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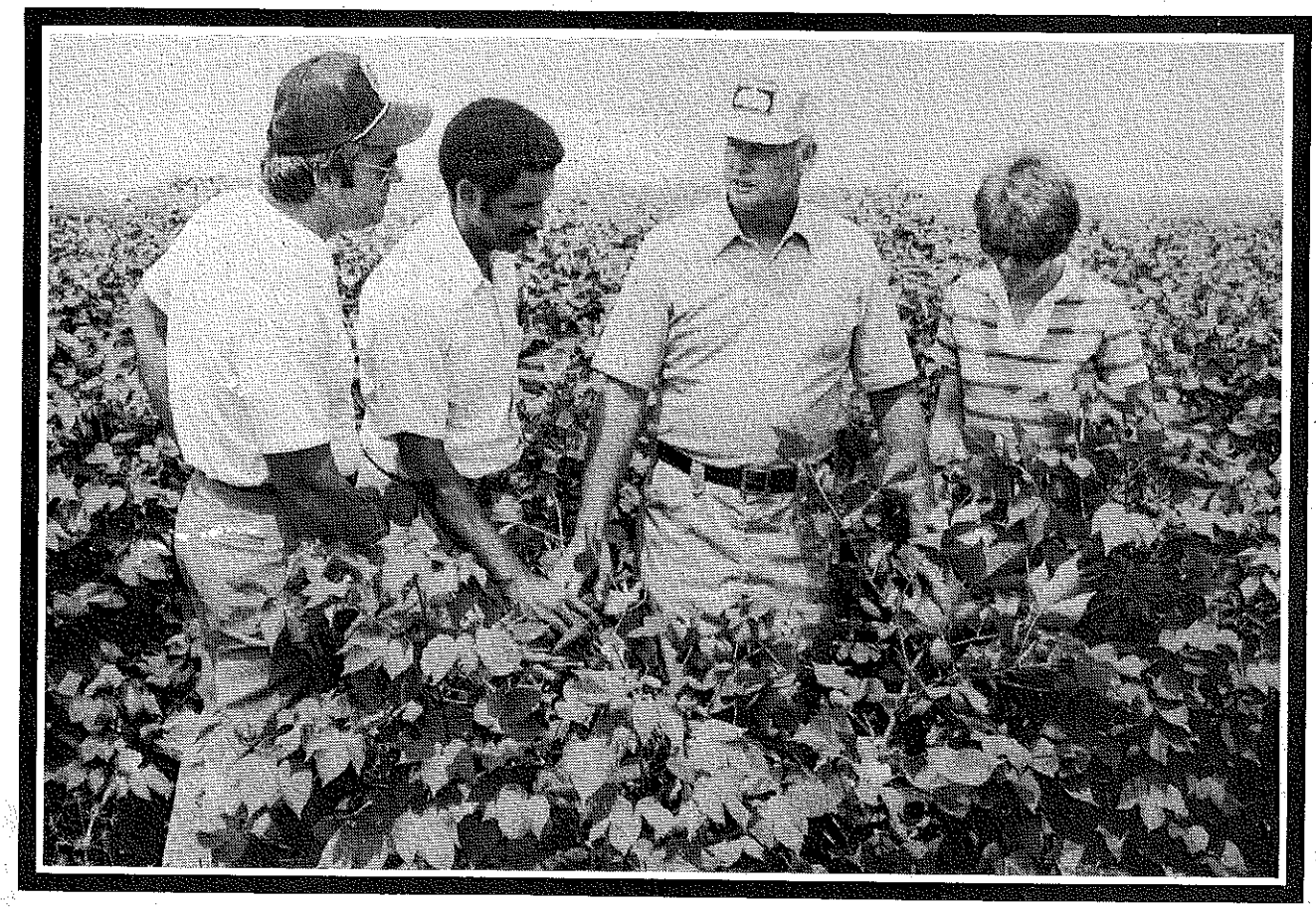

THEME: Achieving Quality Teacher Education Programs

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THE
AGRICULTURAL EDUCATION
MAGAZINE

July, 1983 Volume 56 Number 1

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

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EDITOR'S PAGE

Quality Teacher Education

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

A vocational agriculture program is no better than its teacher! These words appear frequently in various forms and in numerous articles on a vast array of themes submitted to the MAGAZINE. A competent teacher is the essential component of a successful vocational agriculture program. Competence implies that the teacher must have sufficient technical knowledge in the field of agriculture, and sufficient skill at imparting that knowledge to others.

Numerous studies have been conducted to identify the competencies a teacher should possess in order to conduct a successful program as a proficient teacher. Fewer studies have investigated the technical knowledge that is necessary, perhaps because the knowledge base is growing and changing so rapidly that it is almost mercurial. Almost all who discuss this subject quickly point out that teachers need more training in both technical agriculture and pedagogical competencies.

Some Issues

Issues continue to be debated among teacher educators related to what competencies are essential to the preservice programs and which can be best accomplished through inservice education. They wish to determine how much education should be in technical agriculture and how much in pedagogy. Likewise, the preservice program is reviewed to determine how much of the preparation should be in basic education such as humanities, social sciences, mathematics, sciences, communications, etc. The latter issue will likely be scrutinized again in the near future as a national concern emerges over the quality of education. Another issue is related to the model of delivery of inservice education and whether it should be credit or noncredit.

Our history reveals that these issues are not new. They have been discussed for years. Each teacher training institution will need to make rational decisions for their program based upon accurate information to meet the needs of their clientele. The teacher education program must then deliver the education to meet these needs.

Accreditation

Achieving a teacher education program of high quality is no easy task. Jasper Lee[1] pointed out that considerable variation existed in the quality of agricultural teacher education programs. He called for the establishment of a procedure to accredit teacher education programs in agriculture and urged the AATEA to be the catalyst. Two years have elapsed with little activity in this area.

The teacher is the key to the quality of the vocational agriculture program. The education of teachers of vocational agriculture is a lifelong process. Continuous renewal is needed if our program quality is to remain high. Preservice preparation must be as thorough as possible within the finite length of the program. Agricultural education teacher preparation has served, in many cases, as a prototype for other areas to model. We must continue to monitor ourselves and grow in order to prepare teachers for the everchanging agricultural industry.

Reference

[1]Lee, Jasper S. "Professionalism" THE AGRICULTURAL EDUCATION MAGAZINE, Vol. 54, No. 1, July 1981, p. 3.

The Cover

Quality teacher education programs necessitate quality inservice education for teachers of vocational agriculture. (Photograph courtesy of Blannie Bowen and Glen Shinn, Department of Agricultural and Extension Education, Mississippi State University.)

Other Services

Inside the front cover of each issue of the MAGAZINE are listed the Picture Editor, Book Review Editor and Teaching Tips Editor. These people are always in need of good pictures, persons to review books and teaching tips to aid the profession. Please feel free to contact them directly.

1984 Themes

The need to revitalize the Supervised Occupational Experience Program (SOEP) component of the program in vocational agriculture has prompted national attention. The success of the 1982 national workshop, "Bridging the Gap," has prompted plans for a follow-up meeting in 1984. The Editors have concurred that the MAGAZINE should serve as a medium to present an in-depth look at this component of our program in 1984. The theme for each issue will focus upon a selected aspect of SOEP.

Teachers are particularly encouraged to review these themes and submit articles to the Theme Editors or the Editor. The MAGAZINE will, of course, continue to publish articles on topics other than the themes in each issue. Therefore, teachers should continue to share their thoughts with the profession by preparing articles on other topics.

The themes, deadline dates and Theme Editors for 1984 are:

(Continued on Page 4)

Quality Teacher Education

(Continued from Page 3)

Issue and Theme	Date Due	Theme Editor
January, SOEP: Entrepreneurship	September 15, 1983	Dr. Ed. Osborne Division of Agricultural Education 357 Education Building University of Illinois Urbana, IL 61801
February, SOEP: Placement Programs	October 15, 1983	Dr. Michael Burnett School of Vocational Education Agriculture Education Department Louisiana State University Baton Rouge, LA 70803
March, SOEP: Cooperative Experience Programs	November 15, 1983	Dr. Robert Martin Agricultural Education South Campus Courts Purdue University West Lafayette, IN 47907
April, SOEP: Laboratories	December 15, 1983	Dr. H. Dean Sutphin Agricultural and Occupational Education Stone Hall Cornell University Ithaca, NY 14850
May, SOEP: Urban Programs	January 15, 1984	Dr. Richard Hylton Department of Agricultural Sciences School of Agriculture California State Polytechnic University Pomona, CA 91768
June, SOEP: Recordkeeping	February 15, 1984	Dr. J. Dale Oliver Agricultural Education Program Lane Hall Virginia Polytechnic Institute and State University Blacksburg, VA 24061
July, SOEP: Sales and Service	March 15, 1984	Dr. David Coffey Agricultural Education Department of Agriculture Western Kentucky University Bowling Green, KY 42101
August, SOEP: Horticulture	April 15, 1984	Dr. Chris Townsend Agricultural Education Department of Agricultural Education Illinois State University Normal, IL 61761
September, SOEP: Mechanics	May 15, 1984	Dr. Clinton O. Jacobs Department of Agricultural Education University of Arizona Tucson, AZ 85721
October, SOEP: Forestry, Conservation and Recreation	June 15, 1984	Dr. Carla Kirts Agricultural Education 309 O'Neill Resources Building University of Alaska Fairbanks, AK 99701
November, SOEP: Adults	July 15, 1984	Dr. Don Claycomb Agricultural Education Program 435 General Classroom Building University of Missouri Columbia, MO 65211
December, SOEP: Post Secondary	August 15, 1984	Dr. Stanley R. Burke Agricultural Education Agricultural Technical Institute Wooster, OH 44691

THEME

Achieving Quality Teacher Education Programs

By Max Amberson

(Editor's Note: Dr. Amberson is Head of Agricultural and Industrial Education at Montana State University, Bozeman, Montana 59717.)

The program of vocational agriculture and the FFA continues to enjoy remarkable success due primarily to one factor; quality teachers at the grass roots level. These unique persons, vocational agriculture teachers, place service to the youth and adults in their community above most of their own personal concerns. When I traveled as a vocational agriculture supervisor in Montana, superintendents frequently commented that vocational agriculture teachers were among the school's best prepared teachers and were unequaled in working individually toward total development of each student, and in their pursuit to prepare students for further education or employment.

