vocational agriculture, is it realistic for teachers to assume that all or nearly all of them can be taught what they need to know to do a good job of performing such tasks as servicing and operating a tractor, establishing a fine lawn, producing a quality litter of market hogs or carrying out any of the many other responsibilities expected of successful workers in agriculture? Is it reasonable, in other words, for teachers to expect all of their students to achieve at high levels of accomplishment? Apparently, advocates of mastery learning would answer these questions affirmatively.

What is mastery learning? While individual perceptions vary on the elements which should characterize a mastery learning program, it seems to be agreed that mastery learning presumes accomplishment in keeping with a predetermined level of acceptable performance. Under mastery learning, then, both students and the teacher would know in advance the minimal level at which the students would be expected to achieve by the time instruction is completed.

In actual practice, it is probably unrealistic to assume that all students can accomplish according to a predetermined standard of achievement. But considerable research indicates that the proportion achieving an acceptable level of performance can be much higher than has been the case under the more traditional evaluation procedures when a student's performance is judged by what he is able to do in relation to other members of his class.

Yet the so-called normal grading curve, as a reflection of student performance, still persists among many educators. Too often, perhaps, a teacher is obliged to look for almost infinitesimal differences in the performance of his students so his grades can be widely dispersed even though he has evidence that most of his students have achieved at high levels. And, in spite of the current thrust on developing and implementing performance objectives with their built-in provisions for high levels of student achievement, some school administrators still insist that grades be distributed on a "normal curve."

Do teachers of vocational agriculture feel that their students are able to achieve at mastery levels? When the writer considered this question, with a group of Michigan teachers,* the answer was a positive even though a qualified yes. The answer was yes if each student is permitted ample time to complete each learning task and if the teacher avoids the practice of giving a common assignment to be completed in a specified time while using the same instructional procedures with all students.

*George Hubka, Hastings; Russell Johnson, Lakeview; James Thompson, Caledonia; and Harold Wisneski, Grand Rapids.

Last spring four teachers explored the possibilities of mastery learning as a strategy for teaching one of the units of instruction included in their courses of study. None of the units was specially introduced for this project. All of the units would have been taught had the teachers not participated in this exploratory study. No special instructional resources were used other than those which would have normally been available. It was not necessary, for example, to secure special hardware or software to get the program underway even though all of the teachers, without a doubt, would have welcomed a larger budget for the purchase of additional instructional materials and equipment. The principal variation from previous practice was the extent that the teachers used designated instructional procedures.

Each teacher agreed to employ a teaching strategy adapted from procedures outlined by Bloom, Block and Airasian.[1] This teaching strategy included the following steps.

1. Analyze each unit into its constituent elements or learning tasks.
2. Predetermine what constitutes an acceptable level of student performance so both the students and the teacher understand what is expected of them.
3. Provide instruction designed to help the students achieve mastery of each learning task.
4. Construct brief diagnostic-progress (formative) tests and give them to the students to determine which of the tasks have been mastered. Emphasize that these tests are to be used to facilitate teaching and learning; they are not to be used for grading.
5. Score the tests in terms of item responses so that each unmastered learning task can be identified.
6. Provide specific supplementary learning activities designed to help each student overcome his particular learning problems.
7. Provide end-of-instruction (summative) evaluation to determine how well each student has performed. Appraise each student according to how well he has measured up to the predetermined standard and not by his performance in respect to other students.

While carrying out this teaching strategy, the teachers tended to keep their instruction centered on each class as a unit, although they encouraged a great deal of informal learning and considerable individualizing of instruction within a class. Frequently, the teacher would cooperatively work up an assignment with the students, followed, perhaps, with a demonstration or explanation. He might then monitor learning progress while he tutored individual students or assisted groups of students. Since the diagnostic-progress tests were brief, it was possible to give and score them without a noticeable interruption of the on-going student learning activities. Reteaching was used as a remedial or corrective technique when several of the students failed to demonstrate mastery of a particular skill or understanding.

In addition to the tutoring provided by the teacher, individual students were encouraged to tutor each other. Small groups working together also appeared to be an effective procedure for promoting learning. Individual students

1 James H. Block (editor). *Mastery Learning—Theory and Practice*. Chapters 4, 5 and 6. New York: Holt, Rinehart and Winston, Inc., 1971.

were encouraged to search out relevant factual information and pertinent research data from available references as well as from sources outside the school. Extensive use was made of appropriate visual aids. Students who had quickly mastered assigned tasks were permitted to pursue projects of special interest. For example, one student was provided a valuable learning experience when he prepared a slide series on potting plants. Later this series proved to be a useful learning aid for other students.

Certain instructional management problems became evident while the teachers were using the mastery learning model. For example, as every experienced teacher would expect, the bright students learned rapidly and it was necessary to continue to challenge them after they had mastered a required learning task. Instead of accelerating these students by permitting them to move ahead individually on other required learning tasks, the teachers appeared to prefer curriculum enrichment as the primary method for motivating the more able students to work up to their maximum capacities. It was a rather common practice, for instance, for the teachers to encourage their better students to conduct in-depth study and investigation of problems related to the required learning tasks.

A second instructional management problem was centered on providing sufficient time for slow students to achieve mastery. This problem was further complicated since slow learners are more often handicapped because they have not acquired essential prior skills and knowledge. One of the teachers, for instance, found that some of his students were unable to calculate the amount of seed needed to establish a lawn because they lacked certain skills in arithmetic. Fortunately for these students, the teacher did not ignore their deficiencies by lamenting that it was too bad that they had not learned how to divide in the elementary school. Rather he took steps to provide the necessary remedial instruction.

In actual practice, the teachers indicated that they did not seem to be able to budget sufficient time so that all of the slower students could be helped to achieve mastery. However, they reported that it was possible for most of their students to achieve at high levels on most learning tasks.

It should be recognized, of course, that the problems of managing instruction to provide for the needs of the rapid and the slow learners are not peculiar to mastery learning.

A teacher often feels obligated to look for almost infinitesimal differences in the performance of his students so his grades can be widely dispersed even though he has evidence that most of his students have achieved at high levels.

To some degree at least, a teacher is always confronted with these problems even though the problems may seem less conspicuous because the teacher has ignored them by providing the same instruction to all students while evaluating their performance in terms of how well they have accomplished in relation to their peers and not according to how well they have achieved in respect to predetermined standards.

If teaching for mastery is generally adopted, teachers might prefer to use an individualized learning approach which permits each student to progress at his own pace. Such an approach might be particularly adaptable for students who failed to acquire academic skills during prior instruction and for those students who needed supplementary instruction in order to gain mastery of specific learning tasks.

Use of a highly individualized instructional approach can also present some instructional problems. If students are encouraged to progress according to their own rates of learning, each will soon be working on something different from the rest of the class. In this situation, some teachers may find it difficult to provide the needed individual assistance and will either try to prepare self-instructional materials for their students or will depend on commercially prepared materials. The heavy demands on their time and energy might discourage teachers from preparing their own self-instructional materials. Furthermore, suitable self-instructional materials may not be available from commercial sources. But, assuming that teachers are able to prepare or secure satisfactory self-instructional materials, they could still become frustrated with the necessary planning and record-keeping operations required to administer an individualized self-instructional program.

It should also be recognized that much of the instruction in vocational agriculture requires that students work together to achieve common goals and purposes. This is particularly true of instruction which is centered around FFA activities. Two of the teachers referred to in this

(Concluded on page 126)

Themes For Future Issues

January —	Urban Agricultural Programs	June —	Women in Agricultural Education
February —	Programs in Natural Resources	July —	The FFA
March —	Utilizing Resources in Teaching	August —	Serving Out-of-School Groups
April —	Informing the Public	September —	Guidance, Counseling and Placement
May —	Teaching the Disadvantaged and Handicapped	October —	International Agricultural Education

Improving Teaching and Learning

L. H. Newcomb

L. H. Newcomb
Teacher Education
Ohio State University

Local agricultural education instructors are often caught in a perplexing dilemma. On the one hand teachers are told they must be well steeped in technical agriculture and on the other hand they must also possess a mastery of pedagogical competencies. As if those two demands were not enough, there exists a third dimension: remaining *current* technically and pedagogically. Since this Journal is not the proper forum for addressing the matter of technical substance, it will be the intent of this article to focus on the professional aspects of teaching. Therefore, let the reader take for granted that this writer fully believes in technical competence. However, even though you are well informed, remember, "A merely informed man is the most useless bore on God's earth."[1]

No Panaceas

The first thing the professional educator must come to realize is that there are no easy answers—no simple panaceas. B. F. Skinner predicted that teaching machines would be the salvation of the profession, but such was not the case. Likewise there was the era of programmed instruction, but it is only as good as the effectiveness of the person who plans for using and uses it. For decades the educational jargon has utilized the words "individualized instruction," but in most instances individualized instruction is a good idea that is seldom used even to the potential it has. Clearly the fads, the slogans, the instant cures for enhancing have not stood the test of time nor the rigor of practical educational programming.

A Return to Productive Pedagogy

Perhaps even in an era of great technology, it would be good for us to return to that which has stood the test of time and rededicate ourselves to make it work—because it has before, it does now, and it will in the future.

The responsibility for formulating group objectives is shifted from the teacher as dominator to the students as partners in planning for learning.

Learning will be substantially improved if the teacher causes students to analyze the situation and formulate questions to which they need answers.

Foremost in this writer's mind are two concepts which agricultural education instructors need to continue to incorporate in their teaching.

We cannot afford to approach planning for teaching, or teaching itself, without utilizing our creativity to be sure students have a *felt* need for learning that which we propose to teach. It is absolutely essential that, in beginning a unit of instruction, we provide an opportunity for students to recognize the importance of this new learning to their lives both now and in the future. How can this objective be accomplished? Alfred H. Krebs[2] in *For More Effective Teaching* suggests that teachers open their lesson with an interest approach and then lead students into formulating goals or objectives they *personally* have for studying the unit. To accomplish this, the responsibility for formulating group objectives is shifted from the teacher as dominator to the students as partners in planning for learning. Students are asked leading questions which cause them to see for themselves reasons why they should learn. Not only do students see why, but they are also led to psychologically commit themselves to learning the new concepts and skills. It is important that the students get a clear mental picture of the "reasons why the unit is important to them." It is often desirable to list some of their reasons on the board. Later on in the study of the unit, when the dissidents ask "why do we need to know this 'stuff'?" the teacher is able to refer back to the reasons his peers advanced earlier.

