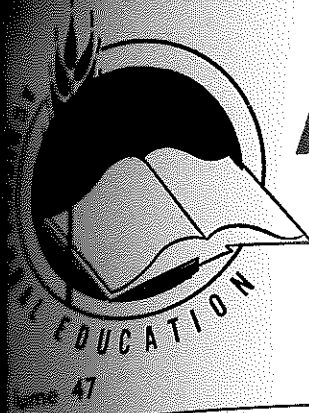




Evaluation in the Judge's Eye. — The President of the Slidell FFA Chapter (Louisiana) accepts the award for the Chapter's Grand Champion Ham. The award was made at the State Spring Livestock Show. (Photo from Dr. J. C. Atherton, Louisiana State University, Baton Rouge.)



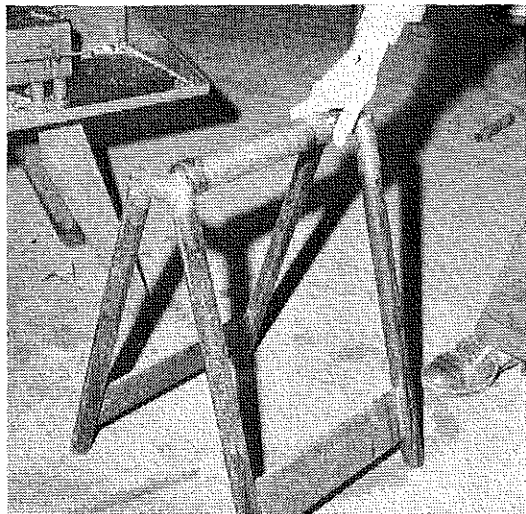
Results of Career Education Planning. Ray Chapman, 12, acting as a tour guide, displays results of his research project to visiting first grade students. Ray has inserted a "rooting hormone" into a plant which produces a strong root with lush foliage. This is part of Harbor Heights Elementary School career education project. (Photo from Alex Crewdson, Vocational Education Program Specialist, Washington State Council for Occupational Education.)



# Agricultural Education

August, 1974

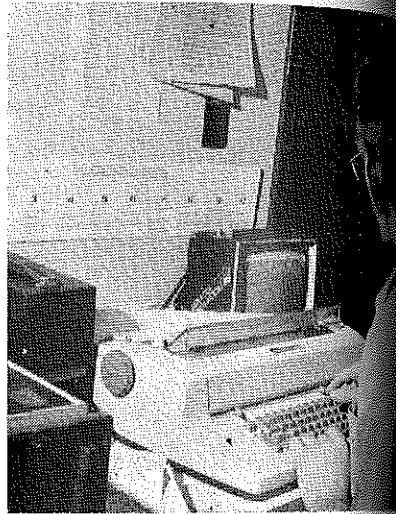
Number 2



Planning pays off in Agricultural Mechanics. Vocational Instructors team up at Tri-County High School in Nebraska. Two sealed, ball bearings were used to make a stand to support metal being cut in the bandsaw. (Photo by Richard Douglass)

## Stories in Pictures

by Richard Douglass



Self-evaluation for self-improvement with the help of the computer. Nebraska student teachers code videotapes of their teaching and get an instant analysis. (Photo by Richard Douglass)



Planning and Evaluation Pays Off. — The Virginia Vocational Association's OUTSTANDING SERVICE AWARD was presented recently to Carl S. Thomas, (right) assistant director, Bureau of Vocational, Technical and Adult Education, State Department of Education, Charleston. The presentation was made by W. H. Wayman, retired state supervisor of Vocational Agriculture. Mr. Thomas is now in charge of post-secondary and adult education and vocational schools in West Virginia. He served five years as state supervisor of vocational agriculture before assuming his new responsibilities. (Photo by W. H. Wayman)

*Developing Technical Competence*

Theme—TEACHER EDUCATION

Plus—Index to Volume 46

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The  
**Agricultural  
Education**  
Magazine

Vol. 47 August, 1974 No. 2

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COVER PHOTO:

Developing Technical Competence in Agricultural Educators. These Nebraska vocational agriculture teachers are updating their skills in a do-it-yourself in-service approach. In addition they are trying out available teaching aids. The teaching machine provides the instructions with appropriate feedback to multiple-choice questions. Instructors (left to right) are Gene Wissenburg, Newman Grove; Carl Brown, Ansley; Gerald Dux, Pierce; and Terrance Michalski, formerly from Bloomfield. (Photo by Richard Douglass)



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Editorials

From Your Editor . . . **AGRIBUSINESS DEFINITION CHALLENGED**



Martin B.  
McMillion

John H. Davis, a Harvard economist, coined the word "agribusiness" in the mid 50's to describe the interrelated functions of agriculture and business. Agribusiness was defined as "the sum total of all operations involved in the manufacture and distribution of farm supplies; production operations on the farm; and the storage, processing, and distribution of farm commodities and items made from them." Agribusiness now appears in dictionaries with much the same definition as that given it by Davis.

Various farm groups want the term agribusiness to apply only to off-the-farm agricultural activities and not to farming itself. They seem to feel that agribusiness should not be considered to encompass all of agriculture. The umbrella term they feel should be some other term than agribusiness. The line of thought seems to go: if farming is agribusiness, and farming is big business, and big business is corporate business; then, the image of farming is lost.

The term agribusiness and nearly every other term that denotes a part of the agricultural industry was questioned by somebody in the group that assembled at the National FFA Center on May 24, 1974 to give their views concerning a

John H. Davis and Ray A. Goldberg, *A Concept of Agribusiness*, Division of Research, Graduate School of Business Administration, Harvard University, Boston, 1957, p. 2.

Guest Editorial . . .

**WHO'S**

**PILOTING**

**THE**

**SHIP?**



Earl H. Knebel

A number of contemporary issues and recent trends in teacher education exist that result in institutional forces and jurisdictional interests within and among various state and Federal agencies, educational institutions, and professional organizations. Differing courses of action may be advocated. Among the prominent agencies and organizations which traditionally have jurisdictional interests, legal responsibilities, and involvement in teacher education are the U.S. Office of Education, state departments of education, state divisions of vocational and technical education, state boards of education, state advisory councils, state colleges and universities, professional educational associations, and boards of education for local school districts.

Teacher educators and supervisors in agricultural education and teachers of vocational agriculture should become

name for "our program" in the U.S.O.E. "Our program" is used because I did not learn what to call it at the meeting; however, Agriculture, Agribusiness, Natural Resources, and Environmental Occupations was the official term used at the time.

Among those in attendance were representatives of farm organizations, agricultural trade associations and groups, governmental agencies, land-grant colleges, agricultural education associations, and agricultural editors.

Five proposals for an overall term or title that would encompass our entire programs were discussed. The proposed titles were: A) The Industry of Agriculture, B) Agriculture/Agribusiness, C) Agriculture, Including Agribusiness, D) Agribusiness, and E) Agriculture. Under each of these titles were two additional terms, one to denote farming and ranching or other production and another to denote other agriculture.

Negative reaction to the use of the word "non-production" seemed almost unanimous. The term "production agriculture" seemed to suffer because of its being an antonym of "non-production."

Regarding the use of the term agribusiness, one farm organization representative said the separation as understood in the Star Farmer and Star Agribusiness Awards of the FFA was what he favored. He said, "The language should belong to the people. I am not in favor of some dictionary telling us to use something the people are not comfortable

(Concluded on next page)

familiar with these issues and trends in teacher education. They also should consider the implications for agricultural education as they analyze the interaction between and among the various agencies and institutions identified above.

Some educators are finding issues and current trends in teacher education to be disturbing and frustrating. They feel operational procedures, administrative structures, and philosophical foundations are being threatened. In fact, some teacher educators fear imminent changes . . . changes in administrative organization . . . changes in course content and methodology . . . changes in priorities and allocation of resources . . . changes in philosophical bases. Agricultural educators share in this frustration and concern. Some of our respected and experienced colleagues in agricultural education believe proposed and projected changes threaten the very existence of strong, proven programs in settings they consider to be unique. Resistance forces oppose proposed changes in most educational agencies and institutions. Those

(Continued on next page)

### From Your Editor . . .

with." He further said, "The two terms [farming and agribusiness] seem to be working and accepted by people with a wide point of view." Then he added, "If I were Neville [Hunsicker], I wouldn't want his title. It alienates the people he has to work with."

Another farm organization representative agreed with the first one when he said, "We in agriculture use 'agribusiness' for the non-production side of agriculture. Rural people have their minds made up. We don't look in the dictionary."

The dictionary definition of agribusiness as an umbrella term had some supporters. A forester, referring to himself as an outsider, commented on the recent trend of agriculture into corporate entities and said, "I think of agribusiness as the modern trend in farming." The forester's recollections of the percent of corporate farming prompted some defensive statements by two individuals from the farm group.

An interesting sidelight was the desire of the florists to be in production agriculture (agriculture as defined by the U.S. Department of Labor). The primary concern seemed to be fuel allocations.

Another person whose interests were neither in farming nor farm-related business felt, as I did, that perhaps our 1964 slogan "agriculture is more than farming" might need to be brought out again and updated to read, "agriculture

### Guest Editorial . . .

engaged in resistance believe sincerely that they are presenting sound judgments under conditions as they perceive the situation; likewise, those pressing for change and transition present strong rationales for redirecting programs and restructuring administrative organization.