Superintendents and others have become accustomed to having available quality teachers of vocational agriculture to teach and to become resource persons in agriculture at the community level. The question is, will this remain true? I'm confident that this tradition will prevail, but it will need to be a planned and carefully articulated effort by the entire vocational agriculture profession.

Aggressive Recruitment

Starting with the appropriate raw materials expedites fabricating quality tools. Yes, we might randomly select metals and occasionally be successful, but we may also have many failures.

We all realize that a program of vocational agriculture is no stronger than the teacher. Thus, it becomes the professional responsibility of teachers, supervisors and teacher educators to recruit potential students who have the motivation and the potential of becoming quality vocational agriculture teachers.

Teacher educators, thus, have the major responsibility to organize and coordinate an active and innovative recruitment program. While teachers in the field are the front line for these activities, recruitment must also involve other university staff, alumni, agriculture producers and agribusiness firms. A plan of action must prevail and every player must know and perform their part.

Esprit de Corp

No other group of which I am aware has more pride than the profession of agricultural education. We all share a deep regard for the importance of agriculture production and its role in the world. It is important that this remain true since nothing succeeds like success. It is the positive enthusiasm that prevails through supervision, teacher education, and teaching of vocational agriculture that probably is one of the keys to our program's success. Hopefully, this will remain, but it will be more difficult to maintain due to diversity of programs in vocational agriculture and the degree of specialization we are now experiencing.

Experience

While we take seriously the fact that vocational agriculture students must have experience before they seek jobs, how serious are we as a profession about providing agricultural production and agribusiness experience for persons preparing to be teachers; supervisors; and, yes, even teacher educators. If we are to remain a truly viable profession and continue to hold the respect of those in production agriculture and agribusiness, should we not all share the common bond of recent, modern practical experience. We assume that teacher educators were once good teachers, but how long has it been since they have updated their teaching and technical agriculture information. Should this be done every five years?

Role Clarification

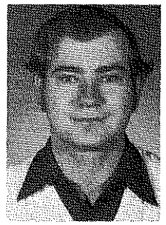
If quality is to remain a predictable characteristic in our profession, perhaps first and foremost we must determine clearly what we should accomplish, who we should serve and the types of programs that meet the program's goals.

No longer can we afford to strive to be all things to all people. Though in America, program and curriculum matters remain a local decision, less confusion might prevail if there were a revised mechanism for sharing ideas and establishing and carrying out program standards from the national down to the local school district. Such a mechanism established primarily for the exchange of ideas and information between all of us in agricultural education stands a chance of perpetuating quality programs well into the future.

It is my fear that should such a mechanism not develop, we will spend time talking with ourselves as teachers, supervisors or teacher educators and less time working as a vocational agriculture program team. For, I believe, it is only through teamwork we will be able to maintain and improve quality programs of vocational agriculture in America.

THEME

Developing a Superior Preservice Program



By Paul R. Vaughn and Mike Gaines

(Editor's Note: Dr. Vaughn is an Associate Professor of Agriculture and Extension Education at New Mexico State University, Las Cruces, New Mexico 88003; and Mike Gaines is the Vocational Agriculture Instructor in Carrizozo, New Mexico 88301.)

If you were to survey all the teacher education programs in agriculture in the United States, you would find a remarkable amount of similarity in the preservice programs for agricultural education students. Most would have the same length of program, similar curricula, and similar student teaching experiences. With these common components, what then is it that makes one preservice program superior to another? Is it the number of courses offered in agricultural education? Or the number of professors in the department?

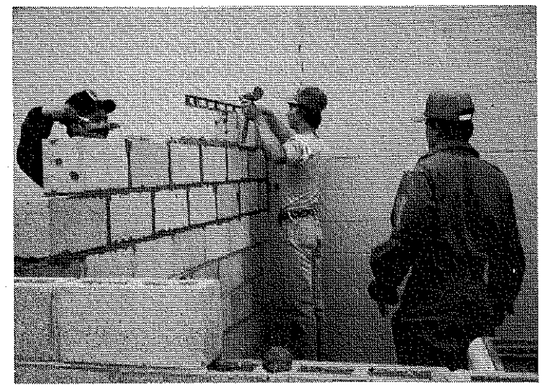
We do not think so. Rather, it is our belief that three distinct factors contribute more toward the quality of a preservice program than anything else. These three factors are incorporated into the following statements.

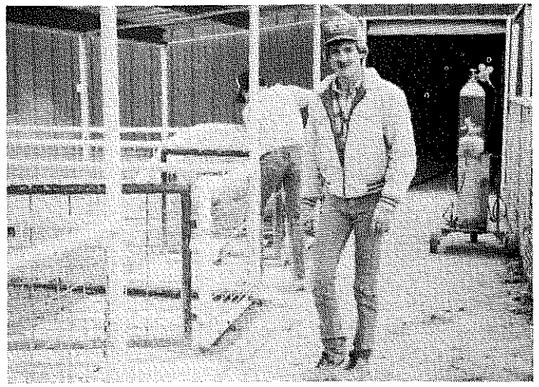
1. *The quality of the program is directly proportional to the quality of the program's personnel.* We stress continually in agricultural education that the program is no stronger than the individual teacher (or teachers). The same is true for preservice programs. The superior preservice programs will be the ones with teacher educators who can relate to students, who have a variety of experiences upon which to call, who understand agricultural education and its problems, who can instill positive, enthusiastic feelings in prospective teachers, and above all, who can demonstrate how to teach effectively. This is not to say that curriculum, facilities, and other similar factors are not important. However, without these characteristics being exhibited by teacher educators in the preservice program, the program will never be the success it should be, and it will never provide the students with the experiences they vitally need to become vocational agriculture teachers.

If you think that we are suggesting that only bright, competent, enthusiastic, successful vocational agriculture teachers be hired as teacher educators in a preservice program, then you are right. This is exactly what we suggest, and if that principle is ignored, then the preservice program is bound to suffer. Perhaps one of the bleakest aspects of many teacher education programs is that they offer a less than ideal role model for teachers. The hiring and retention of people who can practice what they preach is essential for the superior preservice program.

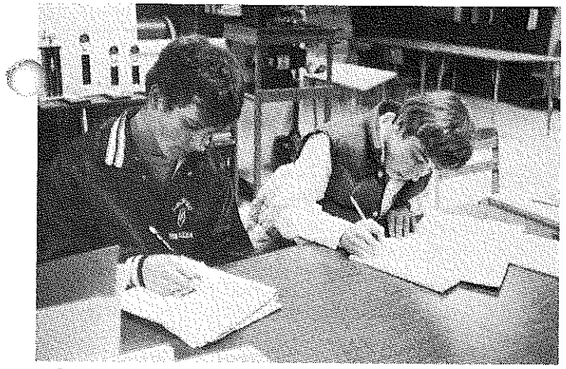
2. *Superior preservice programs include superior student teaching experiences.* Student teaching experiences should occur in the best programs available. In addition to the obvious necessity of having an excellent teacher, the program selected should be one that has supportive administration, strong community support, and above average facilities.

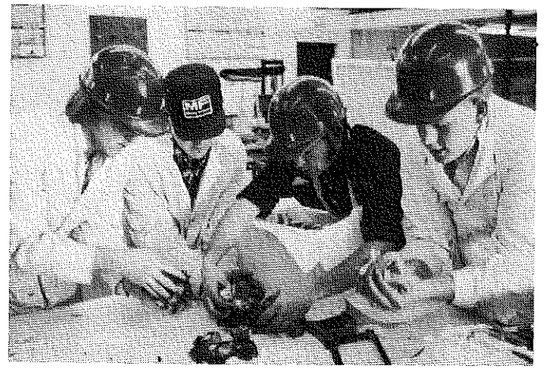
Some advocates have said that student teachers should be placed in average programs so they will have experience in working with less than adequate facilities or administrative support. There is some logic in that reasoning, but we feel it is much more important for the student teacher to be exposed to what a program can be rather than what might be expected in the first teaching job. Many young teachers never realize the potential of their own programs because they have not experienced an honest-to-goodness vocational agriculture program. They need the advice and counsel of an individual who has built up a strong program and has developed strong administrative and community support.





Student teachers need to have superior learning experiences after which they can model their own teaching. (Photographs courtesy of the authors.)





Superior experiences in the classroom and laboratory can help the student teacher gain the confidence needed to become a successful teacher. (Photographs courtesy of the author.)

A good teacher might not have outstanding facilities or strong administrative support, but over a long period of time, we feel an outstanding teacher will eventually gain these things. These outstanding teachers are important contributors to the education of prospective teachers in that they teach them what the program should be rather than the status quo. Beginning teachers will quickly learn what is status quo; they may never learn what a program should be unless they are exposed to such a situation.

3. *A variety of experiences are offered in a superior preservice educational program.* The needs of the prospective teacher are just as varied as the needs of the high school student in vocational agriculture. A variety of experiences should be provided which will assist prospective teachers in meeting their needs. There are many activities which can meet these needs, including the following:

- **Participation In A Student Organization.** Collegiate FFA, Agricultural Education Society, and Alpha Tau Alpha are all excellent organizations through which a prospective teacher can obtain the skills, abilities, and enthusiasm necessary for successful advisorship of an FFA chapter.
- **Early Field Experience.** Students need to be given the opportunity early in their college careers to decide if they really like the job of the vocational agriculture teacher. Although most professions do not allow such an opportunity, the nature of teaching and its importance in society necessitates the teachers be happy with their career choice and dedicated to working with young people. Again, this early experience should be in outstanding programs which exemplify what vocational agriculture should be.
- **Visitation Of Model Programs.** Ideally, student teachers would take a two week traveling seminar during their junior and senior year where they would visit model programs across the state or region. These models would include both outstanding programs and those that need improvement. In addition to exposing the students to the scope of vocational agriculture in the state, they will be able to identify some key elements of strong and weak programs.

There are many other activities which the superior preservice program might offer, but it should be understood that not all activities will be necessary for all individuals. The opportunity should be provided for those who need the experiences, but it should not be forced upon those who do not need them.

In summary, we feel the three essential elements of a superior preservice program in agriculture education are high quality program personnel, superior student teaching experiences, and a variety of experiences for the student. We hope that the profession will continually strive to develop these three elements in all preservice programs.

BOOK REVIEW

Domestic Animal Behavior, by James Craig, Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1981, 364 pp., $19.95.