It is crucial that agricultural instructors, emersed in a laboratory of life as they are, draw heavily on the long-standing principles of John Dewey. If students are to be intrigued with learning, they must face the problems of the real world and find solutions to real problems. Certainly agricultural subject matter lends itself well to problem solving.

Rather than spoon feed the answers, or the unadulterated subject matter, to

(Concluded on next page)

(Newcomb—from page 125)

students; learning will be substantially improved if the teacher causes students to analyze the situation and formulate questions to which they need answers before they can reach *their* already established goals and objectives. This form of teaching readily allows the instructor to base his teaching on the current problems of the student and to capitalize further on students' felt needs. In production agriculture the student with a sow ready to farrow has a *need* to know what to do. The horticulture student producing a crop of poinsettias *needs* to know when to shade, when and how to fertilize, and how to control insects and pests. Such students are ready for and able to see the value of instruction.

It, of course, becomes obvious that this approach to improving learning also provides for applying that which has been learned. If the practice taught in the classroom and applied in the laboratory works, the correctness of the practice is reinforced. If the practice does not work, new solutions must be sought.

Teachers who follow this paradigm of teaching will be successful. Of course they should use a variety of methods of instruction in teaching answers to questions. Likewise the newest technology should be infused into the instructional process.

Do Not Neglect the Laboratory

Thus far classroom teaching has been the main focus of this article. However, as agricultural educators move toward longer time blocks, more effective planning for laboratory learning is essential. For teachers having three hours of lab daily with twenty-five students enrolled, they *must* have *at least* seventy-five hours of productive learning planned each day. Whether your laboratory is a shop, greenhouse, school farm, home farm, or cooperating business, you must use it to create changes in the behavior of students.

Just as a teacher uses the related class instruction to prepare students for the laboratory, so he *must* use his agricultural education program to prepare his students for the laboratory of life itself. It is not enough to merely "train" students so they possess skills and execute them as a robot would. It is a teacher's responsibility to take an extra step and try to teach students how to live. Yet all of us want to fulfill such a goal and the only way we can is to *plan, exhibit enthusiasm, be well organized, be clear* and constantly strive to make "every kid a winner" in the game of life.

References

1. Whitehead, Alfred N., *The Aims of Education*. New York: The MacMillan Company, 1959.
2. Krebs, Alfred H., *For More Effective Teaching*. Danville, Illinois: Interstate, 1967.

(Garner—from page 124)

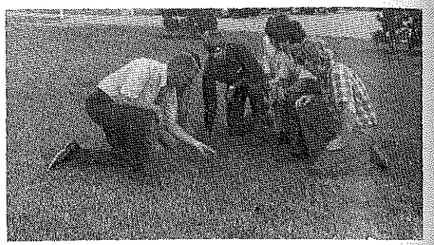
article, focused mastery learning on FFA projects.

Because of the advantages which may accrue from students working together on common tasks and because of possible problems which may arise from a student-paced, individualized instructional program, some teachers may prefer to continue to center their instruction around common class problems while providing many opportunities for small-group or individual student learning opportunities within the class.

Currently, a movement across the country encourages or requires teachers to adopt a performance-based curriculum. In some states teachers are actively writing performance objectives; in others, performance objectives are being prepared for teachers. It is common to build criteria into the objectives which indicate that all or a large majority of the students will be able to perform at acceptable levels of accomplishment. Thus, a mastery learning strategy is implicit in a performance-based curriculum.

Can teachers of vocational agriculture carry out their instruction so that all or nearly all of their students will be able to achieve the mastery indicated in performance objectives? Over the years, the writer believes that he has observed many teachers who are able to help their students learn at mastery or at levels close to mastery just because they were doing well the tasks that have come to be looked upon as "part and parcel" of the job of teaching vocational agriculture.

Why does this seem to be the case? The approach of successful teachers of vocational agriculture is highly student centered. They provide a wide array of learning opportunities to help each student achieve, not only at the school but also in the less formal learning environment of the community. The teachers provide individualized instruction to assist students in carrying out supervised experience programs. While students plan and carry out their FFA



Russell Johnson, Lakeview, Michigan teacher, uses small-group instruction to bring out problems on turf establishment.

programs of activities under the guidance of their teachers, they are afforded tremendous opportunities to learn, individually and from each other. Thus, many of the elements for implementing a mastery learning strategy are inherent in the programs of instruction conducted by successful teachers of vocational agriculture; so, one could logically conjecture that many of them are already carrying out mastery learning strategies.

But to guard against becoming too complacent over our accomplishments, it behooves all of us to pause periodically and ask ourselves if we really are helping all of our students achieve up to their potential. Even though we have adopted a performance-based curriculum and have subscribed to a mastery learning strategy, it may prove to be a real challenge to be able to judge the performance of our students by the extent that they have reached predetermined goals and not by their record of achievement in relation to other students. In spite of performance-based curricula, it could prove more difficult than we might think to dispel the notion that only a relatively small percentage of our students will learn at high levels, a similar percentage will achieve at low levels or scarcely at all, while a majority will learn at levels somewhere between these extremes. ◆◆◆

THE FORGOTTEN INTEREST APPROACH

Gary E. Moore
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The Ohio State University

Gary Moore

The students in my Introduction to Agricultural Education class were discussing what they had observed during their recent visits to various departments of vocational agriculture. The discussion included such areas as discipline problems, housekeeping, the FFA programs, and the daily lessons which were taught. One student mentioned that the teacher he observed did not use any type of interest approach or motivation technique to interest the students in the lesson he taught. The other students voiced similar comments. The great majority of vocational agriculture teachers observed by these students did not use any interest-gaining technique at the beginning of their daily lessons.

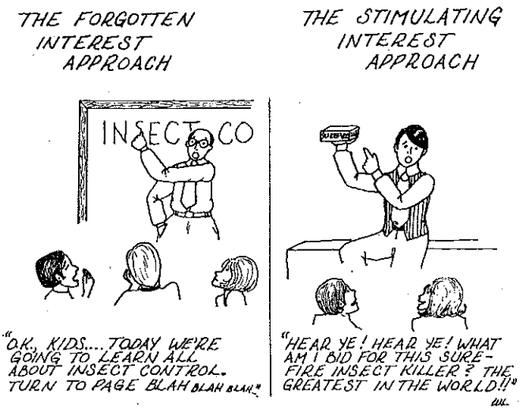
An interest approach is what the teacher does to get the students ready to learn. Many textbooks on teaching and many teacher educators advocate using an interest approach. They agree that learning occurs best when the student is interested in the lesson. Research by McGeoch[1], Thorndike[2], and others has shown that learning occurs best when students are properly motivated. In our own teaching experience, many of us can recall lessons that really "clicked" because we were able to capture the students' interest in what was being taught. Unfortunately, credit is often not given to the stimulating interest approach which more than likely made these lessons successful.

If the students learn more with good interest approaches and instruction is improved, then why do many teachers still fail to include interest approaches in their daily lessons? There are several misconceptions about interest approaches that prevent many teachers from using them. One misconception is: the interest approach is an optional part of the lesson. It is something above and beyond what a teacher must do. Like icing on the cake—it's nice, but not vital. This belief, however, is incorrect. The interest approach must be an integral part of each lesson. It contributes as much and possibly more to the success of a lesson than any other part of the lesson. Teaching any kind of lesson without first using an interest-gaining technique is an unpardonable act.

A second misconception concerning the interest approach: it is a gimmick or some type of stunt and often involves a considerable amount of time and talent to prepare. Nothing could be further from the truth. Many interest-gaining techniques are simple and require little preparation as will be illustrated in this article.

Types of Interest Approaches

A simple type of interest approach utilizes photographs or real specimens. One can have several pictures of livestock, a few pots of flowers, an assortment of tools, or whatever it is that stimulates interest in what will be taught. Simply ask the students to identify the specimen depicted or to choose the most desirable ones. This should lead right into the lesson to be taught. It is so simple and requires so little effort that every teacher could do this, yet many teachers do not use these techniques.



Another simple interest approach involves personal stories, magazine articles, or newspaper articles. Teachers should be on the lookout for interesting stories or articles that will tie into what they are teaching. A farm magazine article about a new breed of cattle, a newspaper story about a farm accident, or true situations that the teacher has observed are good ways to start a lesson.

A type of interest approach similar to the previous one uses the students' situation and experiences. The teacher can ask the students to relate the experiences from their occupational experience and tie his teaching into their concerns and problems.

Another type of interest approach could be termed a gimmick. This type of interest approach generally uses some type of prop. To start a lesson on insect control, one teacher tried to auction off a box of "Sure-Fire Insect Killer." He made extravagant claims about how effective this product was. Finally he revealed the contents of the box. Inside were two small blocks of wood. The instructions were to lay the insect on one block of wood and smack it with the other block of wood. This approach led into an interesting lesson on insect control. Other gimmicks which have been used are records on a barn door or in a shoe box to explain record keeping, and a small bed with seeds placed in it to interest students in seed bed preparation. These types of approaches require some effort to prepare, but can be highly effective.

(Concluded on page 139)

[1] J. A. McGeoch, *Psychology of Human Learning*, New York, N.Y., Longmans, Green and Company, 1942.
[2] E. L. Thorndike, *The Fundamentals of Learning*, New York: Bureau of Publications, Teachers College, Columbia University, 1932.

IMPROVING INTRODUCTORY INSTRUCTION

Nathan Moore
and
Chester Crandell
Teachers of Vo-Ag
Mesa, Arizona

Nathan Moore

Chester Crandell

Ever attend an introductory college class in some pure science, e.g. chemistry or botany, and find yourself progressively becoming more "tuned out" as the semester advanced? Of course, this situation could never happen in one of our classrooms, or could it? Perhaps now is an ideal time to turn the finger of evaluation on ourselves and ask, does the basic vocational agriculture course we teach enthuse tomorrow's agriculturists or does its non-practical, non-vocational nature predispose the learning process to failure?

We at Westwood High School are attempting to overcome the apathy which might prevent able students from becoming actively engaged in one of the five major courses of study for which we train. Upon entering our program, a student and his parents are visited during the summer preceding his freshman year to explain the five occupational clusters: agricultural sales and service, agricultural mechanics, ornamental horticulture, conservation and natural resources, and agricultural production. A freshman makes a tentative career choice which allows his course of study to be constructed to best meet his needs and interests. An open house for parents is held in August in honor of the incoming freshman and his parents, and to acquaint these individuals more fully with our facilities and the FFA.