One of the current trends in teacher education is an increasing commitment to performance-based teacher education; some educators prefer to use the term "competency-based teacher education." Another trend is the national movement to career education in public school education. The implication of career education for teacher education is a contemporary issue currently being debated. Some educational institutions and agencies are experiencing transition in administrative organization and structure from the traditional departments of vocational teacher education in specialized areas to a unified department of vocational teacher education. Some officials in institutions and agencies are advocating further unification of all teacher education into a broad intradisciplinary teacher education administrative structure unifying teacher education in one division or college.

## Themes For Future Issues

September — School Organization and Articulation

October — Instructional Technology

November — Improving the Profession — the Job and the Teacher

December — Better Teaching and Learning

is more than farming and agribusiness." The applied plant and animal science which is not farming and ranching and does not particularly serve farmers and ranchers needs attention too.

The term "industry" in "The Industry of Agriculture" title was challenged by a person who was obviously defining industry as it is used in the *Standard Industrial Classification*. He said "Agriculture is not one industry but several industries." His observation that educators needed to focus on *occupations* while the Bureau of Labor Statistics and Department of Commerce focus on *industries* was helpful.

Examples of title changes in state departments of agriculture and in colleges of agriculture which had been made to reflect a broadened definition of agriculture emphasized their problem rather than helped solve the problem being discussed.

"Agriculture" is perhaps the proper umbrella term, but limited success may be expected from another educational campaign to give it a broader definition especially after we have used "Agriculture/Agribusiness" and when the U.S. Department of Labor continues to define agriculture as essentially farming.

Your editor has turned reporter this month. I want to think about the alternatives for awhile. You now have some of the background information upon which to base your thoughts concerning the controversy. —MBM

It is time to challenge those in roles of leadership in agricultural education to assume a more positive posture on issues and trends that relate to teacher education in agriculture.

It is time to challenge those in roles of leadership in agricultural education to assume a more positive posture on issues and trends that relate to teacher education in agriculture. Teachers of vocational agriculture, school administrators, program supervisors and directors, and teacher educators all serve in important and strategic roles of leadership in shaping, teaching, and directing programs in agricultural education. In order to be effective, a leader in agricultural education must develop a sound philosophical base which can be articulated logically and realistically; he must be committed to public school education; he must establish definite attainable goals, and work toward attaining these goals in a professional and ethical manner.

(Continued on page 31)

### Research Study —

## FULL-YEAR INTERNSHIP VS. FIFTH YEAR PROGRAM

Robert J. Winterbourne\*

In February and March of 1973, a study of relative teaching effectiveness of thirty-six California High School Vocational Agriculture Teachers was conducted. The study was an outgrowth of suggestions from Mr. Donald Wilson, Chief of the Bureau of Agricultural Education and Mr. Warren Reed, Assistant Chief. They were interested in determining how well vocational agriculture teachers trained by the full-pay intern program were doing when compared with teachers trained by the traditional fifth year program in a teacher training institution.

The thirty-six teachers to be studied were randomly selected from lists of teachers who obtained their credentials between 1967 and 1971. Eighteen of the teachers were credentialed after having completed the full-pay intern program. The other eighteen completed the fifth year program at a teacher training institution.

Criteria on which the two groups of teachers were compared were as follows:

1. Effectiveness in teaching agricultural science
2. Effectiveness in teaching agricultural mechanics
3. Effectiveness in supervising student practice programs
4. Effectiveness in advising FFA activities
5. Knowledge of subject
6. Class preparation and use of techniques
7. Class control and continuity of control
8. Student centered vs. authoritarian approach
9. Evaluation of student performance
10. Personal and professional characteristics

With the assistance of the Bureau staff, questions were written to evaluate teachers on each of the ten criteria selected. Two questionnaires were

\*Robert J. Winterbourne is a former teacher of vocational agriculture who is now on the counseling staff at Cal Poly, Pomona. The study reported here is his dissertation research completed at U.C.L.A. in 1973.

developed, one to be completed by students of the teachers in the study, the other to be completed by the teachers themselves.

The questionnaires were administered to a random sample of students of each of the thirty-six teachers. Each teacher also responded to the questionnaire with his perception of his relationships with students in various teaching situations.

The primary finding of the study was that there is no significant difference between the two groups of teachers trained by different methods either in the way they are perceived by their students or in the way they perceive themselves in their relationships with students.

I must emphasize at this point that this major finding of the study must be interpreted with caution. There are many facets of a teacher's total effectiveness in his job which were not taken into account when making this comparison. The only thing this study focused upon was student perceptions of the teacher as they experienced him in various teaching situations and teacher self-perceptions in those same situations. I feel it is significant, however, that intern trained teachers fared as well in this comparison as did teachers trained by the fifth year program. There were marked differences in the way various teachers were evaluated by their students and by themselves. Some teachers had quite high ratings, others rather low on various aspects of teaching performance. It appears that the questionnaires used are sensitive to differences in quality of teaching performance as perceived by students and teachers. The study indicated, however, that these differences in quality of teaching performance were due to some factor or factors other than method of teacher training. It was concluded that of the two types of teacher training studied, neither can be considered significantly superior to the other in contributing to the quality of the teacher-student relationship.

When student perceptions of teacher behavior are communicated to teachers, teachers tend to modify their behaviors in the direction of the students' ideal teacher.

There were a number of other rather interesting outcomes of the study which have implications for teacher training and for in-service professional growth programs for teachers of vocational agriculture.

One finding of the study was that the greater the difference between student perception and teacher perception of what is occurring in the teaching-learning situation, the lower the students tend to rate their teacher. A study recommendation is that vocational agriculture teachers be encouraged to utilize some system of continuous feedback from their students which will reveal to the teacher the perceptions of his students concerning specific aspects of the teacher-student relationships. Previous studies have indicated that when student perceptions of teacher behavior are communicated to teachers, teachers tend to modify their behaviors in the direction of the students' ideal teacher. Further this modified behavior is reflected by higher student ratings of teacher performance.

Another finding of the study was that students consistently rated teachers lower than teachers rated themselves on questions dealing with the quality of the one-to-one relationship between teacher and student. A study recommendation is that greater emphasis, both in the fifth year and the full-pay intern teacher training programs, be placed on developing skills in, and sensitivity to, the individual relationships between the teacher and each of his students. Such training could also be made available on a continuing professional improvement basis during Summer Skills Week.

(Concluded on page 40)



# TEACHER EDUCATION ADVISORY COUNCIL MEMBERS SELECTED AT RANDOM-- A Success Story

Alfred H. Krebs, Teacher Education  
Virginia Polytechnic Institute and State University



A. H. Krebs

There has long been a strong interest in finding ways to involve people in the development and evaluation of programs which affect them. One of the more effective techniques for securing this involvement has been the representative advisory council, sometimes known as a consulting committee. When properly constituted, representative advisory councils have been of great value. The key to the success of an advisory council is, as with most groups, having able and interested members. While a variety of procedures can be used for securing the council membership, the procedure most likely to provide the best result is a random selection procedure. This method of selection was used in organizing an agricultural teacher education advisory council for the State of Virginia. The procedure and the results are worth consideration by all who believe in lay citizenship involvement in education.

## Clear Purpose Critical

Before deciding on the membership of an advisory council and how to select it, it is first very important that the purpose for establishing the council be clearly understood. Many advisory groups designated as "representative" of some population are actually special purpose groups. For example, many teachers have advisory groups to help them with particular aspects of an option program such as ornamental horticulture. If all the teacher wants is help in securing free teaching materials and placement opportunities for students, he would be best advised to select from three to five of the best known leaders from among the owner-managers of the local and area ornamental horticulture businesses. If, on the other hand, the teacher is interested in securing the advice of those served by the ornamental horticulture program, the population from which members should be obtained includes all those served. The purpose for which the advisory group is organized influences both the definition of the population from which the membership should be selected and the method of selection of the members.

In the case of the Virginia Agricultural Teacher Education Advisory Council, the purpose for organization was quite clear. The teacher education departments at Virginia Polytechnic Institute and State University and at Virginia State College wanted advice and counsel with regard to all aspects of the teacher education programs provided for the agricultural education (vocational agriculture) teachers of the State. For accomplishing this broad, general purpose, a representative advisory group selected from the population of teachers of agriculture was indicated.

## Selecting the Membership

Once the purpose for organizing the council had been defined, the procedures for selecting the members from the indicated population could be implemented.

A random selection procedure was determined to be the best procedure to follow. To secure the council membership, the following steps were taken:

1. A committee was appointed to select the council members. Members of the selection committee included the head state supervisor for agricultural education, the two head teacher educators in agriculture, the president of the Virginia Vocational Agriculture Teachers Association, and two teachers of agriculture.
2. A list of the teachers was obtained and up-dated for each of the six agricultural education supervisory areas of the State. To insure representation from each area, it had been decided to select members at random from each area. The desire for proportional representation resulted in the need for two representatives from each of four areas, one representative from the smallest area, and three representatives from the largest area.
3. The teachers on the lists were numbered consecutively beginning with the number "one" in each area. Using a table of random numbers, and involving each of the committee members in the process, numbers were chosen at random until a list of five or six teachers was obtained for an area with the names listed in the exact order in which the random numbers were drawn. This procedure was repeated for each of the six areas.
4. The first names on each list for each area, up to the total number of representatives needed, became the persons nominated for council membership. The teachers thus identified were notified, after appropriate contacts with superintendents and principals, and all agreed to serve.
5. The first meeting was called and chaired by the head teacher educators. At the first meeting, a teacher was elected to serve as chairman.