This text does an excellent job of covering the spectrum of animal behavior. It is well documented and contains excellent bibliographical materials. Numerous authors and studies are cited as a basis of material in each chapter.

The book includes nineteen chapters and includes topics on natural selection, domestication, social behavior, stress, and parturition. The text contains data from many research projects. Ideas and suggestions for the practical use of research data are suggested for those working with livestock.

The material is interesting to read and could serve as an excellent text at the college level. It would be a valuable reference for any high school teacher of vocational agriculture.

Therald Quayle
Weber High School
Ogden, Utah

THEME

Preparing to Teach Agriculture to Adults

By Paul Marvin

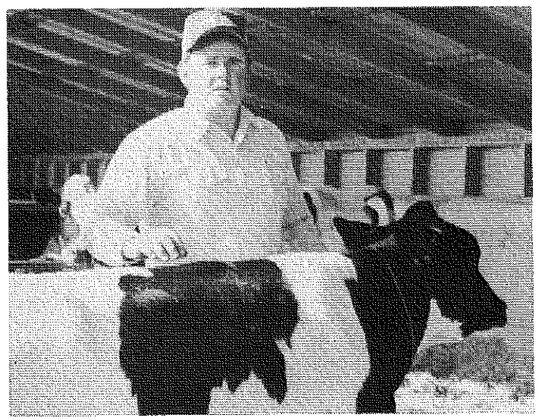
(Editor's Note: Dr. Marvin is Professor and Head of the Division of Agricultural Education in the Department of Vocational and Technical Education, College of Education, University of Minnesota, St. Paul, Minnesota 55108.)

Adult agricultural education has been a major component of vocational agricultural programs from the first introduction of agriculture instruction in the public schools. As a matter of fact, in a number of states, the adult instruction preceded the establishment of secondary programs under the Smith-Hughes Act. In Minnesota, A.M. Field conducted a rather extensive adult program in Northfield, Minnesota, as early as 1914. Organized as farmer clubs, much of the instruction was conducted on farms; not too different from the delivery model of farm management instruction being used today. A.M. Jacobson wrote in 1929, "We had an evening school with thirty farmers enrolled in the Cloquet, Minnesota, agricultural department. The principle problems for study were poultry and dairy farming."[1]

Competencies Needed for Teaching Adults

While adult farmer instruction has no doubt seen many changes through the years including a crash program to provide good adult agricultural education for large numbers of returning veterans after World War II, little attention has been given to the thought that preparation of instructors for adult farmer instruction might include something different or additional than for teaching secondary level students.

Attempts to identify the differences between competencies needed by adult instructors and instructors of youth have not been very illuminating. Knowles has written, "The difference between children and adults are not so much real differences, as differences in assumptions about them that are made in traditional pedagogy. The child like the adult would like some learnings for immediate application."[2] The application to immediate problems is the real difference in the way we perceive the most appropriate way to organize instruction. As indicated by the example mentioned by Jacobson in 1929, the problems of dairy and poultry production were real and immediate. The smaller diversified farms of that era had a need for an education program quite different from the farmer of today, who is involved in dynamic specializations involving daily marketing decisions, high technology and the use of computers. The knowledge must have immediate application in either case.



Young Farmers like Brian Hardy of East Corinne, Utah, require teachers with technical knowledge and special expertise in teaching. (Photograph courtesy of Paul Peterson, State Supervisor, Utah.)

Technical Knowledge

We may cite the immediate application of knowledge as one reason for organizing and delivering instruction differently for adult farmers. A second consideration for preparing the adult instructor is their high demand for management/technical information with less for the affective domain, i.e., developing attitudes toward work, social adjustment, etc. This shift in emphasis to the cognitive domain has implications for curriculum development and delivery systems. The differences between adult and secondary instructors, an emphasis on cognitive versus affective domains, have not been given much attention in teacher preparation programs.

The agricultural education programs of the past, and to some extent today, have focused primarily on the transfer of technology while the need for the farmer to keep abreast of technology is as great or greater today than ever, the single source such as the agriculture instructor or county agent is no longer adequate. Fortunately, the technical information is available but from a wide range of sources including the agriculture industries. The task of the farmer is to manage the resources. This expanding task which has given rise to the need for management education.

Persons has written in the June 1981 issue of The Agricultural Education Magazine:

> *"The aim has shifted to the management of resources. Adult education in agriculture must shift with the aim or it will no longer be a functional contribution to agricultural production or the vast industry it serves."*[3]

If we accept the challenge that vocational agriculture instruction for adults should be through a management education program, how then does a person become prepared to conduct the program? Should the requirements for teaching adult farm management be different from the preparation to teach at the secondary level?

Most agriculture teacher education units across the United States apparently do not believe there is a need for any great difference in the preservice preparation for teaching adults than for secondary students. In a survey of twelve teacher education departments, randomly selected within each of the four areas of the United States, no one reported any difference in a program leading to qualification for adults than for secondary.

Instructors who were qualified to teach secondary agriculture were also qualified to teach adults. Seven of the twelve reported a separate agricultural education course dealing with adult education. Only four states indicated any significant number of full-time adult instructors while all but two indicated their secondary instructors also did some adult instruction.

Five general areas of instruction appear in most adult management education programs. They are (1) goal orientation (2) establishing a data base (3) analyzing record information (4) a planned course of study and (5) personalized instruction.

With these major areas in mind, some conclusions may be drawn as to preservice courses to serve the needs of the instructors. One very obvious need is for a basic understanding of economics. The limited survey mentioned previously indicated from four to eight quarter-hour credits of general agricultural economics are required in the Agricultural Education major. Five institutions listed a farm records or an accounting course as required. In addition, each of the five required a marketing course.

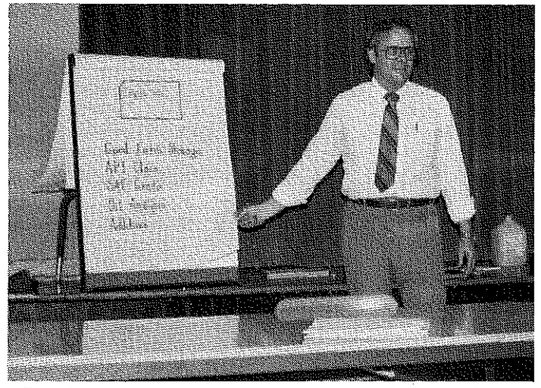
Earlier mention was made that the great demand for dynamic technology made it virtually impossible for one educator to supply all answers. This does not mean however, that an instructor can be effective as a management instructor if he/she does not have a strong technical background to determine how to manage the technology. The survey, referred to earlier, indicated from 30 to 45 percent of the preservice curriculum was in the technical fields. There has been a decline in the percent of the preservice curriculum assigned to technical agriculture in recent years, largely because of increased requirements in related areas of human relations, teaching of handicapped, etc. This trend is serious for all instructors but especially for adult instructors. Surveys of instructors inservice needs always indicate a need for more technical instruction.

The survey included a catalog listings of courses but it was not possible to detect any required computer courses; however, there is no doubt some computer instruction is being offered in preservice programs.

Internship Experiences

A major component of teacher preparation programs is the clinical experience or student teaching experience. What should happen during student teaching to enable adult farm management instructors to move into full-time positions better equipped than if they had not been required to student teach? The personalized activities and the confidential records are not easily shared by the supervising teacher and yet these experiences are critical to a beginning teacher.

If the supervising teacher is to permit the student teacher to really get involved with adults, it would seem an experience which was less intense, but over a longer period of time, might be more effective. An intern experience, or something approaching an internship, could be even more beneficial for adults than for high school teachers. More thought should be given to develop a meaningful experience.



Dr. Glen C. Shinn, Professor of Agricultural and Extension Education at Mississippi State University, conducting a diesel tractor maintenance workshop for young farmers in Carthage, Mississippi.

A final consideration in how one qualifies to teach adult farm management is the relevant occupational experience necessary in order to be effective. As the numbers of people with agricultural background has declined, we have had non-farm students gain experience in various ways to become successful teachers at the secondary level. Very few examples can be found where this has been true for the adult farm management instructor. As the number of people with farm background decreases, we may need to devise experience programs. If a longer internship as a substitution for the traditional student teaching experience is desirable, consideration could be given to incorporating some occupational or work experience to meet both requirements.

The future of agricultural education has its greatest potential for growth in adult education but the old methods of preparing people and keeping them updated through inservice programs will not keep pace. Miller stated:

> Teacher educators and supervisors should be ready to adquately adapt. Teacher educators need to prepare preservice teachers to work with adults, and be prepared to meet the inservice needs of a clientele heavily engaged in adult education. Teacher education programs may find an increased need for specialists in agriculture taxonomy areas to keep teachers up-to-date in appropriate technology.[4]

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Knowles, Malcolm S. The Modern Practice of Adult Education, Associated Press, 1970.

Persons, Edgar "Management Education: Old MacDonald's Farm Is Gone!" The Agricultural Education Magazine, 53, No. 12, June 1981, p. 6.

Miller, Larry E. "Adopting the Stepchild," The Agricultural Education Magazine, 53, No. 12, June 1981, p. 4.

THEME

In-field Practicum: A Confidence Builder for Preservice Teachers

By Phillip Zurbrick and Glen M. Miller

(Editor's Note: Dr. Zurbrick and Mr. Miller are Associate Professor and Lecturer, respectively, in Agricultural Education at the University of Arizona, Tucson, Arizona 85721.)

"Do I know enough to teach that unit?" "How can I teach that skill when I have never performed it myself?" These two questions were commonly asked by undergraduate agricultural education majors at The University of Arizona. Both were often asked with great concern and apprehension bordering on panic in some cases. Typically, they were asked during the beginning of fall semester immediately after returning from their cooperating school where they learned of the units that they would be expected to teach the following spring during their student teaching experience.

These prospective student teachers in vocational agriculture seem to forget that they have been going to school for three years acquiring the necessary background in both the technical areas of agriculture and the professional areas of education. One student teacher, upon returning from the August experience and after reviewing the units assigned, suggested that he needed to take another 32 semester units of college courses in technical agriculture. This is, of course, absurd from both the economic and educational points of view.