Aside from the traditional methods of motivating beginning students, e.g. field trips, visual aids, resource speakers, etc., we have incorporated the use of a small land laboratory for each of the three existing junior feeder schools. Utilizing the full 350 growing days of Mesa, Arizona, students benefit by growing two vegetable gardens, a flower garden, and raising rabbits and dairy calves annually.

An incoming freshman can expect to start studying basic soil texture and composition on the second day of school in September. By the fifth day he has been shown, not simply read or been told, the various methods of preparing a seedbed on site. Since irrigation is a must in our area, several systems are studies initially, and throughout the year students actually irrigate their own plots or rows.

By the seventh or eighth day, the fall garden is planted, and the students are quite eager to study the growth and development of the mustard, beets, swiss chard, carrots, spinach, squash, radishes, head lettuce, beans, peas, and other vegetables. Want to make the study of leaf functions, for instance, more alluring? Use a field specimen grown by the students, and talk about it in the field. We spend approximately 40 percent of our instructional time on the land laboratory and in the greenhouse discussing identification, economic value, habitats, and eradication and control of weeds and insects.

We have found that determining the texture of soil found just outside the classroom and studying its various other chemical and physical properties is much longer lasting because the students can readily identify with those things that they can see close at hand. On and on, the "doing approach" goes with insect and weed mounting, periodic irrigations, fertilizing, weed and insect control, planting, and harvesting the fall gardens. A separate spring garden is also planted in late February to offer a variety of experience.

We have designated a small section of our land laboratory facility as the animal laboratory. With suckling dairy calves bought at three days of age in early October, we make the study of animal nutrition, livestock health and housing, and even livestock selection much more vocational than simply lecturing about the subjects in class. For example, calf weights are taken periodically and students mix feed and care for calves from arrival time in October through weaning and on to sale time in May. The students also experience castrating, dehorning, ear tagging, weaning, controlling internal and external parasites and diseases, balancing rations, and marketing as part of the "doing" phase of their classwork. In fact, time has shown that the practical, hands-on experience of the land and animal laboratories so motivates the students that they frequently voluntarily work on weekends, holidays, and summers for additional training.

Our introductory agricultural mechanics is set up as a separate sophomore course because of the nature of our school system. However, freshmen are involved with the safety, general maintenance, and operation of rotary tillers as part of their course work.

We at Westwood High School have found that the best way to motivate our students toward learning is to use the "hands-on" approach, the time honored FFA way of "Learn by Doing." Students are not going to learn by what we tell them, they are going to learn by what we get them to do; and there is no better time to start this trend than in the freshman year. ◆◆◆

Teaching for a Change in Attitude: VALUES CLARIFICATION

William B. Dreischmeier
Agribusiness Instructor
Middleton, Wisconsin

The vocational agriculture profession with its philosophy of "hands-on" learning and "learning by doing" has much to be proud of in its educational success. These teaching methods have been successful in facilitating learning in both the cognitive and psychomotor behavior domains. It seems, however, that teachers may have been less effective in an equally important domain—the affective domain which deals with feelings, opinions and values.

Students often can relate to the vo-ag teacher in ways that allow them to bring problems to the teacher that they would not discuss with anyone else associated with the school. This definitely contributes to the students' affective development. Yet there is evidence that teachers need to do much more to help students in the process of value development.

A good example of this need is the lack of widespread adoption of programs advocated by the Soil Conservation Service. The S.C.S. was organized in 1935. Farmers quickly adopted those practices, such as strip cropping, from which they could derive some economic advantage in the near future. Other important ideas like stream stabilization were not adopted unless a major part of the cost was paid by the government, and then many of the farmers refused to participate unless the work was done for them. This shows a clear lack of value committment to conservation practices The farmers and their sons have the cognitive knowledge of the importance of conservation practices, but the teaching stopped before the value level was reached. Consequently, the knowledge has not been internalized, into the farmer's values, and he accepts only those practices which promise immediate economic benefits.

In more general terms, we all know that we are living in a rapidly changing society and working in one of the most rapidly changing disciplines in our society. Things that we teach this year may be obsolete two years from now. However, helping students develop a clear set of workable, flexible values is a contribution we teachers can make that will be of lifelong benefit to our students. I believe that to teach our own traditional values is a mistake in this rapidly changing society. Instead we must show students how to form their own values—ones that can be altered as new information and societal changes dictate new ways of looking at things.

Carl Rogers (1969, pp.239-257) captures what I believe to be the essence of the way traditional values are impressed on youth as well as the consequence of this action. From infancy children learn what behavior their parents value as "good" or reject as "bad." They react according to these values and adopt them as their own without analysis. Rogers refers to this as "introjection" of values. He maintains that throughout the child's life more and more values are introjected into the youth. Not only are some of these invalid for the changing environment in which the child must live, but by definition of the word "introjection," the child does not know how he came to hold these values.

Rogers feels that most adults retain this introjected value system throughout their lives. Serious problems arise when the adult's experiences supply evidence contradictory to his introjected values. Rogers says (p. 246),

> Because these conceptions (values) are not open to testing in experience, he must hold them in a rigid and unchanging fashion. The alternative would be a collapse of his values. Hence his values are 'right'—like the laws of the Medes and the Persians which changeth not. Because they are untestable, there is no ready way of solving contradictions. If he has taken from the community the conception that money is the *summum bonum* and from the church the conception that love of one's neighbor is the highest value, he has no way of discovering which has more value for *him*.

The antithesis of this is the valuing process of a "mature person." The mature person has values based on his own experiences. This valuing process is fluid and flexible. The mature person, according to Rogers, is secure in his valuing process and, because his values are always changing, he is able to think about a new idea and accept or reject it using his experiences as the criteria.

If we agree that teachers should be involved with students' affective development as well as cognitive and psychomotor development, the question of how to begin arises. Most teachers have had little or no training in dealing with affective learning. What is needed is a teaching method that allows a teacher to begin slowly and develop confidence in dealing with matters as he progresses. Louis Raths (1966) and his graduate students have dealt with this problem and have proposed some workable answers.

In their book *Values and Teaching: Working with Values in Teaching* (1966) Raths' group states that it is much more important to help students develop their "valuing process" than to be concerned with the content of students' values. They refer to the process of helping students deal with their value development as "value clarification." The book suggests a number of strategies that can be used on varying levels of intensity. Generally the strategy poses a hypothetical or real situation which requires the student to make choices based on his values. This helps the student to clarify his own values and understand why he holds them. The authors refer to the strategies as practical suggestions that the teacher can begin using "next Monday morning."

(Continued on next page)

Agricultural Mechanics Teaching Simplified

David R. Grim
Vocational Agriculture Instructor
Hampton, Arkansas

Agricultural Mechanics is an essential part of the curriculum in Vocational Agriculture, and various instructional methods have been attempted with equally varying results. Our approach to teaching Agricultural Mechanics has been developed and tested by this teacher over a period of years and seems to be the best suited for our situation here at Hampton.

Shop Lay-out

The shop is divided into 14 self-contained learning centers or areas: 1) Sketching and Drawing, 2) Hand Tool Woodworking, 3) Power Woodworking Machines, 4) Tool Sharpening, 5) Cold Metal, 6) Sheet Metal, 7) Plumbing, 8) Gas Welding, 9) Arc Welding, 10) Concrete and Masonry, 11) Surveying, 12) Small Gas Engines; 13) Painting and Finishing and 14) Electricity.

Each area is equipped with: 1) a tool cabinet containing the necessary hand tools to complete the designated skills in the area, 2) workbench, 3) bulletin board for progress charts, instructions for completing skills and occupations using these skills, 4) reference shelf which contains the necessary reference books, filmstrips, and a Study-mate filmstrip projector for completion of an individual study guide on information related to the skills in the area, and 5) clean-up tools and protective clothing.

Method of Instruction

First-year agriculture students are briefly introduced to the areas using the following outline: 1) Name of area and reason for location, 2) Skills to be developed in the area, 3) Jobs using these skills, 4) Color scheme for the area, 5) References and teaching aids, 6) Location of supplies needed to accomplish skills, 7) Tools, equipment and accessories, 8) Special safety factors for the area, and 9) Demonstration or explanation of the skills to be accomplished in the area.

All 14 areas are briefly introduced using about five class periods, then students begin work in the areas, two students per area. Students begin work in the areas by first completing an individual study guide on information related to the skills they will be doing. Upon completion of the study guide, these are turned in for grading and students begin doing the designated skills in the area. Each skill is completed to the instructor's satisfaction and posted on the progress chart which is displayed on the area bulletin board. Upon completion of all the designated skills in the area, the corrected study guide is returned to the student to prepare for a quiz over the area just completed. Grading is based on: 1) study guide, 2) skill completion and progress, and 3) quiz on study guide and skills. Students work at their own individual rate and rotate around the 14 areas as each is completed. Students are responsible for cleaning up their own area at the end of the class period. Brooms and dust brushes are located in each area for this purpose. Each area also has the necessary protective goggles and clothing (aprons or coveralls) for doing the skills in the area.

Second year students follow the same procedure except they do not require introduction to the areas. Skills and study guides are progessive in nature. Example:

ARC WELDING I

Study Guide—Arc Welding Process, Equipment, and Safety.

Skills—Set up equipment for operation, strike arcs and run beads, make a butt weld in flat position.

ARC WELDING II

Study Guide—Flat Position Welding Joints, Arc Cutting, and Out-of-Position welding.

Skills—Joint welds in flat position, arc cutting, and horizontal butt weld.

Agricultural Mechanics is continued in Agriculture III and IV. Students follow the same procedure while working in the areas, but some group instruction is utilized for specific areas of interest, especially electricity and small gas engines. ◆◆◆

(Dreischmeier—from page 129)
The tremendous advantage of using these value clarification strategies is that the teacher can try them without the risks inherent in attempting drastic changes. They make it possible for the teacher to grow with the students as he becomes more comfortable and confident in dealing with value questions. With practice, a supportive atmosphere develops that allows the class to deal with increasingly complex and sensitive issues.