The basic procedures for organizing and working with the advisory council were developed by the teacher educators and were subsequently approved by the appropriate University administrative authority. Since 1969, when the first members were selected, new members have been obtained using the same procedures. The maximum length of term on the council was fixed at three years with the first twelve members drawing for a length of term of one, two, or three years. The length of term for each member from one area

(Concluded on next page)

(Krebs—from previous page)

was also staggered to provide for continuity in representation. Interestingly, the only woman teacher in the State became one of the council's first members.

Because each teacher had approximately the same chance of being selected, no explanations were needed for appointing any particular individual or a teacher representative of a particular school or program. It was not necessary to complete a detailed personal information questionnaire on possible candidates just to make sure differing groups, types of programs, sizes of schools, political affiliations, organizations, and a dozen other factors were reasonably represented. Even the need for some pseudo-selection procedure was eliminated.

## Operation and Achievements

The first years of the existence of the council were most interesting. Once teachers fully understood how and why they became members of the council, they accepted the responsibilities associated with membership and contributed immeasurably to the State agricultural teacher education program. The following are a few of the major contributions of the council:

1. Assisted in re-structuring the undergraduate agricultural teacher education curriculum. The teachers saw more clearly than anyone else the need for a flexible curriculum to make it possible to design student programs of study based on individual student strengths, needs, and teaching goals.
2. Assisted in designing and setting priorities for the preparation of materials for use by teachers.
3. Evaluated and provided guidance for the development of credit and non-credit in-service education programs for teachers.
4. Reviewed and provided suggestions for the research program in agricultural education.
5. Served as a communications link between the teachers and the teacher educators on a myriad of problems and issues. The value of direct communication with teachers regarding teacher education cannot be over-estimated. There is no substitute for an informed teacher, in whom other teachers have faith, as a communications link between teachers and teacher educators.

(Knebel—from page 28)

It is neither the purpose of this editorial to weigh the merits of trends and issues raised in previous statements nor to challenge the roles or extent of involvement in teacher education of the various agencies, institutions, and organizations identified. One would be quite naive if he failed to recognize the very real existence and impact of different agencies, institutions, and organizations as they collectively affect teacher education. This "complex" makes up "the system" responsible for teacher education. None of the "parts of the system" can or should be "wished away" or ignored. All have important roles and contributions in the strengthening and conducting of teacher education.

What then are the roles of leadership and responsibilities of those of us concerned with and involved in vocational teacher education in agriculture? Several options or an amalgam of alternatives are available for our consideration.

As with all successful representative advisory councils, it served basically as a study group seeking information and considering all aspects of a problem or program element before formulating recommendations. While some observers who were unhappy with certain recommendations would from time to time recommend that a "new sample be drawn," most of the Virginia agricultural education profession developed a deep faith in the advisory council. In fact, the knowledge that any teacher of agriculture might become a member added to the meaningfulness of being a member. In addition, the very effectiveness of the council led to comments by many teachers that other groups of teachers should have their memberships obtained in the same way to increase the influence of teachers generally in the decision making process.

## Conclusion

This experience with a teacher education advisory council with a membership obtained by a random selection procedure has been very rewarding in many ways. The council, by its contributions, demonstrated that:

1. A truly representative group of teachers can and will provide sound counsel on problems in teacher education in agriculture.
2. The fear of getting members who will be detrimental to the teacher education program is unfounded.
3. A group of rational individuals with time to obtain and consider all available information about a program element or problem will develop sound recommendations.
4. Teachers of agriculture are a truly professional group and sufficiently interested in agricultural education to give of their own time and energy to help develop a better agricultural teacher education program for all.

While other methods of selecting advisory council members might have resulted in a group of teachers equally able to provide the desired guidance, it is doubtful that the teachers themselves would have been as firmly convinced of the sincerity of the request for assistance and as personally satisfied that the full concerns of all teachers were being considered. Try it! You'll like it! ◆◆◆

Suggested alternatives include the following:

- 1) Identify and understand the various agencies, institutions, and organizations that make up the "system" responsible for teacher education. We must work together with the "parts of the system" as professional members of the team.
- 2) Recognize that teacher education must survive and flourish in an academic and political arena in competition with many other important and strategic segments. Teacher education needs effective professionals serving in roles of leadership to promote teacher education. Agricultural education should provide its share of leadership.
- 3) Place total confidence in those serving in administrative and supervisory roles of leadership in the various agencies, institutions, and professional organizations.

(Concluded on page 34)

# EXPLORATORY TEACHING FOR ETHICAL GUIDANCE



Larry Miller

One of the most fundamental tenets of the teacher education program is that of providing realistic experiences through student teaching. These experiences should not be taken lightly. Research has shown through both objective and subjective evaluation that the experience is one of the most meaningful in the teacher training program. Upon querying typical graduates, they quickly inform you that the most valuable portion of their undergraduate training was student teaching. This is as it should be; since teacher educators have "spared no quarter" in selecting the very best teachers, the very best programs, and arranging for the most appropriate experiences possible for the student teacher.

Education is now caught-up in the models proposed by Career Education. One interesting concept being advocated is that of exploration/orientation, which allows students to investigate potential fields of study that seem to interest them. This concept can be applied to prospective teachers in agricultural education as well as intermediate school children.

It has been proposed that one reason people enter the teaching profession is that they have been around teachers for a number of years, seem to have a concept of their function, and believe they would like to assume that role. Would the teaching profession seem so alluring if they had spent an equal amount of time with a veterinarian, lawyer or doctor? Are the preconceived functions that prospective teachers perceive real? Would they get a more realistic viewpoint by exploring the profession of teaching earlier in their collegiate career?

Larry Miller  
Teacher Education  
VPI & SU

*The ethical approach for the teacher educator is to assure that those who are enrolled in the undergraduate curriculum are provided with experiences that will allow them to make appropriate career decisions, before it is too late for them to change direction.*

Several attempts have been made in education to assess the effects of early experience during the academic-professional preparation process. Few have been thoroughly tested and evaluated in agricultural education. Most preparation programs in agricultural education at the introductory course level include various and sundry visits to the classroom to view facilities, watch classes in session, and visit with the vocational agriculture instructors. These are valuable field trips, but lack the real life experiences necessary for the pre-teachers to determine if this is the profession for them.

An investigation of the literature in the field of student teaching, and early experiences, shows that many different and varied attempts have been subject to experimentation. Some include summer experiences, cooperative five-year programs, summer experiences with an overlap into the school session,

enrolling for internships (field experiences) during the regular academic year, and other variations. Few can be counted as actual early experiences since they commonly occur in the junior or senior year.

Dr. Woodin's longitudinal studies of the supply and demand for agricultural education (vocational agriculture teachers illustrate that scarcely fifty percent of those trained actually teach. The big counterargument to the proposition of early experiences is that it might dissuade teachers from entering the profession in a time of dire need for teachers. It is important to actually do justice to prospective teachers, help them elect plausible career choices, save them years of preparation and financial expenditures and allow them to make an early decision based on realistic experiences. Teacher educators owe it to their proteges to see that they are not misdirected. Even though pre-teachers may "opt-out" of the teacher training programs, it is realistic to assume that this may not adversely affect the number of teachers entering the profession nor their longevity, if they do decide to enter.

The real effect would be in reducing the number of undergraduates enrolled in the curriculum. This might have dire effects upon programs that are evaluated by the number of students that they have enrolled. Recruitment campaigns have been initiated by many institutions to increase their enrollments. These are honest attempts by teacher educators to provide more teachers for a dynamic and growing field.

The ethical approach for the teacher educator is to assure that those who are enrolled in the undergraduate curriculum are provided with experiences that will allow them to make appropriate career decisions, before it is too late for them to change direction. ♦

# Using Horticulture as Therapy in Public Institutions



George Newell  
Graduate Student  
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George Newell

The use of various agricultural programs in public institutions and mental hospitals is not new. The prison farm, retirement home grounds or vegetable garden, or the well-cared for hospital grounds have been an earmark of institutions for generations. These agricultural projects were a part of the economic structure as well as a way to fill a need for work activities for patients. Economy and new programs have led to de-emphasis and elimination of many of these work programs. On the other hand, there has been the development of horticultural activities with an aim of helping to bring about desired changes in individual behaviors. Horticultural therapy programs with realistic goals are operating in psychiatric hospitals, rehabilitation centers, senior citizen homes, correctional institutions and centers for the mentally handicapped. Projects and techniques are varied, but the universal aim is to help people find a useful place in society.

## Therapeutic Affect

Germination of seeds, vegetative growth, flowering and maturing have close parallel to the basic concepts of human development. Common gardening tasks such as watering, fertilizing, and protecting plants from bad weather have human connotations. It has been observed that some regressed patients have been helped in regaining touch with reality by activities centered around the greenhouse. Success in growing plants can give hope that problems of a patient's life can be dealt with in treatment. The arrival of seed catalogs in the cold month of January creates visions of glorious gardens and spring warmth. A city boy

and

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in a rehabilitation center, who experiences the revelation that life can spring from a seemingly dead seed, could find from this experience the determination to alter his life style.

Many people in our institutions have acquired life patterns that demand immediate gratification. However, horticultural projects provide learning experiences requiring commitments, long range plans, and delayed gratifications. Even failures in growing plants can be new to a person who has a self-centered life.

Projects centered around growing plants give a range of tasks, interactions, and experiences. The diversity of plants that can be grown, the varied work skills needed, changes in weather and seasons, and the human dynamics of the group alter the activity daily. This diversification provides new experiences in living to those who have been deprived of human growth. The wide range of tasks can be suitable to varied levels of performance.