A closer analysis of the needs of preservice vocational agriculture teachers suggests that a good in-field practicum designed to develop those technical competencies needed, not only for student teaching but also to meet their needs as beginning teachers, is in order. At this point in their career development, the preservice vocational agriculture teacher is extremely eager for such learning experiences and little needs to be said about the value of the course or the topics addressed.

The question might be raised as to why such a practicum should be designated as "in-field". As the student who suggested that he needed 32 additional units in agriculture discovered upon closer scrutiny, the need was rather for some "hands-on" practical experience which would supplent and augment the academic instruction which he had already received in the classroom. In-field experiences of a practical nature were easy to identify and once accomplished can add a significant measure to the preservice teacher's confidence. Confidence is, after all, one of the primary requisites for a successful teaching experience and an enjoyable career.

Preservice University of Arizona vocational agriculture teachers placing range plant specimen in plant presses during an in-field range management practicum. (Photograph courtesy of the authors.)

Developing an In-field Practicum

After observing the behavior of preservice teachers and analyzing their needs, it became obvious that a real need existed to provide an opportunity for them to gain the necessary skills. This, combined with the recommendation of former student teachers, led to the creation of a practicum course in agricultural education some six years ago.

The purpose of this course is to provide an opportunity for agricultural education majors to develop skills and gain experiences in selected areas of technical agriculture, excluding agricultural mechanics. Agricultural practices assigned for student teaching that require special skills or technical knowledge are demonstrated by the instructor and/or a resource person. Students are provided an opportunity to select and demonstrate additional approved practices to be included in the course. The course expectancies also include the preparation of instructional materials, primarily student activity worksheets, by the student which can be used during the student teaching experience.

The specific objectives addressed through the practicum include: students will be able to 1) perform selected agricultural skills, 2) develop and organize demonstrations on selected agricultural skills, and 3) prepare technical instructional realia for application during student teaching.

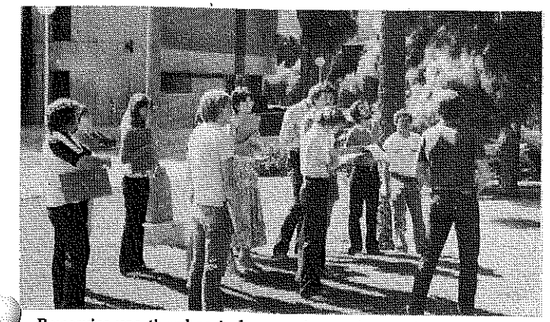
Content and Organization

The content of the practicum course is determined by the students. Utilizing a prepared form, students identify all of the units they have been assigned to teach during their student teaching experience. The students then identify one of the units, one which they feel they have the least experience or confidence to teach, and list the information they will need to teach their students. Using the same unit, they then list the skills that must be taught for the vocational agriculture students to become competent. Finally, the students identify the five skills they know the least about. These five skills then become the nucleus of the topic that the student will be responsible to present.

After students have identified their topic, the class selects dates from the schedule of available class dates. Every effort is made to fit the topic with the appropriate season, or timeliness, to maximize impact. Students are advised that because the identified topic is, in fact, their weakest area, the most logical way to prepare and present the skills is with the aid of a resource person. The use of resource people benefits the student by allowing the student to become versed in the proper use of a resource person, and by providing skill experiences which are in step with current practices in the field.

The preservice teacher is encouraged to develop his or her topic using the following steps:

1. The student contacts the practicum instructor to be sure that the skills identified for the experience are truly skills and not informational items.
2. With the assistance of the instructor, the student identifies and contacts a potential resource person.
3. The student schedules the date with the resource person.
4. The content of the practicum is reviewed with the resource person and modified, if necessary.
5. The student develops a student activity worksheet (SAW) which includes the title of the unit; the job title; one or more performance objectives; preliminary knowledge required; instructions; a list of tools, materials and references; and a detailed description of the method of procedure.
6. The student shares the student activity worksheet with the resource person and the instructor.



Preservice vocational agriculture students take part in a practicum on landscape plant identification. The practicum course is offered as a part of the undergraduate program in agricultural education at The University of Arizona. (Photograph courtesy of the authors.)

University of Arizona farm herdsman demonstrating proper castration procedures for an in-field practicum for preservice vocational agriculture teachers. (Photograph courtesy of the authors.)

7. The Agricultural Education Department duplicates the student activity worksheet so that there are enough copies for everyone in the class.
8. The student is responsible for bringing all real materials (if not furnished by the resource person) and the SAW to the practicum and introduces the resource person to the class.

Students are responsible for demonstrating or having the resource person demonstrate at least two of the selected skills. Each member of the class is expected to have the opportunity to perform each of the skills being presented. All activities must be planned to allow class participation and hands-on experience.

This demonstration and participation are assigned a point value and the instructor then evaluates the student on the skill with which the resource person was utilized and the manner in which the skill was presented. The student activity worksheet (SAW) is also assigned a point value based upon accuracy, completeness and utility as evaluated by the instructor.

The final evaluative instrument used in the class is the student notebook. Each student is required to keep a notebook of all materials presented in class. Students are encouraged to take photographs to clarify the steps on the student activity worksheet. Students completing practicums then have a complete set of student activity worksheets of skills that are useful when teaching vocational agriculture.

The course organization and content meets the objectives of the course in three ways: (1) the student has developed the ability to perform the selected agricultural skill, (2) the students have developed and organized hands-on demonstrations for the class, and (3) each student has prepared technical instructional realia for application during later teaching assignments.

Reaction to In-field Practicum

Student response to the "in-field practicum" has been exceptionally good. The preservice teacher comes into the course with immediate concerns and doubts as to their

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In-Field Practicum: A Confidence Builder for Preservice Teachers

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ability to perform assigned skills. Thus, they are eager to develop the needed skills and recognize the value to them. Initially, some students are fearful and reluctant to make contact with resource people and to present skills with which they are unfamiliar. This attitude is reversed when the student experiences the cooperation and sincere desire to help expressed by the resource people.

The experience is nearly always positive and leaves the student prepared to seek out help when confronted with the need to teach unfamiliar skills as a vocational agriculture teacher. This skill in utilizing resource people is probably as important as the specific skills learned. Students soon view the class as a critical to their professional preparation. Course evaluations completed by the students at the end of each semester have consistently rated the course extremely high.

The resource people involved in the practicum are not, for the most part, an unknown commodity. Many of the resource people recommended to the students have participated many times and have an excellent record for appropriate presentations and a sincere desire to work with agricultural education undergraduates. Some contacts are unable or unwilling to give the time, but experience has shown that even these resource people have been able to recommend additional contacts who could cooperate. The contacts have also benefitted. The resource people have developed a positive perception of the agricultural education program. The eagerness with which so many of the resource people respond is evidence of the high regard with which they hold the Department of Agricultural Education and the practicum concept.

Agriculture education seniors from The University of Arizona develop range management skills through an in-field practicum in cooperation with resource people from the Department of Range and Renewable Resources. (Photograph courtesy of the authors.)

The practicum concept has spread throughout the College of Agriculture due largely to the enthusiastic response of those College of Agriculture faculty who have acted as resource people. When the course was initially proposed, there were questions of its academic respectability. Now, it is widely copied and recognized as a critical method to meet the needs of today's students.

There is ample evidence from both student teachers and new teachers in the field of the practical application of the specific skills learned in the practicum course and of the skill of properly utilizing resource people. The in-field practicum illustrates the need to bring the community into the classroom and has given the students the procedure and confidence to carry it out. Inservice teachers who have completed the practicums course feel less isolated and more capable of teaching the skills necessary to develop competencies in agriculture.

BOOK REVIEW

TEACHER EDUCATION IN AGRICULTURE, edited by Arthur L. Berkey, Danville, Illinois, The Interstate Printers and Publishers, 1982, $14.75.

TEACHER EDUCATION IN AGRICULTURE was written by some twenty-nine leaders in the profession. This second edition offers great thought and insight into the profession in the 1980's. This publication focuses upon the current issues facing and the status of teacher education in agriculture.

Chapters one, two and three deal with the development of, the need for, and the programs of teacher education in agriculture, respectively. Chapters four and five discuss instructional objectives for preparing teachers and recruiting and selecting teachers.

Chapters six through nine describe aspects of the curriculum. Specifically, they include: general education, agricultural subject matter and occupational experience, professional education and field-centered experiences.

Chapter ten relates to student personnel services in teacher education. Chapter eleven is about inservice education for teachers of agriculture, while chapter twelve discusses graduate study for teachers of agriculture.

Chapters thirteen and fourteen deal with the evaluation of teacher education programs and research in teacher education in agriculture, respectively. Chapter fifteen is about the role of teacher education in international agriculture.

Chapter sixteen focuses on philosophy for teacher education, and the last chapter, seventeen, discusses the current issues and future outlook of the profession.

A real strength of this book, as related by the Editor, lies in the diversity of its many authors. Although allowing the reader exposure to varying ideas and positions in the profession, it provides a common emphasis on high quality programs. This book should be considered essential to the library of any teacher educator in agriculture, and may be of great interest to any member of the agricultural education profession.

George Wardlow
The Ohio State University
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THEME

Achieving Quality Programs? R_x: Inservice Education

BY BLANNIE E. BOWEN AND GLEN C. SHINN

(Editor's Note: Drs. Bowen and Shinn are Associate Professor and Professor, respectively, in the Department of Agricultural and Extension Education at Mississippi State University, Mississippi State, Mississippi 39762.)

New technology, updating, or simply meeting the changing educational needs of vocational agriculture teachers after they are on the job is a task faced by teacher educators. How well these needs are met is often the sole measure used when vocational agriculture teachers gauge if teacher educators care about them and their programs. To teacher educators, however, inservice activities are time consuming tasks with limited reward when universities determine productivity and scholarship.

Teacher educators reported in 1980 that they spent approximately 10 percent of their time conducting inservice activities (Bowen, 1980). Because the amount of time ranged from zero to 70 percent, could it be that in some states, one or two teacher educators conduct the bulk of the inservice? Twenty-five percent of the teacher educators reported they did not spend any time doing inservice programs for vocational agriculture teachers.

A strong inservice program is designed to achieve many purposes, but the overriding goal should be to maintain a pool of competent and capable vocational agriculture teachers. Richard Acker, Chairman of the Mississippi Vocational Technical Advisory Board, commented that "It is not appropriate to certify teachers and have them continue at that same level for years and years". This principle is appropriate for secondary, postsecondary, and university teachers.