Two additional books based on Raths' ideas have been published. The first, *Values Clarification* (Simon, Howe, and Kirschenbaum, 1972), is a collection of 79 additional values clarification strategies. The most recent of the series is titled *Clarification of Values Through Subject Matter* (Harmin, Kirschenbaum, and Simon, 1973,). This book suggests that there are three ways to use value clarification techniques: 1) in separate value clarification classes; 2) in regular classes separate from normal subject matter; and 3) as an integral dimension of the subject matter. In supporting the latter approach the authors present a tri-level model for teaching. This model suggests that teachers should begin with facts

(Concluded on page 136)

IMPROVING LEARNING THROUGH FFA AWARDS PROGRAM

Robert A. Seefeldt, Manager
FFA Contests and Awards
National FFA Center


Bob Seefeldt

What is this thing called competition? Webster gives the following definitions: "(1) the act or process of competition, (2) a contest between rivals and (3) the effort of two or more parties to secure the business of a third party by the offer of the most favorable terms."

Competition has long been a part of the FFA. In fact, many people who were associated with the FFA when it was first organized say that the FFA was actually built on the foundation of competition.

The type of competition that we in the FFA have known all of these years and which was perpetuated by the various activities funded by the National FFA Foundation since 1944 fall within the second definition of completion offered by Webster—"A contest between rivals." This type of competition has proven to be a valuable tool for many FFA members. However, as good as this type of competition has been for those FFA members who have been capable of participating, there are many other members who are not encouraged or motivated to become involved by these activities.

We often forget that other than age, size of stature, less education and personal experience, FFA members are not much different than the adults who are employed to motivate and teach them. There are many competitive areas in everyday life which offer great and exciting rewards for adults. But they will choose not to become involved simply because they know they have little or no chance of coming out a winner. Regardless of the rewards, only the most foolhardy of us would ever accept the challenge of stepping in the ring to compete with a world boxing champion. Yet in many ways expecting the average FFA member to become excited and motivated to work towards the goal of someday becoming a state, regional or national winner in some particular activity funded by the National FFA Foundation sets up the exact same degree of motivation. How can we expect an FFA member to be motivated to achieve one of these seemingly unreachable goals when he can see any number of fellow FFA members in his local chapter who has an equal or better chance of succeeding?

Webster's first definition of competition is "the act or process of competing." This is an activity that all FFA members should have the opportunity to experience. However, for this competitive activity to be a truly significant educational experience, it is necessary and vital that each FFA member first learns the art of competing with himself. Competition is an activity that cannot be learned; it must be experienced firsthand by actual participation. Since competition is a part of everyone's way of life and is a part of the world of work, it is important that we all know how to compete with ourselves regardless of our choice of life work. Learning how to compete with ourselves is just as much a part of the education process as learning how to compete with our peers. The world of work teaches us how to compete with other people, but unless we can successfully challenge ourselves we will never be in position to compete successfully with other people.

An awards program needs to be more than a method of selecting an individual or a team winner at a particular level of participation. To make an award program an educationally sound program it needs to be an activity that is both rewarding to the individual at the time he is participating as well as to have a positive effect on his life in later years. It is not necessary to have an award or recognition program to teach or to provide students with experiences in not achieving. For many students, this type of experience is too prevalent and too real, and is causing the poor attitudes and poor performances that the FFA is trying to eliminate with an awards and recognition program.

Competition between those students who have a more than even chance of success is a rewarding experience and should be continued. But the question is, is this the only competitive experience in which we in education should be engaged? What about those students who, for many reasons which may be uncontrollable by them, cannot have a successful educational competitive experience? Do we somehow establish in these students an undesirable attitude or behavior that would not be established if the awards and recognition program were not a part of the instructional program in the first place? Are the present methods of employing award and recognition programs designed to be more gratifying and rewarding for the adult who just may happen to have the winning student at a given level of participation enrolled in his class? Can we say we believe that the present award and recognition programs are truly an integral part of the instructional program for all students?

For many students the present award and recognition programs appear to be "baited hooks" that are designed to attract those students that are already properly motivated and are successful. Picking one winner at a particular level of competition may be exciting and rewarding for that one student, but is it educationally sound? Can we maintain this degree of excitement and modify the present award programs so that they are more meaningful and challeng-

(Continued on page 136)

A MODEL FOR EXPANDING AREAS OF LEARNING

Alfred J. Mannebach
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Al Mannebach

Teachers of vocational agriculture are interested in facilitating the learning of their students by improving teaching. They want to focus on those aspects of instruction which will help students become self-sufficient, employable, and good citizens. They want the results of their instruction not only to prepare students to make a living but also to help students become prepared to live a good life.

The effective teachers are those who recognize the real purpose and meaning of secondary education. They attempt to help their students attain the objectives of secondary education established in 1938 by the Education Policies Commission of the National Education Association.[1] The EPC classified the objectives into four categories: self-realization, human relationships, economic efficiency, and civic responsibility. Attempts to help each student attain objectives in each of these categories constitute worthy efforts on the part of vocational agriculture teachers.

With the advent and emphasis on career education in the early 1970's, there emerged a refinement of educational objectives related to the career development of students. Through the school-based Comprehensive Career Education Model developed by personnel from the Center for Vocational and Technical Education at The Ohio State University, eight elements and eight expected outcomes[2] of career education were identified. These elements and expected outcomes should be vital parts of a current vocational agriculture program today. The elements, expected outcomes, and a description of terms are presented in Figure 1.

ELEMENTS AND EXPECTED OUTCOMES OF CAREER EDUCATION IN AGRICULTURE

ELEMENTS	EXPECTED OUTCOMES
Self Awareness —Knows self, what he hopes to become.	Self Identity —Knows himself and has developed a value system.
Career Awareness —Understands a broad range of careers, and how they serve him, the community, and society.	Career Identity —Selects and becomes established in a role or roles within the world of work.
Appreciations, Attitudes —Develops a value system toward his own choice and that of others.	Self-Social Fulfillment —Develops an appreciation of his own role and the role of others.
Economic Awareness —Perceives processes of production, distribution and consumption.	Economic Understanding —Solves personal and social problems in an economic environment.
Decision-Making —Understands decision-making process.	Career Decision —Develops a plan for immediate, intermediate and long range career development.
Skill Awareness —Understands skills needed by workers in certain job roles.	Employment Skills —Develops competence in performance of job skills.
Employable Skills —Searches for, locates and obtains a job.	Career Placement —Obtains employment in line with career goals.
Educational Awareness —Recognizes the need for specific education for career roles.	Educational Identity —Develops ability to select educational avenues for pursuit of career goals.

The elements listed in Figure 1 are assumed to lead to certain identified outcomes. For example, *Self Awareness,* which is the student's knowledge of himself, who he is and what he hopes to become, is assumed to lead to his eventual *Self Identity,* where he knows himself and has developed a well integrated value system. Likewise, the other elements of career education and their expected outcomes include *Career Awareness,* which leads to *Career Identity; Appreciations and Attitudes,* which lead to *Self and Social Fulfillment; Decision-Making Skills,* which lead to *Career Decisions; Economic Awareness,* which leads to *Employment Skills; Employable Skills,* which lead to *Career Placement;* and *Educational Awareness,* which leads to *Educational Identity.*

Given this model, what implications arise for better teaching and learning? How can we consciously integrate into our already overcrowded curriculum each of these elements which are deemed so important to the career development of the students we are teaching? How can we focus on the development of self-identity, career identity, and career decisions when students come to us with little self or career awareness or few decision making skills? How can we help our students achieve economic understanding when they have little or no economic awareness? These are the challenges to teachers which the model creates.

The answer to these questions, of course, is that we must start where the learner is and help each student grow and develop in each of the eight elements identified. Teachers must be aware of the complexity of the teaching process, the implications of the material taught for each student, and must be

(Concluded on page 138)

CAREER EDUCATION In Owatonna Schools

Donald Barber, NVATA Region III
Career Orientation Award Winner
Owatonna, Minnesota

Don Barber

In Owatonna's school district there are six elementary schools, two junior high's and a public and parochial high school with a total of over 6000 students attending.

About four years ago the agriculture department at Owatonna High School began presenting career education type programs in the elementary schools. Agriculture students in Donald Barber's senior ag classes went to elementary schools in groups of three or four to put on programs on agribusiness careers. With the success of these programs, Barber worked with school district administrators in writing a proposal for Federal funding as a Career Education exemplary project. Owatonna was one of eight schools in Minnesota to receive Federal monies to pilot the career program for three years. Barber was named project director for the entire Owatonna school system, K-12, in addition to his duties as vo-ag instructor.

The need for a career education program was established after studying some local and Minnesota statistics. Owatonna had been a traditional, strong academic, school system with a 2 percent dropout rate. About 65 percent of the graduating class enrolled in a college. College research showed about 50 percent of those beginning college dropped out before completion. Applying those figures to Owatonna meant about 60-70 percent of our students were entering the world of work before completing training for a skill or trade.

There are 34 internationally known industries in Owatonna. A large majority of the labor force requires less than college level of training. There are five vocational-technical schools within 35 miles of Owatonna. However, few Owatonna students attended these schools. With these facts, our school proceeded to design a career education program, using many of Dr. Sidney Marland's suggestions.

During the three years of the funded program teacher in-service training has been emphasized. All elementary teachers visited local industries to see first hand the ways in which their subject matter could relate to the individual student and his career choice. After teachers returned from tours they were asked to write career units that could be integrated into their present curriculum. Units were designed to emphasize the world of work, attitudes, self-awareness, dignity of workers, etc.

During the summer of 1972, a curriculum writing group of six elementary teachers wrote 50 or more career awareness units for each grade level to the sixth grade that fit the existing curriculum. All elementary teachers use the guides and supplement them with their own ideas. The guide was selected by the Minnesota State Department of Education as the model they wanted to print for distribution to all elementary schools throughout Minnesota and make it available for sale nationwide. Over 2500 copies have been distributed to date.

In the summer of 1973, a group of three teachers developed a community resource guide for all teachers, K-12. The guide included a list of companies, businesses, and industries that were willing to accept tour groups of students or that had resource people available to come to the school and speak to a class. A list of resource speakers was also compiled along with their major area of work and phone number.

Also in 1973 the writer arranged with Mankato State College to teach a nine-credit, graduate course in Owatonna on career education. A core group of 13 junior and senior high teachers completed the course. Some traveled extensively to other school districts making presentations on career education. They also provided in-service training for fellow faculty members.