## Year-Around Continuity

Availability of a greenhouse gives year round continuity, but at the same time meaningful programs are possible without such facilities. The range of plants grown in the greenhouse can be endless. Sowing annual seeds and caring for them can be as therapeutic as orchids and conservatory plants. The amount of enthusiasm, training and skill as a therapist will determine success of a therapeutic activity. When the goal is education and training for employment, the focus will be on the commercial field. The likes and dislikes of the group will have bearing on the plants and associated activity. The therapist's horticultural background,

education, and his or her personal interest in plants will provide confidence and have bearing on the nature of the activity.

## Example Greenhouse Projects

The following are some projects that are greenhouse oriented:

1. Pot plants are common projects in most institutional greenhouses. The growing provides an excellent therapeutic activity and serves a useful purpose to add beauty to patients' rooms and staff offices.
2. Foliage plants lend themselves to low light areas and patients' rooms and staff offices. Seasonal flowering pot plants (poinsettias, chrysanthemums, or lilies) add a great deal to an often drab surrounding, and entail a great deal more planning. Forcing spring Dutch bulbs is especially rewarding to brighten up inside areas during the dull winter months.
3. Cut flowers grown for floral decorations furnish projects that can have a number of varied therapeutic values. The tasks centered around production and the use of the end products in artistic design give flexibility.
4. Propagation of nursery products have education and rehabilitation value and are important aspects of programs where the goal is to train people.
5. Production of bedding plants and planting outside is a traditional project of many horticultural therapy programs. The planning, sowing of seeds, potting of seedlings, spading, transplanting, and

(Concluded on next page)



(Newell—from previous page)

- watering all furnish projects to a group that has a range of function.
- Where a greenhouse is not available, there are projects which can have similar therapeutic effects. A higher degree of planning and some ingenuity is necessary to have a continuing activity. Woodlands, fields, and wasteland can provide material that needs only ingenuity, imagination and a willingness to try something new. Dried grasses, flowers, driftwood, natural fruits and nuts, and woodland material can be used effectively in artistic arrangements. All of these materials are generally free for the collecting and can be the backbone of projects if money is limited.
  - Summer flowers can be pressed in catalogs or dried in silica gel. This pressed material can be used in flower pictures, imbedded in resin or pieces of plywood, or used on stationery. Dried flowers can be imbedded in resin or made into arrangements in glass containers.
  - Terrariums are very popular and are possible on a limited budget. Discarded bottles can be filled with plants from the woods or materials can be purchased.
  - A wide range of plants can be grown under fluorescent lights in

- basements where there is no available light.
- Pine cones and plant materials can be collected and made into Christmas decorations. The collecting as well as the actual making of decorations can be very gratifying.
  - Perennial beds can be planned, laid out and maintained; Perennials do not provide the immediate gratification of annuals.
  - Avocado seeds, sweet potatoes, or foliage plants can be grown in water and although simple, can be meaningful.
  - Beautification of institutional grounds with purchased annual plants is gratifying, or even a small vegetable garden can be enlightening to patients who have no idea of the source of our common foods. These can be done with limited space and budget.
  - Files of projects connected with horticulture are important to periodically furnish a refreshing approach. Popular magazines, trade papers, and gardening books are all good source materials for new ideas.

#### Horticultural Therapy at Veterans Administration Hospital

A program of this type was initiated by Dr. Jarrold F. Merker, Chief of Psychology Service at the Lincoln Veterans Hospital with cooperative consultation from staff of the Horticulture

and Forestry departments of the University of Nebraska.

The basis for such a program lies in the fact that subjects of horticultural interest (a greenhouse mainly) are known to be or possess therapeutic qualities for those with troubled minds as well as "shuts-in" with crippling physical problems. Our program provided a diversionary activity for the patients as shown by our visitor counts and number of patient completed projects.

As a final "spin-off" benefit of the program, the students, through the operation of the University, are gaining valuable experience in working with plants, people and the greenhouse facilities being used.

#### SUMMARY

Dr. Jarrold Merker commented that the program "helps in developing new interest never conceived of before in some patients, creates a new time leisure interest in others, and for most is an immediate diversion for the moment, getting patients off the floor and out of the confinement and forgetting their problems for the time being. This type of a program changes their minds, gives more of a feeling of being refreshed, enabling patients to look at their problems in a new way. I've even had nurses comment that this patient or that patient rests better at night and has been eating better because of the patients new interest in the greenhouse. . . ."

# So That's What Teacher Educators Do!

Elmer L. Cooper\*  
Teacher Educator  
Virginia Polytechnic Institute  
and State University



E. L. Cooper

goal — that of becoming an agriculture teacher and an FFA advisor. To the college student, teacher education quite likely takes on a broader and more encompassing meaning. While the college student who graduated from a high school vocational agriculture program may continue to see teacher education as a direct route to a career goal, other college students may see alternative opportunities in the program. These include:

- preparation for the human relations side of many jobs in agriculture,
- provision for job security, since the demand for teachers in vocational agriculture has exceeded the supply for many years,
- provision of an occupational insurance package, since agricultural education graduates are equipped for a variety of jobs, and
- provision for entry into graduate school and careers beyond.

Teachers of agriculture in high schools have other expectations of teacher education personnel. They look to teacher educators for leadership and assistance in identifying or developing appropriate curriculum materials for secondary and continuing education programs. They see the teacher education department as their contact with the university campus and, as such,

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The concept of teacher education in agriculture has come to mean many things to various groups of people. To the high school student, teacher education may represent the route to a career look to the members of the staff to arrange for conferences, workshops, courses and other on-campus and off-campus services offered by the university. Teachers look to teacher educators for assistance in coordinating area and state-wide FFA activities that are held on the university campus. This typically entails making arrangements for meeting rooms, recreational opportunities, campus tours, food, and housing for the campus visitors. Hundreds of hours of the teacher educators' time may be involved in preparing for and conducting the many activities at a typical state FFA convention. While some teacher educators may regard this kind of service to be a little afield from their concept of the teacher educator's role, it is important for them to provide that vital link between the secondary schools and the university.

**Teacher education programs need vocational agriculture teachers to send capable students who are likely to succeed in college.**

The university is dependent upon the secondary school teacher to encourage students to attend the university; and, more specifically, teacher education programs need vocational agriculture teachers to send capable students who are likely to succeed in college. The future of the university lies primarily in the institution's ability to attract and graduate persons who will vouch for its effectiveness.

The teacher educator has another set of expectations with which to cope — that of the university's insistence upon research and publication. We would like to say the day has arrived when proficiency in teaching provides sufficient credentials for success on a university faculty, but this is not the

case in many universities. A task generally allied to research and publication is the writing of research proposals to generate funds for research activities. It may be argued that a balance between research, publication, and teaching contributes to both relevant teaching and practical research.

This brings us to the most important function in teacher education — that of educating present and prospective teachers. One of the greatest challenges to teacher educators is determining the best methods and content for the undergraduate program. Modern theories of education seem to require that instruction be student-centered and responsive to student interests and expressed needs. Therefore, it is unfortunate that prospective teachers have not generally been placed in the role of a teacher prior to planning their college program and entering college classes. In view of that lack of experience, the student must rely heavily on the teacher educator to recommend technical courses and to provide training in modern teaching methodology which will enable the beginning teacher to move into the classroom with a good measure of confidence and some real competence in teaching. Local school administrators look to teacher educators to prepare beginning teachers not only with skills commensurate with those of experienced teachers, but also with skills which utilize innovative methods of teaching and incorporate new theories of learning. Such expectations place a heavy burden on the teacher educator, since many of the real innovations in the teaching of high school students occur in the public schools and frequently in the absence of any formal research effort. Therefore, perhaps the greatest abundance of new ideas in teaching is to be found among the ranks of dedicated teachers in the field. And so, the teacher educator must keep his "ear to the ground" and maintain a constant vigil for new ideas that improve upon the traditional

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- nizations. We forfeit our inputs and involvement, and we expect designated leaders to make the "right" decisions and prescribe the "correct" policies to reach "their" goals. It follows then, we must cooperate as faithful servants in the conduct of prescribed programs.
- Cling to the "status quo" and insist that "our" teacher education programs *have been, are, and will be* the "best" programs that exist or can be designed for "our unique situation." If this is our position we must master the art of resisting change.
  - Realize we cannot be the "primary decision makers" in the roles we serve in agricultural education. If we accept this premise, we must have access to and influence upon the decision makers and policy makers. To have influence on policy makers we must keep them well-informed, sold on our programs, and committed to support these programs.

- Develop the art of being an effective change agent. We perfect our skills in being change agents within our own designated domain, but also, we develop the "finesse" to be professional change agents in aiding in effecting change with other appropriate agencies, institutions, and organizations.

In choosing alternatives suggested, or formulating other options, agricultural educators cannot escape the moral obligation and legal responsibility for improving vocational education in agriculture. The professional preparation of teachers is a most strategic and essential element in this process of improving education. Conformity is not necessarily analogous to improvement. We must insist that sincere challenges directed to proposed "changes . . . my way" should not be equated with resistance to change or an irrational defense of the "status quo." Improving teacher education is a goal worthy of our best combined efforts. There is no single beacon to light the way. ♦♦♦

# OPINIONS OF TEXAS VOCATIONAL DIRECTORS ON EMPLOYING WOMEN VO-AG TEACHERS

Herman D. Brown  
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H. D. Brown

These figures show that approximately 6,347,000 more women entered the labor market during the period from 1947 to 1970 than did men.