What is Inservice Education?

Several authors have defined inservice education as the credit and noncredit learning experiences provided for teachers. This broad definition includes a variety of formal graduate courses and workshops that may be used for certification purposes. Other less formal activities include short courses, workshops, drive-in clinics, seminars, and teleconferences and tele-lectures. Sessions during teacher conferences, tours, field days, demonstrations, and professional enrichment programs also qualify in the less formal category.

Sound inservice programs require good planning by teachers, state staff, teacher educators and industry representatives.

A note of caution about inservice was offered by Shinn and Bail (1982). These authors indicate that, "if any inservice activity is to be meaningful and useful to the participants, it must include three phases" (Shinn and Bail, 1982: 183). Those phases include a pre-assessment to determine where teachers are currently, a specific plan for attaining the objectives of the inservice, and a post-assessment to evaluate the success of the activity.

Why Conduct Inservice?

Although technical competence most readily comes to mind, other reasons for conducting inservice are available. These reasons might be to enhance teaching skills, incorporate new techniques in agriculture and education, and to update teachers on new technology such as video-disks, microcomputers, agricultural machinery, or welding processes. A less noticeable reason for conducting inservice education is to motivate both beginning teachers and veterans who have just a few years left before retirement. Since teacher educators tend not to receive external rewards for doing inservice activities, their motivation must often come from within. Teacher educators can generate their internal rewards when quality local programs are conducted by vocational agriculture teachers who have been inserviced by the university.

How is Inservice Education Planned?

In order to develop and maintain an effective and efficient inservice program, it must be well planned. This should include an accurate estimate of the needs of the teachers, the resources available, and the people that will

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assist in delivery. Planning should involve all groups that are affected by the inservice program. This planning group should include vocational agriculture teachers, state staff members, teacher educators, and industry representatives. This advisory committee should be officially recognized and approved by the professional teacher organization, the state department of education, and the universities involved.

The advisory committee. Each member of the committee should be carefully selected based on several criteria. The vocational agriculture teachers should represent both general and specialized program interests. For example, if a specific teacher is interested and responsible for key planning in Adult Farm Business Management (FBM), it is more likely that relevant activities will focus on technical FBM skills and new methodology in adult education.

The teacher should also represent a specific geographic area and a "constituency." As a representative, the teacher should be aware of the needs of colleagues and be able to estimate potential participation. As an opinion leader, these members will communicate the value of professional development to others.

The state staff and teacher educator members should be represented on the advisory committee by individuals who are interested in a wide range of subject matter and delivery techniques. These persons should represent or have association with the program area as well as funding sources. The teacher educators should represent the universities with a genuine commitment for inservice education.

The advisory committee should have the authority to plan and evaluate inservice education programs. This responsibility includes the determination of needs, coordinating long-range planning, monitoring all inservice activities and evaluating the effectiveness of each inservice activity as well as the overall program.

Inservice education can be fun! Mr. Dan Rowsey (L), Lafayette High School, Drew Lenard, Vaiden High School, Wilbur Chancellor, Choctaw County Vocational Complex, and Glen Shinn, Mississippi State University, discuss the bright side of teaching vocational agriculture.

Dr. Glen C. Shinn, Professor of Agricultural and Extension Education at Mississippi State University, preparing materials for an inservice activity on new teaching and curriculum materials.

Developing the plan of work. Just as a FFA chapter needs a program of activities, an effective inservice program needs a well prepared plan of work. This should include an annual plan which usually begins in July and includes all activities which are to be conducted during the year. An initial survey of all vocational agriculture teachers will provide sound needs data beneficial for planning. Marshall, et al (1982: 418) has conducted research which suggests that "the perceived inservice needs of individual teachers change from year to year but the overall pattern of needs for large groups of teachers is relatively stable." This annual plan will help eliminate duplicated efforts as well as allow for the lead-time necessary to organize and conduct a sound program. Resource needs should be budgeted so the activities can be delivered. The annual plan should include the proposed locations as well as the estimated number of teachers who will attend.

The second part of the plan of work should include a three year plan. These activities may be more general but are the results of the expressed training needs of the profession. This long-range plan will also be beneficial for other agencies to use in developing their needs statement and training plans.

Involve industry in inservice. There is a wide variety of people in agricultural industry who are interested in professional development. Many firms will assist in providing training materials, teaching aids, and technical expertise. The plant and animal industry as well as those in mechanization have been active in providing or assisting with quality inservice education. These groups are especially valuable to state-wide programs and industry-based short courses. Three key points help to involve industry personnel:

1. describe the training goals and objectives in simple, practical terms.
2. demonstrate quality and interest on both the part of the trainer and the trainee. Everyone wants to be a part of success.
3. ask for assistance — and follow up with a thank you when they do!

How is Inservice Education Financed?

A sound educational rationale and the best made plans are of no benefit if the inservice program cannot be financed. Fortunately, there are several ways to pay the bill. Remember, you are much more likely to find the money if you have developed your plan. Every state plan for vocational education has provisions for funding inservice education. There is flexibility in Sub-part 3 for financing quality inservice activities. Each state may plan differently, but they all plan!

Universities are also in a position to deliver low-cost inservice activities. Several conduct non credit workshops and summer clinics that involve the university community. Faculty from such colleges as agriculture, education, business and industry and veterinary medicine and the staff of the experiment station and the Extension Service can contribute in professional development. Several universities have a memorandum of agreement which provides a number of graduate courses with a waiver of fees. If your state university does not have this arrangement, the advisory committee may want to discuss it with university administrators.

Agricultural industry is also an excellent source to tap for financial assistance. Many of these industries are willing to provide technical assistance as well as the use of their training facility during their off season. The three year plan will be very beneficial since agricultural industry usually plans their activities one year in advance.

Perhaps the most important group in financing quality inservice education programs are those who benefit from them. Teachers should be willing to pay part of the costs, either from local school funds or as a professional development expense. Because a large percentage of the returns from inservice education result in local program improvement (better teaching, supervision, and leadership), the teacher should not be expected to finance the entire cost of an inservice program. Quality programs are almost always a bargain and poor quality is seldom good at any price!

Summary

The quality of a vocational agriculture program is seldom better than the quality of the local teachers. The quality of the teacher can be enhanced by a programmatic inservice education program. As a profession, agricultural education has been an innovative force in developing and conducting inservice education. However, 25 percent of the teacher educators reported they do not spend any time conducting inservice programs. The need for inservice, in many instances, remains unmet. As local programs adjust to a rapidly changing society, inservice education can make the difference in quality as Job 1!

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THEME

Teacher Inservice Speeds Change

By C. Van Shelhamer

(Editor's Note: Dr. Shelhamer is an Assistant Professor of Agricultural and Industrial Education at Montana State University, Bozeman, Montana 59717.)

When was the last time you attended an inservice workshop on a new technology? Was it one year ago, two years ago, three years ago or more? Is it possible that teachers are training future agricultural workers with antiquated technologies and information? Hopefully, teachers are teaching the lastest technology, but with the knowledge pool doubling every six years, it is questionable whether it is possible to keep abreast with technology.

As a secondary vocational agriculture teacher, I soon learned to look to the teacher education department for assistance in keeping current with technology. Now, as a teacher educator in charge of inservice education, I am faced with the dilemma of what to include in inservice training which will create change by acquainting teachers with recent educational and technological innovations. Innovations which will change teacher behavior and improve the quality of instruction received by vocational agriculture students are essential to our program today.

In a recent study on the "Impact of Agriculture Mechanics Inservice Training on Montana Vocational Agriculture Programs", it was found that local teachers of agriculture perceived inservice training to be the most effective activity in bringing about change in agriculture mechanics programs. Eighty-one percent of those who participated in the annual ten-hour inservice programs indicated that inservice training was a major factor in causing a change in instructional units, curriculum organization, instructional materials, instructional methods, or time allocated to an instructional topic.

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Teacher Inservice Speeds Change

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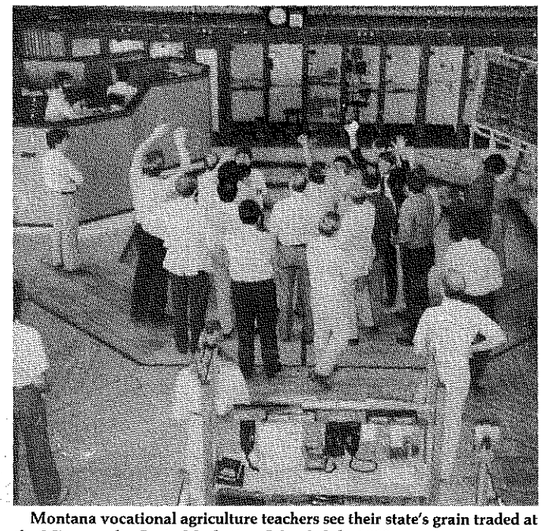
Specific inservice instructional techniques which were reported to be the most effective for creating change were: hands-on activities, worksheets, and demonstrations. Instructional materials used during the workshops were reported to be the number one cause of change in instructional material used at the local level.

The data also reveal that most participators were incorporating the inservice training into their local programs within one year of the training session. Many of the teachers were incorporating the training the same year as the workshop. The data revealed that vocational agriculture teachers were changing their instructional techniques as a result of observing new or different instructional methods used during the agriculture mechanics inservice training.

Those teachers who chose not to participate in inservice training indicated that an increase in funds for equipment and the material included in district FFA mechanics contest were the most effective factors in creating change in their local agriculture mechanics program. However, it was interesting to note that a small percentage of the nonparticipators also began to teach the instructional topic taught during inservice training.

Changing Teachers

The ability of inservice education to serve as an effective change agent depends on numerous conditions which must be recognized and considered when designing inservice training programs. Inservice should seek to change teacher behavior which leads to more effective instruction. In order to accomplish this, participators must want to improve themselves; must recognize that they have a



Montana vocational agriculture teachers see their state's grain traded at the Minneapolis Grain Marketing School, July 1982.

Montana vocational agriculture teachers receiving instruction during the 1983 inservice training on utilizing microcomputers.

weakness in the area of training; must have the time, energy, and teach in a permissive climate in which to incorporate the training.

Teachers must receive the training from someone who is knowledgeable in the new area and they must receive support from someone during the implementation of the new knowledge. Also, affecting the chance of implementation is the fact that generally there is no direct payoff to the teacher for making improvements in his/her instructional process.