Besides directing the career education work in the Owatonna School System, the writer also incorporated career education and awareness into all his vocational agriculture classes. He has continued to use groups of FFA members to conduct career programs in agriculture for elementary pupils.

In the fall of 1973, a Career Resource Center was established at the senior high school with a full-time aide. The career center helps junior and senior high school teachers and students in finding career related materials. The aide also schedules resource persons for classroom teachers, arranges career day programs, and schedules field trips for various groups.

Barber has worked extensively with the Explorer Scout program in setting up career explorer posts in the community for interested students. All high school students were surveyed for their first and second career choices. Students were then invited to participate in an explorers group. Career Explorer posts have been started in the areas of veterinary medicine, health services, insurance, art, auto body and mechanics, machine shop and engineering, and telephone and communications fields. Over 125 boys and girls are involved in these programs.

Career materials worth $20,000 have been developed and purchased for use by teachers during the past three years. In-service education of all teachers is a continual process.

Evaluation is an important part of any program. The Owatonna program has been evaluated since its inception by the Research Coordinating Unit of the University of Minnesota. All teachers kept a log of career activities used each week. Monthly computer

(Concluded on page 136)

CAREER EDUCATION: Which Job For You?

LaVar Godfrey
NVATA Region I Career
Orientation Award Winner
Kaysville, Utah

The primary purpose of Vocational Agriculture is to prepare students for careers in agriculture. Before the preparation process can take place the student should identify the career for which that preparation is to be made.

Need For Career Orientation

Opportunities for agricultural students in our area to become engaged in farming as an occupation are limited. This problem emphasizes the importance of providing career orientation to all students in the agriculture program and others in the school that they might envision a job for themselves in the agricultural industry in positions other than farming and ranching.

The availability of several good work stations and employers willing to cooperate in a training program accentuates the need for offering career education in my classes. The majority of the students do not live on farms which dictates the responsibility I have to provide career instruction that meets the needs of both farm and non-farm youth.

Groups Involved

All-Day Students

We serve about 160 students daily in our vocational agriculture classes. Career emphasis is with the beginning students in two Basic Agriculture classes on the 9th and 10th grade levels. Additional career orientation is provided in the specialized classes specifically related to the individual student's choice.

Of the students enrolled in our two-man department the past school year, 31 were involved in a supervised work experience program of farm placement and 59 had off-farm agricultural jobs. Our school serves a suburban area that provides a number of job stations for on-the-job training. Some of the students travel to neighboring states to work on farms and ranches during the summer.

The students in Basic Agriculture classes are involved in a program of career exploration which covers the broad area of the 500 plus agricultural careers. It is approached on a job-cluster basis with the problem posed to each student, "Which Job For You?" Job clusters are as follows:
Farm Services, Farm Supplies, Farm Machinery, Government Services, Animal Industry, Crops, Ornamental Horticulture and Natural Resources. A unit on human relations is also conducted.

Following the career exploration each student must identify two careers in which he is most interested and research the occupation to prepare a career brief on each one.

As our area has become more urbanized, some of our students have turned to jobs in farming and ranching and agriculturally related jobs for work experience rather than the traditional production project at the home farm. Usually a few students locate their own jobs, but each year a number of others are placed by teachers on suitable job stations in a variety of jobs ranging from farm laborers to greenhouse workers.

Career Interview Project

This program identifies the first and second choice careers of the entire Junior Class through the counseling department of the school. The 30 students that selected careers in any phase of agriculture or agriculturally related areas were assigned to me as a Voluntary Career Interview Project Supervisor. It was my responsibility to arrange special career interviews for each student with a qualified person in the various career choices.

The career interview project consists of three phases:

- Career interviews with a qualified person in a specific occupation
- Group meetings with specialists
- On-the-job observation

Last year, arrangements were made for career interviews for the number of students listed in the following areas:

Veterinarian	8	Farming	3
Animal Technician	2	Ranching	2
Forestry	7	Florist	1
Wildlife Management	2		

Ecology Club

An Ecology Club was formed to provide interested students an opportunity to survey the ecological needs of our school service area. It was my privilege to serve as advisor to the group for twelve weekly meetings that were planned by the enrollees. Career orientation was a valuable by-product of exposure to several consultants employed in various ecological areas.

As the ecological survey was made by the club members, they were exposed to a number of careers through the use of people employed in the areas of water treatment and purification, sewage treatment, garbage disposal—sanitary landfill and incinerator types, forestry, conservation, park service and wildlife resources.

Career Mini-Course

A new dimension was added to my program this past spring. The entire school participated in a career education project with each teacher developing a four-session mini-course on some phase of career orientation. It was a natural for me to offer a course called "Agriculture Is More Than Farming" to non-agriculture students.

The developmental objective for the mini-course was: Individuals will develop a growing awareness of career opportunities throughout the educational system. The behavioral objective was: Each student will list fifteen careers in each of the eight job clus-

(Concluded on page 136)

CAREER EDUCATION Helps Vo-Ag Get Started In City Schools

Jim Knight, NVATA Region II
Career Orientation Award Winner
Golden, Colorado

In recent years education has gone through many changes. One of the most recent trends that has had a tremendous impact on our profession is "career education." While there is a wide range of definitions of career education and philosophies on how it should function, one thing appears clear, vocational education and career education are not synonomous. Vocational education and more specifically vocational agriculture should be the capstone for career education in agriculture. Career education could be almost literally translated as relevant education. An example of this might be where an elementary math teacher no longer simply has students do the problems but relates the problems to real life situations and jobs or careers where such information might be valuable. To implement career education completely would not necessarily involve a great deal of curriculum overhaul or very much additional staffing. It is simply a concept that teachers need to accept and implement to make education more meaningful.

At Golden Senior High School in Golden, Colorado, we introduced vocational agriculture only two years ago. This was the only vocational agriculture program in Jefferson County at that time. Starting such a program drew a great deal of criticism because we were located in an urban area. People knew there wasn't much farming and ranching in the area and predicted the program would fail. However, with a closer look, it becomes obvious why the program has been successful. Colorado agricultural statistics show that over 20 percent of the jobs in our state are in some area of agriculture. Some large agricultural businesses are based in Denver, and many smaller industries provide supplies and services for production agriculture. At the same time there are numerous outlets for the products of farmers and ranchers in the metropolitan area.

The placement of our graduates in industry continues to be good and our program has grown. Enrollment for 1974-75 is approximately 100 students. The criticism has died, and people have taken a new look at the presence of vocational agriculture in the urban areas of Colorado, especially Denver.

Developing a new program, especially in an urban area, brings with it many problems. One of the most serious problems is the tremendous lack of understanding concerning what agriculture involves on a total scale. Most people think of agriculture as strictly farming and ranching. While farming and ranching are obviously the roots from which all other agricultural industries grow, they are not the total entity of agriculture.

The best way to correct this misconception of agriculture is to develop a strong career education program. Initially, however, instruction must be offered to vocational agriculture students in order that the students can make a logical career choice. At Golden, we have undertaken several approaches to help our students establish a more realistic occupational objective in agriculture. All students in the program are visited prior to the beginning of school each year. This visit serves a multiplicity of purposes; however, a major reason for this visit is to acquaint the students with the type of career opportunities available in agriculture. During the school year, each student does a research study on his chosen career. We work with the local agricultural industries in getting industry personnel to tell their story to our students. Such people included a farmer, a rancher, a veterinarian, a banker, a wildlife specialist, a forester, a machinery construction manager, and others. In addition, training sites were developed with many of these businesses to help involve students in their chosen career.

We have offered our services to the elementary and junior high schools in the area to coordinate field trips into agricultural industries and to act as resource personnel. While this is not that difficult to accomplish, it can be effective because it saves the junior high and elementary teachers some work and provides a service they can utilize. In addition, we visit with students at the junior high schools to explain what is involved in agriculture and how vocational agriculture fits into the total educational picture.

In the development of our efforts in career orientation, we tried to involve as many different groups and age levels as possible. We did this with the belief that the more people we could contact, the better prepared students would be when they selected some phase of agriculture as a career. We talked at the civic organizations, the junior highs, the PTA, and other places in telling our story about the careers in agriculture.

Of course, the FFA has played a real and important role in this effort. Constructing displays, speaking at community functions, speaking at schools, and working with local businessmen, among other activities, have been the major way in which our youth organization has helped teach others and themselves about the careers in agriculture.

The supervised agriculture program section of the program of activities provided for the identification of career opportunities in our area. This was done in cooperation with the community service committee. Three students were placed with the Colorado State Forest Service, and the FFA made arrangements to pay the students' salary.

As we continue to develop our career orientation program at Golden, the effectiveness of our approach becomes more obvious. We are getting greater involvement from our young farmer and

(Concluded on next page)

(Barber—from page 133)
printouts were returned to teachers and average for each grade level was returned to the project director. It was found the average teacher used 23 career activities during the year.

All Owatonna elementary students were tested and compared to students from neighboring schools where no career program existed. Results showed Owatonna elementary students scored higher on cognative career tests than did students in the control schools.

An independent third party evaluator found career education to have a snowballing effect throughout the school system. Verbal evaluation by parents and business and industry leaders has been positive.

Barber continues to emphasize the need or reason for knowing the subject matter he covers in agriculture. Likewise, all other teachers in the school system are being pursuaded to make whatever theory, therom, or concept they teach meaningful to the students' career or life in society ◆◆◆

(Godfrey—from page 134)
ters of Agribusiness and Natural Resources using the Cal Poly Careers set as instructional material.

Appraisal of the Program

The career instruction provided for the all-day students regarding job exploration meets the needs of beginning students. The additional training provided in specialized classes enhances the position of students who are able to definitely identify a career.

Work experience is the heart of the whole program wherein students receive hands-on-experience which is more likely to help each student "nail down" a prospective career.

The unit dealing with human relations also makes a significant contribution to each student, especially the ones who are employed at the time of instruction or shortly thereafter.

The career interview project has been an excellent means of reaching the students of the school who are not enrolled in our agriculture program. Several students have become interested enough to get involved in supervised work experience programs and to sign up for agriculture classes.

The Ecology Club has also attracted students interested in natural resources. Hands-on-experiences have helped participants to make positive decisions regarding careers in this area.

The Mini Course on agriculturally related jobs is taught to twenty students who would likely not have heard about them otherwise.