It is evident that the woman of today is becoming increasingly career oriented. It is also apparent that many women, in the process of career decision, have chosen some segment of the field of agriculture. In September of 1971, 65 women were enrolled in undergraduate programs in the College of Agriculture at Texas A&M University. By October of 1972, this enrollment had increased to 169 women, indicating substantial interest on the part of female students in professional training in the field of agriculture. Seven women are presently enrolled in a curriculum leading to a bachelor of science degree in agriculture education at Texas A&M University.

A study was made to determine if a need exists for female teachers of vocational agriculture. The study was also made to determine what type of vocational agriculture program could best utilize a female teacher, and to determine which subject matter areas a female teacher of vocational agriculture would be most effective in teaching. Questionnaires were mailed to 133 vocational directors in Texas and 104 responded.

The major findings of the study were as follows:

1. The vocational agriculture programs represented by the responding vocational directors were composed of a wide variety of curricula.
2. Significant enrollment of female students was noted in the programs represented in the study. A total of 771 female students were enrolled in the sampled programs representing 69 schools.
3. A majority of the vocational directors who responded indicated that they would consider hiring a female teacher of vocational agriculture; 64% indicated they would consider hiring a female, while 27% indicated some reservation. Nine percent gave no response or indicated that the hiring of personnel was not their responsibility.
4. The results of the survey indicated that the female

## A sample of vocational directors in Texas indicated that women vocational agriculture teachers would preferably be assigned to teaching horticulture or Cooperative Part-time Training.

vocational agriculture teacher would be assigned the responsibility of (a) Pre-employment Laboratory Training in Ornamental Horticulture (b) CVAE program in General Horticulture, or (c) Cooperative Part-Time Training.

5. Ornamental horticulture was indicated as the most important subject matter qualification for a female vocational agriculture teacher. However, other subject matter areas such as; leadership, plant science, soil science, and supervised experience programs and records, were determined to be significant.

In view of these findings, however, limitations of the study must be considered. First, the sample represents only vocational directors recognized by the Texas Education Agency and the school systems that they represent. These schools, which have vocational directors, tend to be the larger of the schools in the State. Secondly, the legal responsibilities pertaining to hiring practices dictate that employers must consider all applicants for employment on an equal basis. This fact probably had some influence on the heavy affirmative response in regards in consideration of a female applicant for a vocational agriculture teaching position. However, the study considered only the programs and subject matter areas that are now recognized by the Texas Education Agency in the field of vocational agriculture.

Based upon the findings of this study, the following conclusions were proposed:

1. There is a demand for female vocational agriculture teachers in the State of Texas, although it may be somewhat limited.
2. Schools indicating an interest in hiring a female teacher are combination multi-teacher units involving production agriculture and either Cooperative Part-Time Training, CVAE in General Horticulture or Pre-Employment Laboratory Training in Ornamental Horticulture.
3. Potential female vocational agriculture teachers should be experienced in ornamental horticulture and related fields such as soil science, and plant science. Leadership training is also of significant importance in the professional training of these females.

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(Winterbourne—from page 29)

Another finding of the study was that the teachers in the study were rated lowest by all four groups of raters on the criterion, *class preparation and use of the techniques*. Excessive teaching loads, responsibilities, and demands on a vocational agriculture teacher's time result in reduced teaching quality. A study recommendation is that, in addition to attempting to equate vocational agriculture teaching

loads to the loads experienced by teachers in other disciplines, greater emphasis in teacher training programs be placed on minimizing the lecture method of subject matter presentation and maximizing imaginative new approaches to the presentation of material.

I was very much impressed during my visits to the thirty-six high school agriculture departments by 1) the

openness and candor of the teachers in the study, 2) the friendly cooperation of vocational agriculture teachers and Bureau staff members despite their exceptionally busy schedules, 3) the willingness of the teachers to be evaluated by their students, and 4) the healthy optimism and soundness of the majority of the high school vocational agriculture students I encountered. It was a very refreshing experience. ◆◆◆

## Remember Your Student Teaching?

Larry Rost  
Graduate Student  
Purdue University



Larry Rost

Do the following quotes sound familiar? "Student teaching was a good experience." "My supervising teacher was tremendous." "I was treated like a co-teacher." "The program was mine while I was there." "All criticism was constructive." "I would like to be as successful as my supervising teacher."

We often tend to hear and remember these kind remarks. Does that mean remarks like the following never occur? "The experience was a waste of time." "My supervising teacher didn't ever turn me loose." "I had the opportunity to complete the distasteful job." "The entire experience was a farce." "I was used and abused." "I would recommend dropping the student teaching experience as a part of the teacher education program."

A challenge exists for agricultural teacher educators across the United States to provide a fun-filled and confidence-building student teaching experience program for pre-service teacher education.

An assumed fact is that the student teaching experience may well shape an individual's attitude toward teaching and his confidence as a teacher. A possible approach in selecting student teaching centers and placement of students within these centers can best be perceived if one remembers a concept taught by John Locke. The concept is one of a student's mind being like a blank tablet and the experiences received during student teaching makes inscriptions on the tablet. The experiences inscribed are the shaping factors of attitudes and outlook toward teaching.

A good question for each teacher education department to ask is, "On

tween those centers that are left. Is this the better method or is it used because it is the evolved method? By counseling with students and letting them make their own semi-final choice then we have a built-in self-protection; after all, it was the student's decision and he must live with it. The author is not really proposing an alternative, but just asking some searching questions about a time-honored, maybe antiquated system. Is a more logical approach available? A basic system should evaluate and match as nearly as possible the supervising teacher and the student teacher on factors such as personality, attitude, self-perception, familiar background, social background, and preconceived ideas about the agribusiness program. An improved system for placing student teachers in student teaching centers is needed. Can the placement for a very critical experience continue to be made using an arbitrary set of secondary factors as the criteria? Researchers may need to search systematically for inner characteristics of both the student teacher and the supervising teacher. The matching of student and supervising teacher could then be made on a more realistic and perhaps ultimately more humanistic level. We are dealing with the happiness of humans as we direct and guide experiences which they receive. There is a need for reduction of error to a zero level. A restructuring of ideas about student teaching experiences may help teacher education institutions to approach zero level of error. Memorandums will probably not filter down from the higher rungs of the hierarchical ladder. The complete operation must be a conscientious in-house effort by people concerned about student teachers having a fun-filled and confidence-building student teaching experience. ◆◆◆

what basis do we select student teaching centers?" A typical "good" center may be one in which the supervising teacher must:

- 1 hold a master's degree,
  - 2 be employed for the sixth year as a teacher,
  - 3 be on a 12 month contract,
  - 4 be active in local, state, and national agriculture teachers' organizations,
  - 5 have in operation an outstanding FFA program, and
  - 6 possess professional spirit.
- Then what criteria are used for the assignment of the student teachers to the student teaching center? Influencing the decisions might be:
- 1 the area of the state to which the students wants to go,
  - 2 location close to his hometown so he can live at home,
  - 3 in a center of the student's own choosing,
  - 4 a department that has a strong interest in a teaching area that is commensurate with the student's interests, and
  - 5 finally, the late counselee may have an option of choosing be-



# SUCCESSFUL FFA BANQUETS

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University of Wisconsin

and

John F. Thompson  
Teacher Education  
University of Wisconsin

The annual FFA banquet is one of the most prominent and most popular activities of FFA chapters. For many chapters, it is a high point of the year's program. When used properly, it will provide benefits that cannot be realized from any other activity. Appropriate use of banquets cannot be properly affected without knowledge about specific aspects of them. Extensive literature exists concerning specific dimensions of this subject but little attempt has been made to integrate such material to reveal the contribution that each makes to successful banquets.

In 1972-1973, 125 out of approximately 270 Wisconsin high school FFA chapters qualified for the Superior Chapter Rating under the National Chapter Awards program. Presumably, these chapters should be "superior" in their use of FFA banquets as well as other respects. This study sought to analyze the vocational agriculture departments with and without Superior Chapter Ratings in terms of the vocational agriculture teacher perception of what role banquets and other social functions play in their programs as well as in terms of actual practices of teachers in regard to these social functions.

## METHODOLOGY

A review of existing literature established agreement on the desirability of incorporating certain practices into conducting a banquet. A questionnaire was sent to a random sample of 90 Wisconsin high school vocational agriculture departments stratified according to the percentage of chapters with and without Superior Chapter ratings. Ninety percent of the sample responded.

Each separate practice included in the questionnaire which related to a particular area was assumed to be of equal value.

One-way analysis of variance was used to compare the two groups in their use of desirable banquet practices of the areas of public relations, developing student abilities, enlightening and informing the community, recognizing achievement, planning and preparation, evaluation, attendance, and scheduling of social activities in general.

In all cases the .05 level of significance was chosen for statistically testing hypotheses.

## FINDINGS

In the sample drawn, approximately 84 percent of the students in vocational agriculture classes were FFA members in schools with superior ratings while schools without such ratings indicated 79 percent of their vocational agriculture students were in the FFA. A majority of both groups indicated most of their students came from a rural background. About one-half of each group had programs devoted almost entirely to production agriculture. The remainder of the schools indicated an equal orientation to production agriculture and agribusiness with a small minority having strictly agribusiness programs. Thus, there was little difference in the background characteristics of the two groups of vocational agriculture departments.