Joint Effort

On the other hand, teacher educators in charge of inservice education identify, by means of inservice advisory councils and state professional organizations, problems which teachers face at the present time. They must then develop a five year plan for inservice education with instructional units, which can easily be incorporated into the local program. The instructional unit should include instructional activities and materials which can be internalized into the local program with a minimum of effort on the teacher's part.

In addition, personnel in charge of training must insure that the participators are competent upon completion of the training session. If teachers encounter problems when incorporating the new material, their interest will decline and implementation of the training will likely cease, unless someone is there to provide leadership and regenerate interest. The key questions for designers of inservice training are what changes can be expected in teacher behavior as an outcome of inservice education, and do the changes improve the local instructional programs?

The key question for vocational agriculture teachers is: can they afford not to become involved in inservice training if they are going to prepare students for employment in a technological society? I do not believe teachers can ignore inservice education, nor can teacher educators ignore their responsibility to utilize inservice training to bring about change in the local program. As agricultural educators, we must strive to work jointly to meet the needs of all our vocational students.

THEME

Quality Preservice Programs Begin With _____ (Fill in the Blank)

By John R. Crunkilton

(Editor's Note: Dr. Crunkilton is Professor and Program Area Leader in Agricultural Education at Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.)

Preservice teacher education programs in agricultural education have been around a long time. It is evident by the theme for this issue of The Agricultural Education Magazine that the profession perceives we have not achieved that quality of excellence, for if we had, the theme would be inappropriate. I agree that we have not reached the ultimate level of quality which we are capable of achieving and perhaps that is good. With the perception that the epitome has not been achieved, we are continually probing, asking, searching, and experimenting with new concepts or ideas.

What is quality? Specifically, what is a quality preservice teacher education program? We could list a number of elements that are necessary for a quality program, e.g., facilities, equipment, instructional resource materials, money, and so forth. The quantity of these elements can be determined and it is very easy to judge if a slide projector is of a quality that will permit it to function as we need it to supplement instruction. But, material things may not be the critical factor in quality preservice programs. These elements make it nice and perhaps more enjoyable to work in a program, but in the end, these non-human things do not make a program go nor are they the deciding factor on which quality is based.

The Human Resource

The most critical element of a quality preservice program centers around what one may call the human resource. The structure of the human resource can be separated into two major areas, attitudes possessed by individuals and competence of these individuals. A desirable positive attitude combined with competence can overcome any material barrier or limitation faced by an agricultural educator, at any level of the education spectrum. The reverse is also true in that competence combined with a positive attitude will overcome many barriers. This is not to imply that each and every problem faced will be solved to the complete satisfaction of an individual who has positive attitude and competence, but if these two characteristics are evident, time and progress will move our profession closer to the level of excellence desired. An approach to emphasize the interrelationship that exists between the human resource in agricultural education and the characteristics of positive attitude and competence has been presented in Figure I. The interrelationship can be conceptualized when the human resources are inserted on either end of the phrases, and on any line.

For example, an agricultural teacher's positive attitude imprints positive attitudes upon students, other teachers, and even teacher educators. A student's competence in an undergraduate program models competence for other students in the program. A supervisor's positive attitude complements the positive attitude of the support staff associated with the program. The key to this interrelationship is that all of us need to accept the responsibility of working with others through our positive attitude and competence.

In summary, all human resources impact upon each other and all others in our profession. This is where quality starts. This is where quality ends. If the quality dimension of positive attitude and competence is upheld, then quality preservice programs are more likely to materialize.

	_____ Positive Attitude	IMPRINTS	Positive Attitude upon_____	
	_____ Positive Attitude	ENHANCES	Positive Attitude of _____	
Teacher Educator	_____ Positive Attitude	REINFORCES	Positive Attitude of _____	Teacher Educator
	_____ Positive Attitude	COMPLEMENTS	Positive Attitude of _____	
Supervisor Teacher	_____ Positive Attitude	MODELS	Positive Attitude for_____	Supervisor Teacher
	_____ Compentency	IMPRINTS	Competence upon_____	
Support Staff	_____ Competence	ENHANCES	Compentence of _____	Support Staff
	_____ Competence	REINFORCES	Competence of _____	
Student	_____ Competence	COMPLEMENTS	Competence of _____	Student
	_____ Competence	MODELS	Competence for _____	

Figure I. Interrelationships of Human Resource Quality Influence

THEME

Leadership Preparation for our Teachers

By Vernon D. Luft

(Editor's Note: Dr. Luft is an Associate Professor in the Department of Agricultural Education at North Dakota State University, Fargo, North Dakota 58105.)

A quality teacher education program in agriculture must provide leadership preparation for prospective teachers. Is this being accomplished? I believe it is in more ways than people realize. This article will examine these various ways.

Initial Perception

The initial perception agricultural educators have of leadership preparation for teachers is directed towards the ability to function effectively as an FFA advisor. This important preparation is accomplished, in part, by participation in activities of collegiate agricultural education student organizations such as Collegiate FFA Chapters, Alpha Tau Alpha, and Agricultural Education Societies. However, leadership preparation for teachers must be broader in scope.

A teacher is a leader. In order to be an effective teacher one must be a leader. Teacher education programs in agriculture contain courses and activities designed to prepare effective teachers. Therefore, I feel it is safe to say that agricultural education teacher education programs are involved in leadership development to a significant level.

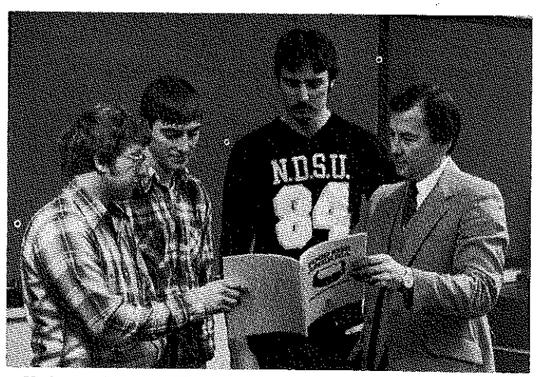
Leadership Defined

Leadership has been defined as the means by which one or more persons aid a group in setting and attaining desirable goals (Kreitlow, Aiton, and Torrence 1965). Wills (1974) defined a leader as the person who has the ability to get others to act in a certain way. A leader has also been defined as a person whose responsibility it is to: (1) help a group to define their goals; (2) bring to a group ideas about objectives which should be accomplished; (3) maintain the group so that they can accomplish the goals and establish additional new goals.

Contrary to popular opinion, leadership characteristics are not inherited. They are developed over a period of time. Thus, a teacher education program in agriculture can have a major impact on the leadership development of prospective agriculture teachers.

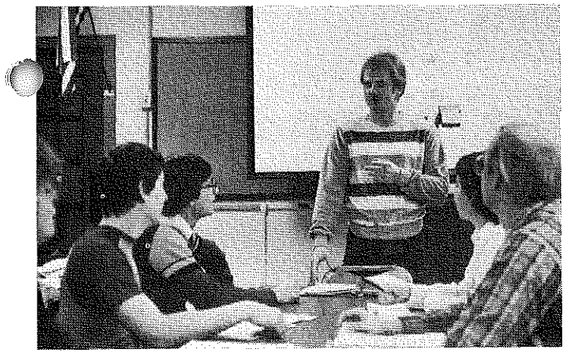
A vocational agriculture teacher, by virtue of his/her position, is placed in a leadership role. Gordon (1977) indicated that being a leader of a group does not necessarily make you a leader. You still have to do a lot to gain acceptance and have an influence on the behavior of the group. This acceptance and influence must be a personal accomplishment by each individual teacher.

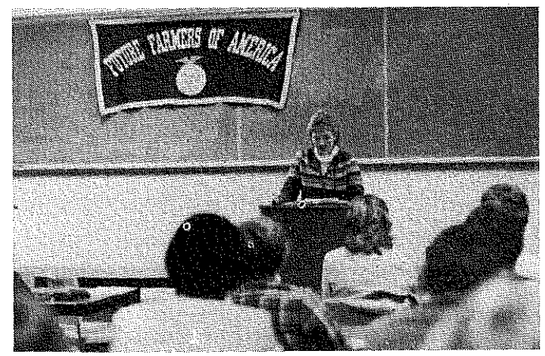
Oftentimes the current situation is a contributing factor toward a person being termed a good leader. This view emphasizes the situation as a factor that lays the groundwork for a person to take on the role of the leader and exert influence in line with the force of the situation. For example, a teacher of vocational agriculture may take a position in a school where the program has deteriorated considerably in quality. If the teacher is successful in building the program, he/she may be considered a good leader or excellent teacher. On the other hand, if the same individual were in a school where the vocational agriculture program was considered to be of good quality, the teacher may be considered an average leader or teacher while performing just as competently as the teacher in the previously mentioned program.



Understanding the FFA programs and activities are important to becoming an effective local FFA Advisor.

A good leader must be capable of leading a group discussion such as these teacher education students are doing.





Speaking skills can be developed in agricultural education students by making presentations in small groups.

Activities Which Develop Leadership

What is being done in teacher education programs to develop the leadership abilities of prospective teachers? As these activities are discussed, I would like you to keep in mind the definitions presented earlier. First, let us look at the classroom instruction in agricultural education that can contribute toward the development of a leader.

A leader has to help a group define their goal or objectives, and work with them in meeting these objectives. The same is true of a teacher. Students in agricultural education are taught how to determine and write objectives. They are taught how to help their students through the various learning activities that will enable them to meet the objectives. This might be accomplished in a methods course, a program planning course, or a curriculum development class.

Goal setting exercises might be carried out in a supervised occupational experience coordination class or in an adult education class. A teacher or leader must be adept in using the problem solving approach. The approach is nothing new in agricultural education. If students have been taught using the problem solving approach and are taught the use of the approach in teacher education programs, they should be quite competent in the utilization of problem solving.

A leader must be able to plan, organize, and carry out a plan. This can be related to lesson planning for teachers. Obviously, these skills are also taught in teacher education programs. A teaching methods course can do a great deal to develop these leadership skills. If students have to develop and present a lesson in a micro teaching situation, they are learning skills of planning, organizing, speaking, and leading a group to meet the specified objectives.

Let us not forget the student teaching experience. During student teaching, agricultural education students are definitely placed in a leadership role. The experience allows them the opportunity to apply the theory, skills, and methods taught in their courses. Many student teachers may already be quite competent leaders; in which case the experience allows them to sharpen their skills.