In the final analysis some students benefit more than others, but no matter how many carry on in the job they have selected, all of them have participated in the important process of decision making. To help a student explore a career and decide that he does not want to pursue the job after learning more about it contributes to the happiness and well being of that person as much as the one who is able to identify his life's work. ◆◆◆

(Knight—from page 135)
adult programs; we are getting more students enrolling in vocational agriculture who are better informed and have a better idea of where they are headed in the future. In addition, our program has grown from one teacher to three teachers and a half-time aide.

We have not solved all of the problems by orienting students to careers in agriculture, but we have undertaken activities that are helping in this effort and are making vocational agriculture more meaningful and more accountable.

Until the total educational community comes to the realization of the importance of career education, Vocational Agriculture and all of Vocational Education must take the leadership role in providing this much needed service to all of our students. ◆◆◆

(Dreischmeier—from page 130)
to teach concepts, and finally make those facts and concepts meaningful to students by dealing with related values.

Certainly I am not advocating value clarification as a panacea for all the ills of our society. It is my feeling, however, that we must begin to help students deal with their affective development. Vo-ag teachers traditionally have had a closer relationship with their students than most teachers enjoy. For this reason I am convinced that vo-ag teachers should attempt to work on value clarification with their students. Further, I believe that teacher training institutions must begin to prepare future teachers for affective teaching as well as cognitive and psychomotor teaching.

My experience would indicate that teachers who decide to deal with value clarification can expect many side benefits for their effort. Often students who were previously unmotivated, chronic dissenters, apathetic or disruptive show a remarkable change in attitude. Students find new direction and the teaching experience becomes much more pleasant and satisfying.

Obviously much remains to be learned about helping students form values, but the Raths approach is an excellent start in the right direction.

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(Seefeldt—from page 131)
ing for more students, and thus become truly incentive?

The question then is how do we maximize the effective value of an awards and recognition program for as many students as possible when under the present system many students are asking, "Why should I, as an FFA member, want to participate in an activity that will require an additional effort on my part but in which I know I have little or no chance of succeeding?" The answer is to orient these valuable competitive programs to the classroom instructional program in such a manner that each student is competing with himself for an award or recognition that all of his peers have the same equal opportunity to achieve if they choose to apply themselves.

(Continued on page 142)

IMPROVING TEACHING SKILL


Doug Bishop

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If we depended solely on heredity to produce vocational agriculture teachers, our recruitment efforts would need to be vastly different than they are today. A person may be born with many of the personal characteristics found in good teachers but many other essential qualities must be added through planned study, hard work, and meaningful experience.

Some educators think of teaching as an art while others argue that it is science. Regardless of the position we take, there is much evidence to support the fact that good teachers are made.

Most of our vocational agriculture teachers begin as students under the tutelage of a high school teacher. Here, they absorb general and technical knowledge as well as an attitude toward good teaching. Following this experience they enroll in a university and learn the principles and techniques of communication. Each prospective candidate participates in a student teaching program, hopefully under the direction of a dedicated cooperating teacher. Finally, the young prospect is certified and allowed to reach for the bottom rung on the teaching ladder. Every advancement he makes up this ladder toward establishing himself as a master teacher is predicated upon learning he acquires in planned step-by-step fashion.

Prospective teachers can be taught many of those competencies which their job entails. The principles governing good teaching apply to a small school, a large school, or in a single- or multiple-teacher department. The conditions under which a teacher works may be radically different but this is not materially significant if the individual wants to become a teacher; it is the attitude, desire, and skill he develops that are his most essential qualities.

A teacher must realize that he has to be himself, develop his own technique, express his own talent and not attempt to follow a rigid pattern established by those under whom he studies. Thus, prospective teachers must develop themselves according to a plan that incorporates the qualities of teaching as well as any special gifts they might possess.

Learning to manage facts is equally as important as learning them in the first place.

There are many qualities contributing to the development of a good teacher, some of them are measurable and others are quite intangible. A few may be mentioned that have universal application: willingness to be flexible, ability to perceive a problem situation from the student's point of view, ability to "personalize" teaching, willingness to experiment and try new things, skill in asking questions, knowledge of subject matter and related areas, provision of well-established examination procedures, and provision for definite study helps, reflection of an appreciative attitude, use of conversational manner in teaching — informal, easy style. The good teacher is concerned with people, not things.[1] He may even be rated on the awards he receives, the contests he wins or the many other things, but in the long run it is people, his students, who bring about much of his achievements and ultimate success.

Set Goals

Preparing to be a teacher is not a once-in-a-lifetime affair. Each teacher must realize that just as technical knowledge becomes obsolete, teaching methods seem to lose their effectiveness as conditions change. The successful teacher must be in constant quest for new approaches to an age old profession.

Much of a teacher's work consists of plodding along, performing the day-to day tasks. What is often considered as some sort of intuitive brilliance by the public is really the result of a well-planned and properly executed routine daily activity. The sinews of a good teacher might well be his willingness to diligently plan even for the most mundane task.

Be Alert

While teaching others, a good teacher will continue to increase his own knowledge. He is the one who picks up new ideas, mixes them with old ideas and moves them around to fit his purposes. Thus, the good teacher avoids the "rut" into which many a teacher has stumbled.

Search for something that needs to be improved. Treat each need as a problem. What solutions have been tried and why have they fail to solve the problem? Write down all the ideas that come to mind about ways of approaching the problem, evaluate them, and throw out those that seem impractical. Learning to manage facts is equally as important as learning them in the first place.

Think Positively

A good teacher must always think positively. Negative thoughts toward teaching can be disastrous and act to inhibit those who wish to improve their teaching. The one has ceased to search for new methods and tends to lable each new idea before he tries it has seriously handicapped himself. He is

(Concluded on next page)

1. Don Hamocheck, "Characteristics of Good Teachers and Implications for Teacher Education," *Phi Delta Kappan*, February, 1969, pp. 341-344.

(Bishop—from page 137)

willing to follow precedents, thus eliminating innovativeness.

One must agree that all change is not progress. A good teacher of agriculture learns to discriminate as each new method or idea is evaluated. The thoughtful teacher working toward self-improvement has learned early that his mind is not planted immoveable on one idea.

Someone Special

Every good teacher is a decision maker, a program planner, and a person of vision. Like a manager of a factory who exercises control over a product, the teacher exercises control over students. Like the manager, the teacher is accountable for the results.

By improving his relationships with people, a good teacher will improve himself. He has empathy for the endeavors of each student, fellow teacher, parent, administrator or community citizen. As teachers, we need to allow for imperfections in others but strive to avoid them ourselves. We must develop the ability to give each student we work with the chance to develop according to his own capacity.

Develop Communication Skills

Students will work more enthusastically for a teacher who knows where he should be going and can guide his students toward a goal. Such ability on the part of the teacher breeds student solidarity.

Students are entitled to clear-cut goals and objectives in order to understand teacher expectations. Such a statement may appear superfluous, but through careful analysis it is easy to pinpoint those classes and demonstrations that are botched by ignoring this communicative principle. Hazy expressions and ambiguous explanations should be excluded from our teaching. Everyone will agree that good teaching means the difference between program success and failure.

Creating a desire among students to want to learn is a difficult task. Yet, there are some teachers who are content to drift along, year after year, in the same old teaching style. They teach for years and complain about their lack of success. They talk about self-improvement but are unwilling to pay the price in time and effort to achieve their often repeated resolution. What can you do during 1975 to improve your teaching?

(Mannebach—from page 132)

able to develop their students' proficiency in the eight elements identified as a part of the instructional program.

Following are brief suggestions of what a teacher can do to promote growth and development in each of the areas identified. Teachers of vocational agriculture are already doing an excellent job of instruction in many of these areas. The model serves primarily to draw attention to the important aspects of career development which should be integrated consciously into the instructional program.

Self awareness can be accomplished by using values clarification techniques, by inventorying student interests, abilities and aspirations, by providing for self-reports, and by having students view themselves as others see them.

Career awareness can be fostered by emphasizing, where appropriate, the career implications of the subject matter taught. In addition, career awareness can be taught in units of instruction, through interviews with persons in occupations in which students are interested, and through audiovisual aids and field trips. This concept is not new to teachers of vocational agriculture.

Appreciations and attitudes can be developed by democratic teaching and problem solving. Classroom interaction and the use of the FFA as a teaching tool can help in the development of positive attitudes and appreciations.

Economic awareness can be developed primarily by the student's involvement in the supervised occupational experience program in agriculture. Economic understanding is best taught by direct participation. Through the experience program and through financial projects undertaken by the FFA, vocational agriculture teachers have excellent tools at their disposal to teach economic concepts.

Decision making can be developed by active participation of students in problem solving, values clarification, voting, and contests. Students need help in developing these skills. They must be taught the importance and power of a decision made. They must be taught how to choose freely from alternatives; to choose after thoughtful consideration of the consequences, and to act positively and consistently with the choice made. Decision making is a generic skill needed by all students and active participation in vocational agriculture and the FFA provides students many opportunities to make decisions.

Skill awareness can be developed by having the students take skill inventories, by helping them identify new skills to be learned, and by providing through instruction and observation on the job, a realistic insight into the technical competence required for success in given agricultural occupations.

Employability skills can be developed by classroom instruction in human relations, by interviews with employers, by having employers as resource speakers in the classroom, and by active participation in the supervised occupational experience program. Employability skills are needed by all students, and a direct focus upon them is important in the improvement of instruction.

Educational awareness can be accomplished by having students define their tentative goals and aspirations, by exploring the educational requirements for success in selected occupations, and by vocational teachers emphasizing the importance of and need for proficiency in the basic skills.

The above model is designed to help teachers of vocational agriculture analyze the teaching-learning process by focusing on dimensions that are important in the total career development of the student. Many of the elements can be integrated into teaching. All of the elements won't be integrated into each unit of instruction, but as professionals, teachers of vocational agriculture will be aware of the complexity of the teaching-learning process and be able to integrate, where appropriate, many of the elements into their teaching.