Teachers from all chapters with superior ratings and teachers from all but one chapter without such ratings indicated that in their personal estimation, the benefits gained from having a banquet were worth the time, effort, and money spent on conducting one. When asked if they perceived the banquet to be a valuable asset to their public relations program, all teachers from chapters with superior ratings and all but one teacher from chapters without superior ratings gave an affirmative answer.

Teachers from both groups indicated their main reasons (in decreasing order

of importance) for continuing banquets were:

1. A banquet gives the community a better understanding of the program.
  2. A banquet provides a place for students to receive recognition and encouragement (including poor students who often fail and seldom get recognition for anything).
  3. A banquet can be used as an instructional technique for teaching such things as leadership and human relations skills.
  4. A banquet is excellent for increasing student motivation which can then be channeled into more worthwhile activities.
  5. A banquet fosters cooperation with and support for other FFA activities.
- Of the schools with superior chapter ratings, 95 percent had FFA banquets during the 1972-1973 school year and 83 percent of the chapters without such ratings had the activity. This difference was found to be significant.

Banquet practices used significantly more often by schools rating "superior" included inviting one of the State FFA Officers, publicizing the banquet, awarding an Honorary Chapter Farmer Degree at the event, mentioning the accomplishments of all vocational agriculture students, using committees of FFA members to plan and prepare for the banquet, and starting to plan at least three months before the banquet date.

Respondents with superior chapter ratings did employ a greater number of the suggested practices associated with the use of FFA banquets in the areas of public relations, developing student abilities, enlightening and informing the community about concerns, and recognizing achievements of persons connected with FFA. Superior rating schools that had banquets also used a greater number of the suggested

(Concluded on page 46)

# PLANNING AND ALUMNI SUPPORT CONTRIBUTE TO FFA CHAPTER SUCCESS

Sam M. Taylor  
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In the Mansfield Agricultural Education Department, we plan our program while looking to the future for some definite visible results. We have learned that good planning is a necessity if good results are to be expected.

We work with the school administrator and advisory council in setting up the instructional program, which relates to the in-school youth as well as the community adult program. The high school agricultural course content is composed of semester courses in such areas as: soil science, plant science, animal science, agricultural economics, and agricultural mechanics. These courses are approved by the State Department of Agricultural Education. The adult courses are based on local needs in the community.

FFA monthly meetings are planned one year in advance so as to secure speakers and movies which fit into the planned FFA program of work. FFA banquet speakers are contacted six or eight months in advance in order to secure outstanding speakers. Community action groups such as the local FFA alumni association, civic groups, and other service clubs meet with FFA officers to assist in planning an FFA activity program during the year.

The FFA program of work is made out early in the year and posted in the classroom. Each student is assigned a definite area of responsibility. At periodic intervals during the year, FFA committee chairman make progress reports on the accomplishments in their committee area.

All activity dates involving the FFA are posted early in the year so as to keep all plans moving forward at the right time.

The total agricultural education program can really be evaluated in terms of its acceptance by the com-



The author, Sam M. Taylor on the left, and Charles Looper exhibiting the Arkansas FFA Alumni Charter that was presented in Kansas City to Looper, the first local alumni chapter president in Arkansas.

munity and by accomplishments of FFA members. In our high school, we have an enrollment of 102 students in Agricultural Education where the total high school enrollment is 255 students. In the past school year, 90 adults were reached in the adult program.

The local FFA Parent-Son Banquet is really the show case for the entire FFA Program. We evaluate our FFA Parent-Member Banquet by good attendance from FFA members, parents, alumni members, and support from the business community.

Recently we organized an FFA alumni association consisting of 38 members, and an alumni council consisting of 5 members. The alumni council also serves as an advisory council for the Agricultural Education Program. Our FFA alumni have been instrumental in organizing a State FFA

Alumni Association and this year, we held our first FFA alumni banquet.

We have been able to secure the support of the business people of our area in the matter of contributions to the State FFA. For three successive years, our school has led the State in the collection of money for the State FFA Foundation. We feel that this financial support is indicative of the image of our program in the community.

In 1973 our chapter won first place in all three of the chapter contests, namely the BOAC Contest, the Chapter Contest, and the Chapter Safety Contest. We were given a Gold Emblem rating at the National FFA Convention in all three of these contests.

In order to have a successful chapter in these contests, it was necessary to have community support. ◆◆◆



# HORTICULTURAL MECHANICS COMPETENCIES

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and

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University of Illinois

Finding available employees who have received adequate education and training is a key problem in any business. Vocational programs that prepare workers only for the production phase of agriculture are inadequate in terms of the variety of occupations available to students and workers. No longer will a general shop course in agricultural mechanics meet the needs of the students, both boys and girls, now enrolled in vocational agriculture. The question of which knowledges and skills in agricultural mechanics to teach for ornamental horticulture occupations and at what level of education this training should be taught formed the basis and the purpose for this research study. There were 15 agricultural mechanics knowledges and skills common to four horticultural occupation areas.

## Objectives

The objectives of this study were: 1) to determine what agricultural mechanics knowledges and skills are needed for entry-level employment in nursery management, greenhouse management, turf management, and landscape management occupational areas; 2) to determine what agricultural mechanics knowledges and skills are common to the four occupational areas — nursery management, greenhouse management, turf management, and landscape management; and 3) to determine the appropriate grade level at which the agricultural mechanics knowledges and skills needed for entry-level employment should be taught.

## Procedures

The procedures for conducting the study consisted of developing a survey instrument, selecting two groups of respondents, and collecting and analyzing the data. The two groups of respondents were secondary school teachers of ornamental horticulture occupations and managers of ornamental horticulture businesses.

The survey questionnaire identified knowledges and skills in the areas of hand tools, metal work, electricity, power and machinery, soil and water management, and buildings and structures. Each survey item was rated as to its need by entry-level employees in four different horticultural occupations — nursery, greenhouse, turf, and landscape management.

The rating scale used in the survey questionnaire had four positions permitting flexibility of choice but requiring a definite response. Respondents were asked to rate each of the 85 statements using the following scale values and definitions:

- (4) **ESSENTIAL** — a rating of "essential" indicates that an entry-level employee *must* possess the knowledge or skill
- (3) **HIGHLY DESIRABLE** — a rating of "highly desirable" indicates that an entry-level employee *should* possess the knowledge or skill
- (2) **DESIRABLE** — a rating of "desirable" indicates that for entry-level employment it would be *nice to possess* the knowledge or skill
- (1) **NOT NEEDED** — a rating of "not needed" indicates that for entry-level employment the knowledge or skill is *not necessary*.

To determine the appropriate educational level for teaching the different agricultural mechanics knowledges and skills, a mean score was computed. The knowledges and skills were then ranked by the horticultural teachers to establish a grade level — exploration, grades 7-8; orientation, grades 9-10; preparation, grades 11-12; and technical, grades 13-14.

## Findings

Findings are divided into three parts: (1) those agricultural mechanics knowledges and skills rated "essential" for entry-level employment with mean scores ranging from 3.01-4.00, (2) those agricultural mechanics knowledges and skills common to all four occupational areas at the 3.01-4.00 level, and (3) the recommended level for teaching the different agricultural mechanics knowledges and skills.

**Knowledges and Skills in Nursery Management.** There were 17 agricultural mechanics knowledges and skills rated essential for entry-level employment in nursery management. The essential knowledges and skills are found mainly in the areas of hand tools and power and machinery.

**Knowledges and Skills in Greenhouse Management.** There were 13 agricultural mechanics knowledges and skills rated essential for entry-level employment in greenhouse management and they are found mainly in the area of electricity.

**Knowledges and Skills in Turf Management.** There were 18 agricultural mechanics knowledges and skills rated essential for entry-level employment in turf management and they were found mainly in the area of power and machinery.

**Knowledges and Skills in Landscape Management.** There were 20 agricultural mechanics knowledges and skills rated essential for entry-level employment in landscape management. The essential knowledges and skills are found mainly in the area of power and machinery.

(Concluded on next page)

Shipley—*from previous page*)

**Knowledges and Skills Common to Four Occupational Areas**  
There were 15 agricultural mechanics knowledges and skills common to four occupational areas. The list follows.

- Understanding of hand tools — identification, use and care
- Understanding of safety practices when using hand tools
- Understanding of sprayer operation (adjustment, speed of travel, techniques)
- Understanding of power and machinery safety practices
- Understanding of use and care of tillage and seedbed refining equipment (harrows, shredders, pulverizers, plow and disk)
- Understanding of use and care of fertilizer applicators (spreaders, fertilizer drill)
- Understanding of use and care of planting and seeding equipment (row planters, broadcaster, drills)
- Understanding of use and care of weed, insect and disease control equipment (cultivators, tillers, hoes, sprayers, dusters)
- Understanding of use and care of cutting and digging equipment (mowers, sod cutter, chain saws, ball and burlap machine)
- Ability to perform maintenance on an engine (lubricate, change oil, clean filter)
- Ability to operate and maintain weed, insect, and disease control equipment (cultivators, sprayers, dusters)
- Ability to operate and maintain cutting and digging equipment (mower, sod cutter, chain saw, ball and burlap machine)
- Ability to operate and maintain fertilizer applicators (spreaders, drill)
- Ability to operate and maintain tillage equipment (plow, disk, harrow)
- Understanding of soil and water management equipment safety

## Conclusions

The following conclusions were drawn based upon the findings of the study:

1. There was no significant difference between the responses of horticultural instructors and horticultural business managers.
2. Of the 85 agricultural mechanics knowledges and skills, all items were rated as needed for entry-level employment in horticultural occupations except (Item 58) "understanding of operation and use of land survey information," (Item 59) "understanding of contour maps," and (Item 61) "understanding of drainage systems."
3. Of the 85 agricultural mechanics knowledges and skills, 15 were rated "essential" and common to four

Cooper—*from page 35*)

methods of teaching and program management.