Many departments of agricultural education offer a course in leadership development in addition to those already mentioned. This class may be an opportunity for students outside of agricultural education as well as majors to develop leadership abilities.

Agricultural education student organizations also promote the development of leadership abilities in addition to developing the competencies which enables the student to become an effective local FFA advisor. Many students have a rich background in the FFA; however, others do not. Participation in a parliamentary procedure contest may be a new experience for some students while for others it is simply review. In either case, it is beneficial to the development of leadership skills.

Other activities carried out by agricultural education student organizations that might develop student leadership abilities include planning and carrying out a banquet; participating in committee assignments and activities; planning and conducting meetings; and those activities which may be unique to individual groups.

Summary

It is evident that leadership preparation for prospective teachers of vocational agriculture is being carried out in teacher education programs in more ways than through student organizations. Many of the skills that are taught to prepare competent teachers are also those necessary to be a good leader. Quality programs of teacher education in agriculture are providing leadership preparation for our teachers.

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Coming . . .

August	Achieving Quality Adult/Young Adult Programs
September	Achieving Quality Laboratory Projects
October	Achieving Quality Student Organizations
November	How Others Perceive Us
December	Assessing Student Performance

ARTICLE

A Problem and . . .

Technical Skills in Your Program

What skills do you teach in your vocational agriculture program? Do your students actually learn to perform the essential skills? These questions focus attention around a crucial phase of the instructional program in vocational agriculture.

Vocational education in agriculture has as its major objective the preparation of youth for employment in agricultural occupations. This preparation should include acquiring a knowledge of principles and procedures, developing proper work attitudes, and developing the ability to perform specific technical skills.

Vocational agriculture teachers have traditionally done a sound job of teaching certain types of technical skills to their students. For example, few students complete an agricultural program without learning to balance livestock rations, determine fertilizer requirements, or keep accurate records. However, these are paper-and-pencil skills that can be easily practiced and developed in a regular classroom setting. Other types of technical skills, those actually performed with the animal or machinery, present special instructional problems for teachers.

By Edward W. Osborne

(Editor's Note: Dr. Osborne is Assistant Professor of Agricultural Education at the University of Illinois, Champaign, Illinois 61820.)

In a recent study (Osborne, 1982) randomly selected Ohio agricultural production teachers were asked to report their experience at performing livestock skills pertaining to cattle, sheep, and swine production. Only those skills performed with the animal, as opposed to paper-and-pencil skills, were included.

A tentative list of skills was first identified through a literature review. Faculty members in the Animal Science and Dairy Science Departments at the Ohio State University then reviewed and modified the list of skills. Finally, livestock producers in the Columbus, Ohio area examined the list for accuracy and completeness. The result was the identification of 13 swine, 17 general cattle, 8 dairy, and 15 sheep skills believed to be necessary for production of each respective species (see Table 1).

How many of the livestock skills shown in Table 1 do you teach your agricultural production students to perform? If you are like the typical agricultural production teacher surveyed in this study, you taught only about one-half of these skills during the past year. Furthermore, you used discussion methods, as opposed to demonstrations and/or student practice, in over 60 percent of your livestock skill instruction.

Teaching students to perform technical skills does require extra effort by the teacher. Livestock and special equipment must be located and made ready, arrangements must be made with the school, students must be prepared, and extra time must be taken to plan, organize and deliver this type of instruction.

But are these the reasons that more agricultural production teachers do not teach their students to perform hands-on skills? The key may not be the amount of time available for teachers to organize such instruction. Instead, the real issue may be whether or not teachers have actually performed the skills themselves. And, if you are like most of the agricultural production teachers in this study, you have performed only about one-third of the livestock skills shown in Table 1.

The teaching of livestock skills and the methods used is apparently related

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TABLE I

Performance Skills Needed in Cattle, Sheep, and Swine Production

Swine

1. ear notch pigs
2. ear tag
3. clip tails
4. clip needle teeth
5. detusk boars
6. ring
7. castrate
8. give injections
9. artificially inseminate
10. probe backfat
11. treat for internal parasites
12. treat for external parasites
13. fit and show

Sheep

1. trim feet
2. treat for foot rot
3. ear tag
4. check temperature
5. treat navel cord
6. vaccinate
7. castrate
8. dock lambs
9. assist in lambing
10. shear
11. tag and crutch ewes
12. treat for parasites by drenching
13. treat for parasites with boluses
14. treat for parasites by dipping
15. fit and show

Beef and Dairy Skills (General Cattle)

1. treat for internal parasites
2. treat for external parasites
3. trim hooves
4. ear tag
5. tattoo
6. brand
7. treat navel cord
8. treat for bloat
9. check temperature
10. assist in calving
11. vaccinate
12. dehorn
13. castrate
14. artificially inseminate
15. palpate
16. implant growth stimulant
17. fit and show beef

Dairy Skills Only

1. treat calves for scours
2. draw milk samples
3. dry treat cows
4. install heat detectors
5. administer California mastitis test
6. treat for mastitis
7. use proper milking techniques
8. fit and show dairy

ARTICLE

. . . A Solution

Technical Skills for Teachers

The main objective of all quality agriculture teacher preparation programs is that of producing competent graduates who are well versed in how to teach and also possess a solid base of knowledge in technical agriculture. With the possible exception of agricultural mechanics, departments of agricultural education have traditionally left the teaching of technical agriculture skills to various departments within the college of agriculture.

These departments, understandably, tend to cater more to the needs of those students within their own departments. These needs may not necessarily coincide with the needs of agricultural education students. For instance, certain departments might see their goal as training scientists or management personnel and neglect the hands-on skills that are so vital to teaching high school vocational agriculture.

Technical Competency Needed

An analysis of a series of follow-up studies of agricultural education graduates at Oregon State University revealed that beginning vocational agriculture teachers in Oregon reported a lack of specific hands-on skills in a variety of areas, but particularly in animal science. The question arose of how best to address this problem.

Should the entire philosophy of an agricultural education department be that of educating students in how to teach or should it include educating

Students are provided the opportunity to perfect skills such as tail docking through "hands on" teaching instead of instructor demonstration.

By Ray Herren

(Editor's Note: Dr. Herren is in the Department of Agricultural Education and General Agriculture at Oregon State University, Corvallis, Oregon 97331.)

students in what to teach while teaching and demonstrating how to teach. This concept was integrated into the agricultural education curriculum at Oregon State University by organizing a series of practicum courses in animal science.

The Fall Quarter course concentrates on beef cattle competencies, Winter Quarter on sheep competencies, and Spring Quarter on swine competencies. The courses are taught not as a replacement for production courses taught through the Animal Science Department, but as a supplement to them. The main objectives of the practicum courses are to provide students with hands-on skills in livestock management, teach students how to set up and conduct classes in livestock management techniques, and teach students how to use community resources.

The courses are organized with one hour of lecture and three hours of laboratory per week. At the beginning of the class, students are given a list of competencies to be acquired during the quarter. Competencies include such managerial skills as castrating, worming, docking, vaccinating, etc.

Each student is required to perform the competencies. Their performance, combined with two written exams, provide the basis for grades. Class enrollment is limited to twelve people in order to provide everyone the opportunity for sufficient practice to develop the skill necessary to master the competency.

In addition to practicing skills, students are given instruction in organizing and conducting laboratory exercises in animal science. Laboratory teaching techniques are pointed out and emphasized in conjunction with and during the teaching of skills. Such topics as "How do you get everyone involved?", "What happens when things go wrong in the laboratory?", "What are the safety considerations in using live animals with high school students?", are covered as routine parts of the laboratory experience.

Community Based

Although the Animal Science Department was willing to cooperate through the use of university owned animals and facilities, the bulk of the classes are taught using community resources. Through the use of community resources, conditions more closely resemble the conditions under which vocational agriculture teachers actually teach animal science skills.

An actual farm presents a realistic rather than an idealistic situation. An added bonus of using community resources is the training the class receives in the use of these resources.

Students are made aware of the proper procedure to use in securing the aid of farmers and the use of their animals. Students learn which farms to choose, how to approach farmers for help, the responsibility incurred in using someone else's livestock, how to react if a farmer or rancher has an opinion or procedure that differs from the instructor's, and so forth.

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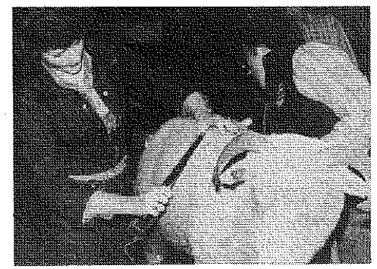


Some skills such as grooming and showing are missed completely in production classes.

A Problem and . . . Technical Skills in Your Program

(Continued from Page 20)

to whether or not a teacher has performed the particular skill. Teachers in this study who had performed the specific skill tended to be more confident in their ability to demonstrate the skill in a teaching setting. In addition, these teachers tended to teach the skill more often and to more frequently use methods involving skill demonstrations and/or student practice.

What can you do to improve the teaching of livestock skills in your program? Most teachers do have an inherent felt need to learn to perform such skills. If after reviewing the list of skills shown in Table 1 you find there are some you have not performed, make plans now to get some hands-on experience at performing those skills. Doing so can make your school and community instruction more effective.

Furthermore, your confidence as a teacher will be noticeably enhanced, and your students will appreciate and enjoy the practical instruction they are given. Parents, students, and others in the school and community will respect you for teaching your students to perform the technical skills necessary in livestock production.

Contrary to what many teachers believe, skills such as these can still be acquired after beginning to teach. A variety of strategies can be employed to overcome technical skill deficiencies. More and more universities are offering courses and workshops in technical agriculture skill development. However, teachers must make their colleges or universities aware of their technical inservice needs.

In addition, postsecondary institutions have traditionally been a good means of acquiring technical skills. Other more informal settings can provide the opportunity to gain needed experiences. These included friends, relatives, and college or university farms; local farmers, young farmers, FFA Alumni members, school land laboratories, professional conferences, workshops, teachers meetings, and others.

As a vocational agriculture teacher, you must believe that to not teach students to perform the specific skills needed in their chosen occupation is an injustice to them and to their education in agriculture. Put your program to the test. Can your students lay their pencils down and perform the required technical skills?