Teachers of vocational agriculture should become aware of the eight elements and expected element outcomes of an up-dated program of vocational agriculture. By doing so, and by relating many of their present learning activities to the model discussed, they should be in a better position to improve their instruction by meeting a broader array of the needs of students served. ◆◆◆

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MOTIVATING STUDENTS WHO ARE LEARNING MANIPULATIVE SKILLS

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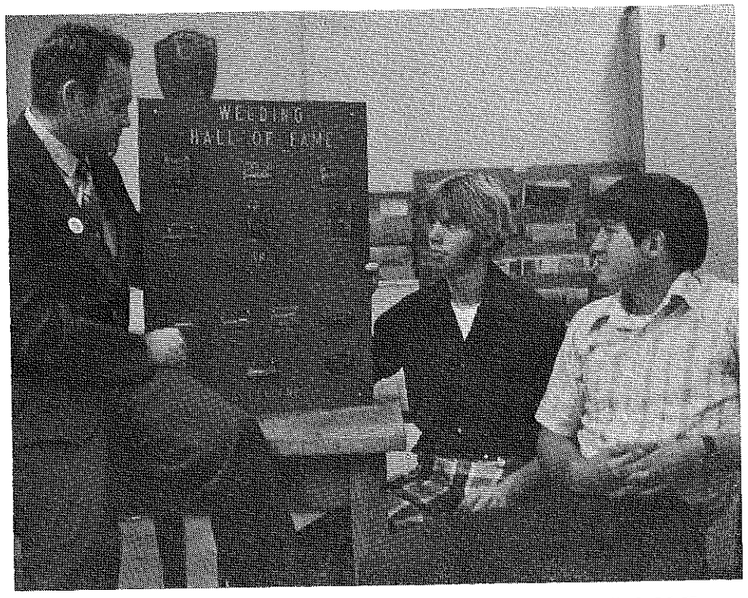
University of Idaho

There was no doubt in anyone's mind that Henry Aaron would break Babe Ruth's home run record, barring the unforeseen. This same principle has been used by Jack McHargue, the vocational agriculture teacher at Sandpoint, Idaho, to stimulate students to do better work. The system seems to work well with any skill where all students do a certain designated project or exercise to learn the proper technique.

For example, when teaching arc and acetylene welding, a display board can be designed to hold each exercise required of the students who complete the course. The best weld for each exercise is placed on the board with the student's name, and the date the weld was made is recorded on the exercise. The weld displayed continues to hold the place of honor until another student with similar training excels in making the same exercise. The student can then replace the original weld with his or her exercise properly marked and recorded.

Some rules in regard to this type of motivation can be listed as follows:

1. Display the board in a prominent place with a legend that explains why the exercises are posted.
2. Be sure the names and dates are easily read; a plastic tape labelmaker will work very well.
3. Make an occasion or happening when a weld is replaced; the students will supply the ceremony.
4. Occasionally an especially talented student, one who can perhaps do the exercise better than the instructor, will try to sweep the board. Students themselves may agree that one individual student can only replace a limited number of exercises.
5. It is not necessary to start a new board with each class; the longer an exercise holds the spotlight, the greater the honor. ◆◆◆



Left to right—Sandpoint High School vocational agriculture instructor, Jack McHargue, and students, Steve Rasor and Brian Johnson, observe the best welds ever made in their school and the names of the students who made them.

(Gary Moore—from page 127)

A demonstration is another device that can be used to gain student interest. The teacher can demonstrate how to make a terrarium, prune a shrub, or run an overhead bead. This is often more effective if a student is asked to demonstrate it first. Realizing what he needs to know to do the project correctly, the student is then ready to learn.

Often a forked road problem or multiple option problem can be used as an interest approach. An example of a forked road approach is, "Should we buy a tractor or lease a tractor?" A multiple option problem is, "Which corn variety should we plant?" These types of approaches to a lesson start the students thinking and can be used effectively to gain student interest.

Conclusion

The interest approach is a vital part of each lesson. Students will enjoy the lesson and learn more if you first get their interest. Developing an interest approach is a simple matter, yet is often neglected by teachers. Have you forgotten the interest approach? ◆◆◆

Why Teachers Quit

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Keith Mattox

Effective programs of vocational agriculture are dependent upon an adequate supply of qualified teachers. Teacher supply has not been stable. Teacher educators for many years have been trying to solve the teacher shortage problem with little success. Various programs have been initiated to recruit prospective teachers. A large percentage of these prospective teachers, once trained, enter other professions or leave after teaching for a short period of time.

Vocational agriculture teachers are similar to other teachers in that they leave the profession for which they were trained. A recent study was completed at the University of Arizona to determine what sociological, environmental, and professional factors influenced teachers of vocational agriculture to leave their profession. The study included fifty-eight (58) men who left the vocational agriculture teaching profession in Arizona between September 1, 1959 and September 1, 1972. Data were obtained from a questionnaire mailed to each former teacher.

ROLE STRESS

Many researchers have dealt in varying ways with what is referred to as "role stress." In this study, the author attempted to identify and classify role stresses and their relationship to sociological, environmental, and professional factors which influenced teachers of vocational agriculture to leave the teaching profession. Role stress, as used in the study, was defined as the tensions, strains, demands, and pressures of the vocational agriculture teaching profession.

Through a review of related studies and several discussions with personnel in the educational field at the University of Arizona, forty-five (45) sociological, environmental, and professional factors were synthesized. A reaction panel composed of eleven professors of agriculture in the College of Agriculture at the University of Arizona cooperated by placing the forty-five (45) factors into the role stress groups as follows:

I. Conflict
   1. Personality conflicts with administration
   2. Time required for FFA activities
   3. Community responsibilities
   4. Ethnic and religious factors
   5. Expected to teach subject matter areas other than agriculture
   6. Overemphasis of athletics
   7. Required extracurricular activities
   8. Too many meetings to attend as vocational agriculture teacher.
   9. Lack of administrative support and backing on decisions
   10. Lack of cooperation from Department of Agricultural Education at the land-grant college of Arizona
   11. Excessive pressures from State Supervisor

II. Inadequacy
   1. Discipline problems
   2. Dislike for adult and young farmer programs
   3. Dislike working with high school students
   4. Dislike teaching certain subject areas
   5. Contract not renewed
   6. Poor health

III. Frustration
   1. Too few teacher aids and materials available
   2. Trend toward less emphasis on vocational education in agriculture
   3. Students lacked interest
   4. Oversized classes which reduced teaching effectiveness thus increasing job dissatisfaction

IV. Dissatisfaction
   1. Long hours
   2. Inadequate salary
   3. Lack of advancement opportunities
   4. Too short summer vacations
   5. Size of community
   6. Teaching in remote area of the State

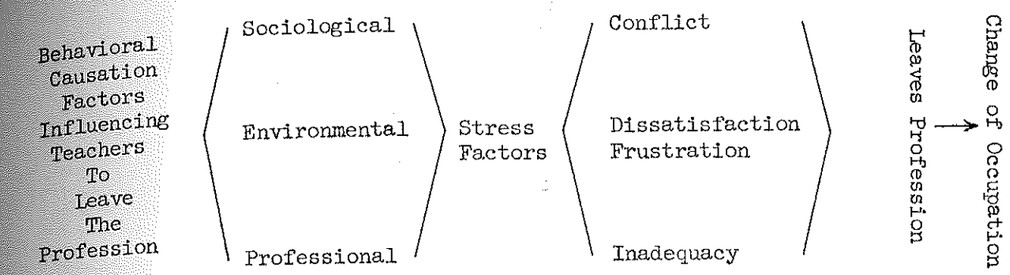
V. Conflict/Dissatisfaction
   1. Too many evening responsibilities
   2. Community attitudes toward vocational agriculture
   3. Wife not happy with vocational agriculture profession

VI. Conflict/Frustration
   1. Unable to adjust to the school schedule
   2. Submitting state reports
   3. Dislike of community standards for teachers
   4. Lack of school policy and long range goals
   5. Lack of administrative trust and support

VII. Conflict/Inadequacy
   1. Poor rapport with other teachers in system

VIII. Dissatisfaction/Inadequacy
   1. Too much preparation required for classroom teaching

Behavioral Causation Factor Model



IX. Dissatisfaction/Frustration
   1. Little or no opportunity to specialize
   2. School discontinued vocational agricultural department on a full-time basis

Five of the forty-five (45) factors were not considered a form of role stress by the reaction panel. These factors were:

1. Entered farming
2. Choice of a non-agriculture teaching position
3. Choice of another occupation outside of the teaching profession
4. Entered military service
5. Reached retirement age

Chi square values were computed on each factor to determine if it had some influence on the teacher's decision to leave the vocational agriculture teaching profession. A behavior causation factor model (see figure) was developed and utilized in identifying the causational factor and role stresses which were influential in causing teachers to leave the profession.

Teachers who left the vocational agriculture teaching profession in Arizona were placed into two tenure groups based on the number of years they taught. A teacher who had taught five or more years was considered to have tenure, whereas those who taught four or less years were classified as non-tenured teachers.

ENVIRONMENTAL FACTORS

Environmental factors, as used in the study, included all external factors and influences affecting human behavior over which the vocational agriculture teacher had no control. As a result of environmental factors, many teachers become frustrated and dissatisfied with the teaching profession. Frustration occurs when the teacher cannot accomplish certain tasks or educational objectives due to a lack of equipment and/or facilities, inadequate funds, limited time, changing agricultural situation, decline of student interest, and other frustrating circumstances. Dissatisfaction may arise due to the desire of the vocational agriculture teacher to achieve more status, responsibility, rewards, shorter working hours, or change of residence.

As a result of statistical tests, it was found that environmental factors, such as long hours, inadequate salary, and lack of advancement opportunitites, influenced a larger number of tenured than non-tenured teachers to leave the vocational agriculture teaching profession. The list of environmental stress factors influencing tenured teachers to leave the profession were:

1. Lack of advancement opportunities;
2. Long hours;
3. Inadequate salary;
4. Too short summer vacations;
5. Size of community;
6. Teaching in remote area of the state;
7. Too few teacher aids and materials available;
8. Trend toward less emphasis on vocational education in agriculture;
9. Students lacked interest;
10. Oversized classes which reduced teaching effectiveness thus increasing job dissatisfaction;
11. Little or no opportunity to specialize; and
12. School discontinued vocational agriculture department on a full-time basis.

PROFESSIONAL FACTORS

Professional factors included those items associated with the role of teaching were assumed to affect the ability of the vocational agriculture teacher to fulfill the expectations of his job. This inadequacy on the part of the teacher to meet the requirements of his job included such reasons for failure as lack of technical knowledge, his personality as it related to his students, health and possibly his background.