An excellent forum for sharing innovations and exchanging ideas is found in graduate level courses provided by teacher educators. The teacher brings to graduate classes his prob-

lems and successes which are, in turn, shared with other teachers and the teacher educator. Frequently, one man's success story is the solution to another man's problem. The teacher educator learns from the practitioners. At the same time, he contributes knowledge gained from his own research and

occupational areas. The knowledges and skills were in the areas of hand tools, power and machinery, and soil and water management.

4. Of the 85 agricultural mechanics knowledges and skills, 38 were rated "highly desirable" and were common to four occupational areas. The knowledges and skills were in the areas of hand tools, metal work, power and machinery, soil and water management, and buildings and structures.
5. Recommended grade levels for teaching agricultural mechanics knowledges and skills in hand tools were grades 7-12; metal work, grades 9-12; electricity, grades 9-12; power and machinery, grades 9-14; soil and water management, grades 9-14; buildings and structures, grades 9-14.
6. There were significant differences observed between the agricultural mechanics knowledges and skills needed for entry-level employment in nursery management compared with greenhouse management, turf management compared with landscape management, and nursery management compared with turf management.

## Recommendations

The following recommendations are made based on the findings of the study and observations made during the investigation:

1. In schools providing ornamental horticultural courses, it is important that the identified essential agricultural mechanics knowledges and skills be taught as part of the curriculum.
2. In schools providing agricultural occupations instruction, a core curriculum involving agricultural mechanics should be provided to meet the needs of each agricultural occupational area as well as provide course material needed for other nonagricultural occupations. Horticulture, as an agricultural occupational area, will benefit from a core curriculum by eliminating most duplication of course content.
3. In order to provide valid information for technical assistance in horticultural program planning and evaluation, a citizens' advisory council representative of the horticultural service areas, associated services, and related industry should be organized and used.
4. Certain aspects of agricultural mechanics, as they relate to horticulture, should be taught as career and exploratory information in elementary and junior high schools. Horticulture is an excellent vehicle for motivating student interest in a wide range of school subjects.
5. Greater articulation between educational agencies is required to maximize learning and prevent duplication of effort. Articulation further promotes continuity from one level of learning to another and provides a base for successful career planning. ♦♦

ideas learned from contacts with students in other classes, readings in the field, and conferences with leaders in other states. Therefore, the teacher educator may be characterized as a facilitator of learning in graduate courses.

(Concluded on next page)



(Petrick—from page 42)

practices in planning and preparing for the banquet.

There was little difference between the practices concerning guest lists of the two groups and in their use of practices which encouraged attendance. Approximately 70 percent of both groups did schedule time to evaluate their banquet after it was held.

Banquet practices included in the study which were used by at least 75 percent of the chapters surveyed included holding the banquet at school, inviting both parents, publicizing the banquet, mentioning the accomplishments of students and presenting awards earned throughout the year to them, awarding an Honorary Chapter Farmer Degree, conducting the banquet as a formal FFA meeting and having the chapter president as master of ceremonies, using an outside speaker, having FFA members separate into committees to prepare for the banquet, and holding the banquet in the later part of the school year.

FFA's with superior ratings did In some states, teacher educators de-

(Cooper—from page 45)

vote a considerable amount of time to working with the state supervisory staff in agricultural education. If the staffs of teacher educators and agricultural education supervisors are really "pulling together," there will likely be several joint staff meetings per year. In addition, a teacher educator will be attending meetings of the state Young Farmers Executive Committee, area meetings of agriculture teachers, and other similar activities requiring cooperative effort.

In summary, teacher educators must perform many vital functions. Foremost is the provision of an adequate supply of well-trained teachers which requires in-service as well as pre-service education. Inherent to the provision of effective training programs is the need to keep abreast of new developments in the field, which requires participation in multi-state activities, as well as research in education. Further, it is important to provide services to agriculture teachers and high school students in various university sponsored activities. In so doing, the teacher educator, in cooperation with the state supervisory staff, becomes the catalyst which causes a lot of good things to happen.

schedule a greater number and variety of social-recreational activities other than banquets. Basketball was the social activity engaged in most often followed by taking tours and participation in parades.

### DISCUSSION

Vocational agriculture teachers from both groups tended to continue having FFA banquets for the same reasons but "superior" rated schools made better use of the potential banquets offered in a number of areas. Although both groups had the same goals in mind, teachers from "superior" chapters were apparently more skillful in reaching their goals. Whether teachers from schools not rating superior have assumed they are making optimal use of banquets, have simply taken a complacent attitude toward them or are not familiar with proper use of them is hard to guess.

Schools with Superior Chapter Ratings in at least the area of social-recreational activities had a more well-rounded program. They were probably better meeting the social needs of their students since they were more active in

and sponsored a greater variety of activities.

They also tended to start planning earlier for their banquet, more often using student committees to do the work and, in general, using a greater number of desirable practices in planning for the event. This seems to indicate greater concern for assuring the banquet's success by beginning early, using all available help and including a greater number of the practices vocational agriculture literature associates with a successful banquet.

Since chapters rating "superior" publicized the banquet more often, it seems reasonable to assume they also publicized other events more extensively. This brings up the possibility that part of the reason they were judged more successful may have been because they were more active in advertising that they had a good program.

A general observation of the findings of this study leads the authors to conclude that there is a need for improvement in the use made of FFA banquets by all schools but especially by that group of schools without Superior Ratings.

## BOOK REVIEWS

**AGRICULTURAL GEOGRAPHY**, by John R. Tarrant. Great Britain, Halsted Press and New York: John Wiley & Sons, Inc., 1974, 279 pp., \$12.95.

The author has divided this book into eight chapters bearing the following titles: Introduction, Agricultural Location Theory, Agricultural Data Sources, Regionalization and Classification, Problems and Alternatives, Regionalism, Explanation and Interrelationships in Agricultural Geography, Agricultural Marketing, and Competition for Agricultural Land.

From the beginning chapter, the author makes it clear that this will not be a descriptive account of the major agricultural systems of the world; nor will it be a detailed analysis of one country's agriculture. It is, in fact, a very scientific and technical approach to agricultural geography. The author discusses in detail the value of models in the study of agriculture and explains new methods of analyzing agricultural systems.

Although most of the material in this book is highly technical in nature, the author has included a generous number of formulas, charts, graphs and examples which help the reader understand the concepts being discussed.

This book has a truly international flavor, in that the author draws on his knowledge of the agriculture of more than a dozen countries in the process of illustrating the various theories he examines.

An important segment of this text deals with marketing. Special emphasis is placed on the role of governments in stabilizing the production, distribution and marketing of agricultural products.

Finally, the author examines the problem of the loss of farmland to urban uses. The reader will quickly realize that "urban sprawl" is a world wide problem and is not peculiar to the United States.

The author, Dr. John Tarrant, is a lecturer in Environmental Science at the University of East Anglia. He has also served as guest lecturer in Geography at the University of Canterbury, Christchurch, New Zealand.

This book would be most useful to graduate students in agricultural economics, international agriculture and geography. Community college instructors and university professors should find this text to be a valuable addition to their reference library.

Richard Rogers, Specialist  
Cooperative Vocational Education in Agriculture  
Dept. of Applied Behavioral Sciences  
University of California-Davis

**MAIZE ROUGH DWARF A PLANT-HOPPER VIRUS DISEASE AFFECTING MAIZE, RICE, SMALL GRAIN AND GRASSES**, by Isaac Harpaz. Jerusalem, Israel: Israel University Press. Available in the United States from Halstad Press Division, John Wiley and Sons, New York, 1972, 268 pp., price \$24.00.

When American hybrid seed corn was

introduced into Italy and Israel in the 1940's and 1950's, a dwarfing virus attacked them causing losses of up to 70% of the corn plants. Because of the implications of an introduction into the United States, the United States Department of Agriculture Research Service made a grant to Isaac Harpaz, Professor of Entomology, Hebrew University of Jerusalem, to study the disease. This book was written by the scientist to report his, and other selected research on the virus. The book is divided into 14 chapters, titled:

1. Introduction
2. Symptomatology and Host Range
3. Mechanical, Graft, Dodder, and Seed Transmission
4. Insect Transmission
5. Virus — Vector Relationships
6. Trans-Ovum Transmission and Harmful Effects of the Virus on the Vector
7. Virus — Host Plant Interrelationships
8. Purification, Serology and Physical Properties of the Virus
9. Electron Microscopy of the Virus
10. Relationship between MRDV and Other Maize Viruses, or Maize Diseases and Disorders with Virus-like Symptoms
11. Relationship between MRDV and Other Plant Viruses Transmitted by Delphacoid Planthoppers
12. Morphology and Biology of Vector Species
13. Epiphytology of the Disease
14. Control of the Disease

The book is a suitable reference for advanced students of corn production or students of plant pathology. It probably would not be suited for high school classes at this time and would be classed as a teacher reference.

William H. Hamilton  
Purdue University

**RED ROCK COUNTRY**, by Donald L. Baars. Garden City, New York: Doubleday/Natural History Press, 1972, 264 pp., \$9.95.

Red Rock Country is a detailed account of the red rock country of the Colorado Plateau, located at the convergence of the states of Colorado, Utah, Arizona, and New Mexico. It thoroughly examines the natural and geological history of the Grand Canyon and surrounding area. It is divided into three parts: The Early History, Post-Paleozoic Landscapes, and Enter Man in which the author reviews the geological history of the region from the earliest times to the present.