Reference

Osborne, E.W. Livestock skills taught in vocational agriculture and possessed by current and prospective Ohio agricultural production teacher. Doctoral Dissertation, The Ohio State University, 1982.

. . . A Solution Technical Skills for Teachers

(Continued from Page 21)

As the students become proficient in the skill competencies, they pick up incidental information that will be of value to them as vocational agriculture teachers. For example, students are taught to recognize the difference between those livestock problems that can be solved by the vocational agriculture teacher, and those problems that are best left to the veterinarian.

Summary

Student response to the practicum courses has been very positive. Upon entering the class, many of them have seen demonstrations of livestock management skills, but have never performed the task. Students recognize and appreciate the value of "learning by doing". Not only are skills obtained and perfected, but the students emerge from the practicums with an added degree of self-confidence. Beginning teachers who are competent in technical agriculture skills, have the necessary teaching skills to successfully convey that knowledge to others, and are confident in themselves, possess "those qualities of leadership that a future teacher should possess."

A Video Tape Review

Introduction to Plant Maintenance has emphasis on plant identification, environmental and cultural factors affecting plant growth that an interior technician must know on the job. This color video tape is available on VHS and Beta formats and is 32 minutes in length.

The film is organized like a TV show. The format "grabs your attention" with the first sound and holds it the entire time. It discusses over 20 different interior plants that are being used in today's interior landscaping. It also deals with the correct interior environmental and cultural conditions by discussing the proper watering, lighting, fertilization and temperature. It will help you to recognize various symptoms of an unhealthy plant and what you need to do to avoid them. Many common pest problems are discussed as well as the characteristic symptoms of plant stress.

The film was developed to train interior maintenance technicians. It gives exposure to botanical names of the interior plants. It does it in a way that the common name and botanical names are shown on the screen with the plant. This makes it possible for all students to obtain the correct spelling of both names for identification purposes and recognizing the plant by its physical characteristics.

The film is edited and organized to hold your interest by identifying 3 or 4 plants and then discussing their cultural requirement. This film will do in 32 minutes what takes the average teacher a week to teach!

It is available through the Associated Landscape Contractors of America, 1750 Old Meadow Road, McLean, VA 22102, Phone: 703/821-8611.

Carroll L. Shry
Horticulture Instructor
Frederick, Maryland

COURSE

Pipe Layout for Fitters and Welders Course

A new course in pipe layout, titled "Pipe Layout for Fitters and Welders," has been developed by the Hobart School of Welding Technology and is now available. Designed according to Hobart's programmed learning format, each page in the course package provides information for student learning, a section to test and demonstrate understanding and an answer section to measure student subject mastery.

Based in part on "The Pipe Fitter's and Pipe Welder's Handbook" by Thomas W. Frankland, the Hobart course offers extensive information on pipe terminology, mathematics, welded offsets, the length of cut pipe sections, rolling offsets, tees, pipe caps and various other pipe connections and operations.

Hobart's "Pipe Layout for Fitters and Welders" is developed in a format similar to that of previous programmed learning courses, "Symbols for Welding" and "Blueprint Reading for Welders and Fitters." Divided into ten sections, it incorporates written quizzes and mathematical tables.

For more information on Hobart's "Pipe Layout for Fitters and Welders" course, contact: Michael Roth, Supervisor of Technical Training, Hobart School of Welding Technology, Troy, Ohio 45373, Telephone: 513/339-6000, extension 4641.

TEACHING TIPS

Mower Appeal Yields Profits

You have probably found, at one time or another in your teaching career, that when it is time for the unit on small engines, you have some student who will not or cannot bring in an engine on which to get practical experience. Floyd Beneker, vocational agriculture teacher at Marshall, Michigan, has found one way to solve this problem.

Floyd places an advertisement in his local newspaper about October 1, a time when most people are about to junk old lawn mowers if they are considering purchasing a new one for next season. The advertisement usually reads: NEEDED — Old lawn mowers for students to practice small engine repairs. Will pick up in Marshall area. Phone: 781-5555.

The above advertisement resulted in 18 push mowers and one riding mower. As a result of this effort, every agricultural mechanics student of Floyd's had hands-on experience during the small engine unit.

Floyd's classes took parts from some of these engines, placed them on other engines and ended up salvaging five lawn mowers that ran well. He added a new spark plug to each plus a new muffler and sold them for $30.00 each. The riding lawn mower (5 HP) had the valves ground, new gaskets and seals added, and was sold for $90.00. The classes also stripped decks of the aluminum type and eventually sold $20.00 worth of aluminum.

Mr. Beneker calculated the expenses of the project at $30.00 and the income at $240.00. Net profit for the small engine project was a neat $210.00.

From File To Chisel

Finding appropriate projects for students to complete during a teaching unit on metalwork can be quite a challenge for a vocational agriculture teacher. Using common, on-hand materials around the school shop or the farm shop can be an appropriate and sometimes unexpected solution to the project search. Mr. J.H. Wilson, vocational agriculture teacher in Virginia, has found that old metal files can have a "new life" when made into a wood chisel.

Mr. Wilson states that because metal files are made from high carbon steel, they make an ideal source of steel for wood chisels. Mr. Wilson follows this procedure for manufacturing a wood chisel from an old metal file:

a. Anneal the file by heating it to a cherry red color and allowing it to air cool to room temperature. This will make the file soft and ductile. In the annealed condition the file can be sawed, shaped, drilled and sharpened. The heating process may be accomplished using an oxyacetylene torch, gas forge or an electric furnace.

b. After annealing, cut the tang off the file, drill two holes for placement of a wooden (hickory) handle, grind the file to the general shape of a wood chisel and sharpen the cutting edge to 25 degrees concave.

c. After sharpening, reheat the wood chisel to a cherry red color and then quench the chisel in oil or else dip the chisel in and out of hot water until the chisel has cooled to the water temperature (about 180 degrees F.).

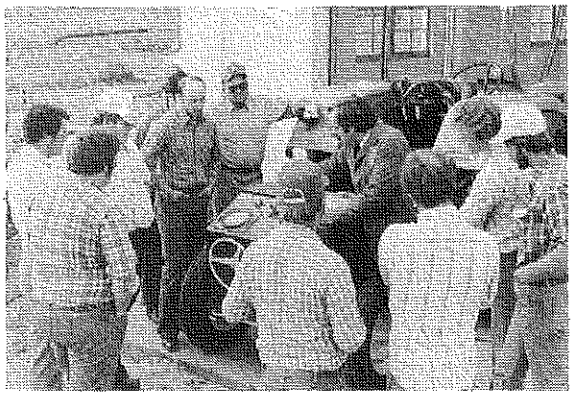
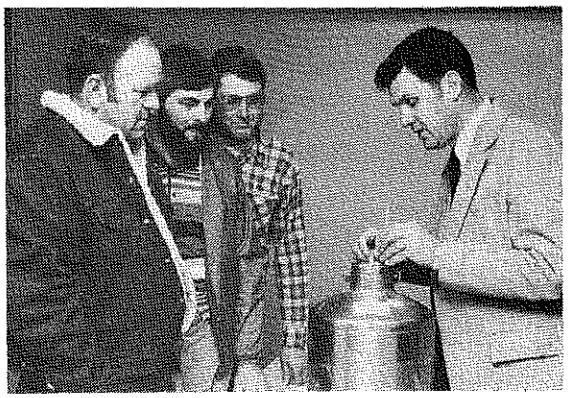
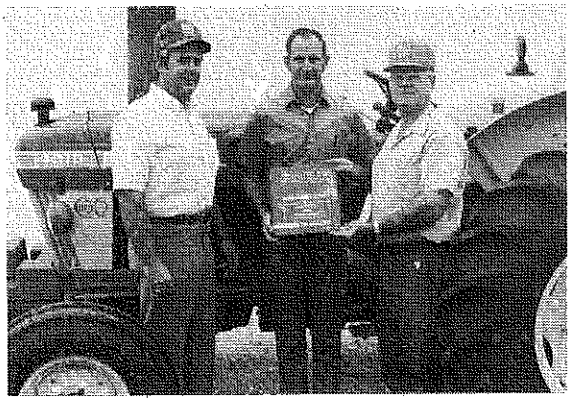
d. Polish the cutting edge, reheat the chisel in an electric furnace until the cutting edge becomes a straw yellow color (about 400 degrees F.), then cool to room temperature in cold water.

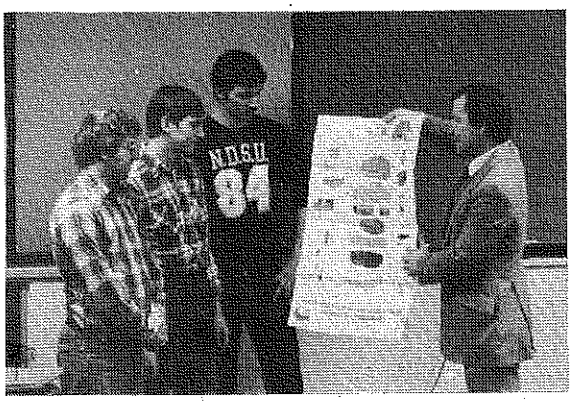
e. Fit the chisel with a wooden (hickory or oak) handle with the grain of the wood in a direction parallel to the chisel.

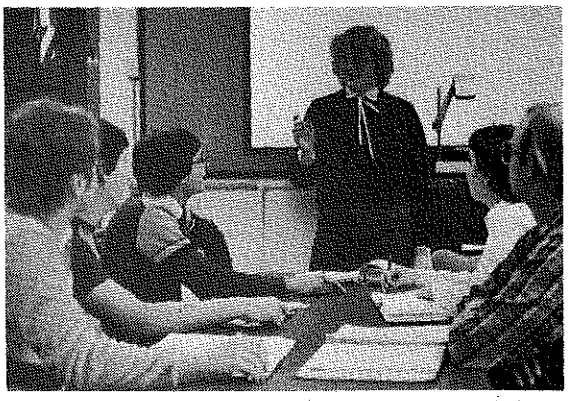
f. Hone the edge of the sharpended wood chisel.

g. Spray the chisel with a clear acrylic spray coating to prevent rusting.

Stories in Pictures





Preservice and inservice teachers can benefit from high quality educational programs that assures their technical and pedagogical competence. (Photographs courtesy of Glen C. Shinn, Mississippi State; and Vern Luft, North Dakota State University.)