Teachers who lacked tenure exited from the vocational agriculture teaching profession most frequently because of such professional factors as dislike teaching certain subject areas, and contract not renewed. The professional factors influencing non-tenured teachers to leave the profession were:

1. Discipline problems;
2. Dislike for adult and young farmer programs;
3. Dislike working with high school students;
4. Dislike teaching certain subject areas;
5. Contract not renewed; and
6. Poor health.

SOCIOLOGICAL FACTORS

Sociological factors are factors which may affect the ability of the vocational agriculture teacher to adapt to the social needs of the community or to get along with, and to behave like, others in his social group. These sociological factors affecting teaching behavior lead to conflict. Conflict arises due to the work that the vocational agriculture teacher is doing compared to what others think he should do. This disagreement may arise between the vocational agriculture

(Concluded on next page)

(Mattox—from previous page)

teacher and the state supervisor, school administration, community, family, the federal-state-local school system, and others.

It was interesting to note that sociological factors by themselves had no influence on the teacher's decision to leave the vocational agriculture teaching profession; however, when viewing the sample of teachers as a single group, many left the profession because of a combination of environmental and sociological factors. These include: too many evening responsibilities, lack of administrative support and backing on decisions, and submitting state reports. A complete list follows:

1. Personality conflicts with administration
2. Time required for FFA activities
3. Community responsibilities
4. Ethnic and religious factors
5. Expected to teach subject matter areas other than agriculture
6. Overemphasis of athletics
7. Required extracurricular activities
8. Too many meetings to attend as a vocational agriculture teacher
9. Lack of administrative support and backing on decisions
10. Lack of cooperation from Department of Agricultural Education at the land-grant college of Arizona
11. Too many evening responsibilities
12. Community attitudes toward vocational agriculture
13. Wife not happy with vocational agriculture profession
14. Excessive amount of outdoor work involved in teaching agriculture
15. Unable to adjust to the school schedule
16. Submitting state reports
17. Dislike of community standards for teachers
18. Lack of school policy and long range goals
19. Lack of administrative trust and support

SUMMARY

In summary, no single factor was found to significantly influence teachers to leave the vocational agriculture teaching profession. Groups of factors, however, which led to role stress were found to affect tenure in teaching agriculture. Role stress may possibly contribute to a change in occupation. The study was instrumental in providing an insight into the need of reasearch which describes and analyzes the relationship and consequences of stress within the occupation of teaching vocational agriculture. It appears that the occupation of teaching vocational agriculture may involve different stress factors of varying severity. The stress factors, if not corrected, may lead to certain psychological reactions and may influence the teacher to find another occupation with a lesser degree of stress. ◆◆◆

REALLY TEACHING VO-AG?

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Are you truly a teacher of Vocational Agribusiness and Natural Resources? Take three minutes of your time to reflect upon criteria which make the teaching of Agribusiness and Natural Resources VOCATIONAL AGRICULTURE. Can you answer yes to the following?

1. My instructional program is planned to prepare those enrolled for employment in occupations requiring a knowledge and skill in agriculture subjects.

2. Provisions are made in my teaching program to develop within each student an appreciation of career opportunities provided within the field of Agriculture/Agribusiness and Renewable Natural Resources.

3. I offer guidance to students enrolled, encourage them to make career choices, and assist them in developing plans for attaining their occupational goals.

4. My teaching is relevant to those enrolled and is primarily directed toward developing specific attitudes, habits and competencies needed by individuals for job entry.

5. Each student enrolled in my classes receives the benefits contributed by his (her) purposeful participation in a meaningful supervised occupational experience program.

6. The program and activities of the FFA chapter interest each student and motivate him (her) to actively participate in a program of development and personal growth.

7. I assist students enrolled in bridging the gap between high school and the next phase of their life following graduation—be it job placement; vocational technical school; college of agriculture or other.

Review your answers. If you are truly teaching Vocational Agriculture/Agribusiness and Natural Resources, all questions will be answered *yes*.

The students in your classes deserve your best. Resolve to make your teaching truly VOCATIONAL AGRICULTURE. ◆◆◆

(Seefeldt—from page 131)

To solve the need for an FFA activity that would allow individual FFA members to receive recognition for successfully competing with themselves, an "FFA Achievement Program" was designed. This program was developed to recognize vocational agriculture students who successfully competed with themselves in achieving certain predetermined goals. The list of skills, abilities and attitudes with which each student will be challenged are grouped into four classifications: Occupational Proficiency, Leadership Development, Career Perspective, and Safety Practices. Each student who completes 80 percent of the assigned tasks will be presented an "Achievement Award Certificate" with an embossed FFA emblem in those areas in which he competed successfully. The following positive results were obtained with all students who were involved in the pilot program from the twelve participating schools in California and the thirteen in Wisconsin:

—Students did increase their level of participation when they knew exactly what was expected of them to be successful.

—Both rural and urban students became more interested and involved

BOOK REVIEW

ANATOMY AND PHYSIOLOGY OF FARM ANIMALS, by R. D. Frandson. Philadelphia, Penn.: Lea and Febiger, 1974. Second Edition, 494 pages with 257 illustrations, 4 in color, $15.00.

R. D. Frandson originally set out to write a text for students majoring in the animal sciences, 4-H club members, and vocational agriculture students. This he accomplished quite well in the first edition of ANATOMY AND PHYSIOLOGY OF FARM ANIMALS. However, he found that the first edition was being used considerably by veterinary students and veterinary practitioners. He has now produced the second edition which is an attempt to be of more value to them without sacrificing the simplicity and clarity desirable in an undergraduate test.

The book begins with a brief introduction to anatomy and physiology and defines quite well the terminology of this area of study. The reader begins with the structure of the cell and progresses through a study of the anatomy and then the physiology, or workings, of each of the tissues, organs, and animal systems.

At the beginning of each chapter is a brief outline of the subheadings to be covered. This provides the reader with a very real road map by which to progress through the book. With the addition of many detailed pictures, which can be reproduced quite well for overhead or handouts, the internal workings of each farm animal begins to unfold in a very easily read and understood manner.

The author set out to add details essential to the veterinary profession in this edition and this was accomplished so as to provide the indepth information necessary. Important species differences are described with the most attention given to the horse and cow. Technical terms are found throughout but the author defines them in an easily understood manner.

Because of the technical nature of this edition, it is suited more as a text or reference for the student in a junior college technical course; undergraduate animal science or pre-vet course; or as a reference for teachers of vocational agriculture. The first edition seems more suited for high school agriculture reference. For advanced study, the second edition might be used. However, the terminology and detail would be hard to comprehend unless instructor assistance was secured.

R. D. Frandson had set out to write a simplistic but detailed edition on anatomy and physiology of farm animals. He has done so in a most logical and well written format. This book is highly recommended for reading and for reference.

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Montgomery County Joint Vocational School
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(Seefeldt—from page 131)

in FFA activities.

—An improvement in student citizenship, character, responsibility and cooperation as noted by the activities in which they became involved.

—Development of more self-confidence in each participating student.

This new achievement program will be available nationwide on request for 1975. The success of this type of program is based on the concept that it encourages students participation by relating his opportunity to receive recognition directly to the instructional program. Therefore, each instructor must develop the list of skills, abilities and attitudes which will be used with his students. To assist each instructor with the task of developing the necessary lists, examples covering a number of instructional areas will be made available along with other instructions on how to use the program. This material will all be contained in a booklet entitled "Achievement Award Program" which will be available from the National FFA Center by April 1975.

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I certify that the statements made by me above are correct and complete. *(Signature of editor, publisher, business manager, or owner)* Harlan E. Richardson

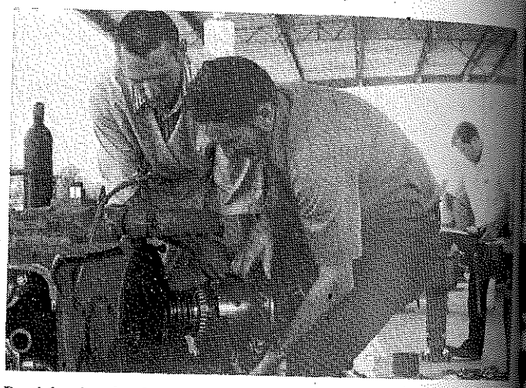
PS Form 3526 July 1971

MSU Professor Donald O. Meaders, secondary education, presents Dr. H. Paul Sweany with one of several awards given him at his retirement fete during the Michigan MATVA seminar held the latter part of July. Shown next to Dr. Sweany is his wife.

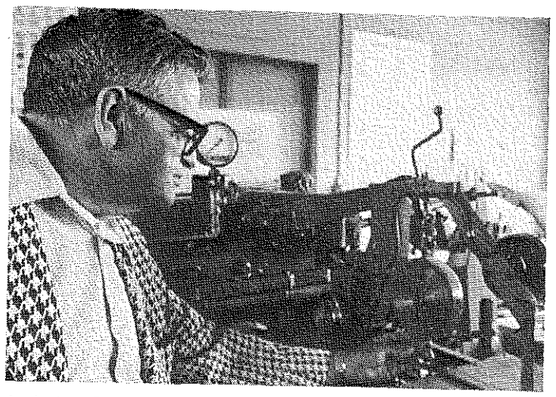
Edward Slettom, left, executive director of the Minnesota Associa tion of Cooperatives, visiting with Jack Lindner, supervisor of the Learning Resources Center at University of Minnesota-Waseca, after presenting two volumes of RISE OF AMERICAN COOPERATIVE ENTERPRISE to the Center.

Stories in Pictures

by McMillion



Participating in the Ford Tractor Workshop, University of Arizona, are Mr. Gail Deal, Tempe, and Mr. Fred Amator, Aqua Fria Union, Avondale. In the background is Mr. Jim Brown, Peoria. All are teachers of vocational agriculture in Arizona. (Photo by Clifton Jacobs)



Agricultural mechanics and crops highlighted recent Swiss tour for Charles Schettler of Wapella, Ill., who was the National Vocational Agricultural Teacher's Association winner of a Ciba-Geigy Agricultural Recognition Award. Schettler worked machinery at the Cantonal School of Agriculture in Morges, Switzerland.

Dr. W. C. Banks (left) is dedicated to producing the best possible radiograph. Here he points out the delineation of detail in an x-ray study to students gaining first-hand experience in radiology toward their DVM degrees at Texas A&M University's College of Veterinary Medicine. (Photo by Eastman Kodak)

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Theme—URBAN AGRICULTURAL PROGRAMS