The author, as the publisher describes, is an experienced guide. He has studied the region for twenty years, first as a geologist for industry, later through research projects as a professor of geology. In the summer, he serves as a part-time "river rat," guiding raft trips on the Colorado River and its tributaries.

The reviewer would suggest that students in high school or a junior college that have accrued an interest in geology would find it to be enlightening reading. Instructors in more general geological courses at the senior college level might consider it as a supplemental reference. Geologists, and like enthusiasts, would probably find the book interesting and beneficial. The reviewer would not recommend it as a necessary book for shelving in the Vocational Agriculture Department.

Larry E. Miller  
Virginia Polytechnic Institute & State University

**APPROVED PRACTICES IN PASTURE MANAGEMENT**, by Malcolm H. McVickar. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1974, 3rd Edition, 393 pages, \$6.25.

**APPROVED PRACTICES IN PASTURE MANAGEMENT** consists of 25 different chapters concerning pastures along with an appendix which contains two tables; one for forage, seed, and plant characteristics, the other for estimating grain, hay and silage production, and also a glossary.

Six chapters are devoted to pastures suited to each type of animal such as poultry, sheep, swine, etc. The other chapters are concerned with such things as the nutritional value, economics, and importance of different grasses and legumes, increasing production through better soil and fertilizer programs, and control of natural enemies (insects, diseases, and weeds).

Dr. Malcolm H. McVickar has been in the field of Agronomy for many years, starting at the Virginia Agricultural Experiment Station and going on to the National Plant Food Institute in Washington, D.C. Presently, Dr. McVickar is the head of an agronomy research staff for the Ortho Division of Chevron Chemical. Along with this text, he is also the author of **USING COMMERCIAL FERTILIZERS**.

The text is easy to read and understand for a beginning student in forages. This is a good reference or textbook which could be used either on the high school or two-year level.

Paul R. Aldrich, Voc. Ag. Inst.  
Dover High School  
Dover, New Hampshire

**WILDLIFE ECOLOGY: AN ANALYTICAL APPROACH**, by Aaron N. Moen. San Francisco, California: W. H. Freeman and Company, 1973, 458 pp., \$17.50.

Professor Moen has developed a system of analysis using mathematical models. As his research continues, his modules have grown in size and include a greater number of factors. Dr. Moen has taken the many factors and forces which act together in wildlife ecology and written about them in a clear, straight-forward manner. This is particularly admirable when the dynamic and complex nature of the subject is considered.

This book presents nearly every conceivable topic relating to wildlife ecology. Besides showing the interrelationships of the many factors discussed, the book ends with a section which explains social, economic, and political considerations as well as a summary of the biological considerations.

While many of the findings reported are from research with white-tailed deer, the concepts are generally applicable to other organisms.

Professor Aaron N. Moen is an Associate Professor of Wildlife Ecology in the Department of Natural Resources of New York State College of Agriculture and Life Sciences at Cornell University. His background experiences including work on his Ph.D. dissertation eminently qualify him to author a book on wildlife ecology.

The book would make an excellent college text. It is interesting and clear enough to be used by advanced scientifically oriented high school students. It would be a good reference for vocational agriculture teachers who are teaching about wildlife.

Rodney W. Tulloch  
University of Kentucky

## From the Book Review Editor's Desk . . .

### BOOKS TO BE REVIEWED

**AGRICULTURAL GENETICS: SELECTED TOPICS**

Edited by Rom Moav  
Halsted Press, A Division of John Wiley & Sons, Inc. (1974)

**ECONOMICS OF AMERICAN AGRICULTURE**

By Walter Wilcox, Willard Cochrane, and Robert Herdt  
Prentice-Hall, Inc. (1974)

**INSECTS IN RELATION TO PLANT DISEASE**

By Walter Carter  
John Wiley & Sons, Inc. (1973)

**PRINCIPLES OF DAIRY SCIENCE**

By G. H. Schmidt and L. D. Van Vleck  
W. H. Freeman and Company (1974)

**INDIVIDUALIZED INSTRUCTIONAL SYSTEMS FOR VOCATIONAL AND TECHNICAL EDUCATION: A SERIES OF INSTRUCTIONAL MODULES and A COLLECTION OF READINGS**

By Nevin R. Frantz, Jr.  
Vocational Instructional Systems (1974)

**ANATOMY AND PHYSIOLOGY OF FARM ANIMALS**, 2nd ed.

By R. D. Frandson  
Lea & Febiger (1974)

**APPROVED PRACTICES IN RAISING AND HANDLING HORSES**

By Donald Ulmer and Elwood Juergenson  
The Interstate Printers & Publishers, Inc. (1974)

**LAW FOR THE VETERINARIAN AND LIVESTOCK OWNER**

By H. W. Hannah and Donald F. Storm  
The Interstate Printers & Publishers, Inc. (1974)

**PLANT SCIENCE: AN INTRODUCTION TO WORLD CROPS**

By Janick, Schery, Woods and Ruttan  
W. H. Freeman and Company (1974)

If you feel qualified to review one of these books and desire to do so, write the Book Review Editor and he will send the book for review. Once reviewed, the book becomes the property of the reviewer.—James P. Key, Book Review Editor, Agricultural Education Department, Oklahoma State University, Stillwater, Oklahoma 74074





**WE CAN'T DO IT ALONE.** Vo-Ag teachers need people like Charles Bourg (center) from U.S. Steel and A. J. Adolphi (right) from Ciba-Geigy Corp. Their contribution to Vocational Education in Agriculture has been recognized by NVATA Honorary Membership. Shown making the presentation is past NVATA President Francis Murphy. (Photo from NVATA)

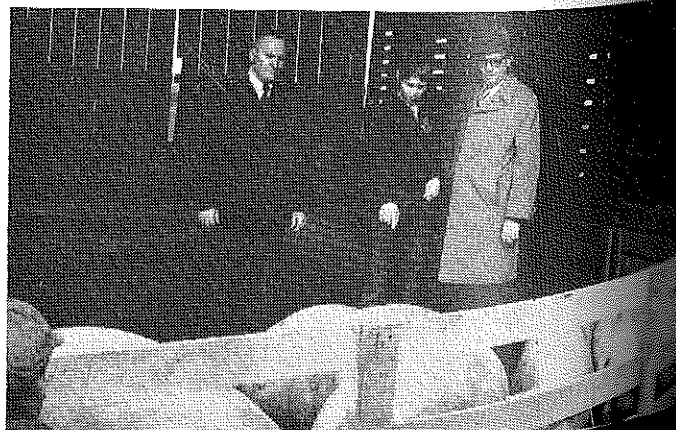
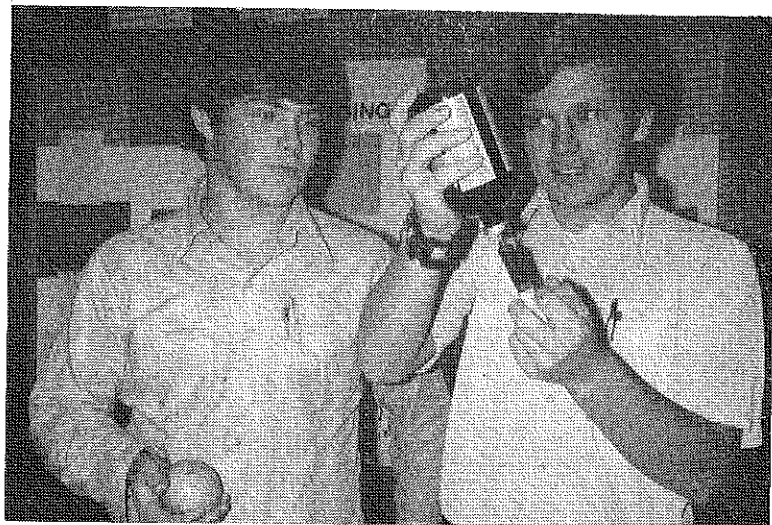


**SOME OF THE REWARDS.** The NVATA Teacher Recognition Award is presented by the Pfizer Agricultural Division to the vocational agriculture teacher who was the advisor to the national winner of the FFA Agricultural Proficiency Award in livestock, dairy, and poultry production. Pictured are: (left to right) Joseph A. Baltes, Southeastern Regional Manager, Pfizer, Inc., Doraville, Georgia; John P. Adams, Middlebury, Vermont; Ed Strong, Idaho state president accepting for Clarence Beckman, Emmett, Idaho; and C. M. Butler, Sylvania, Alabama. (photo from NVATA)



**WE NEED ADVICE.** Programs of Agricultural Education require good advice by supervisory, teacher education and administrative personnel. The above photograph shows joint planning underway in Virginia. Seated are Dr. M. A. Fields, Head, Ag. Ed., Virginia State College; Mr. Julian M. Campbell, State Supervisor; Dr. Karl T. Hereford, Dean, College of Education, Virginia Polytechnic Institute and State University; and Dr. Overton R. Johnson, Associate Dean, College of Agriculture, VPI & SU. Standing are Dr. James Clouse, Program Leader in Ag. Ed., VPI & SU; and Dr. Dewey Adams, Director, Division of Vocational and Technical Education, VPI & SU. (photo by Jasper S. Lee)

**STUDENTS NEED PRACTICE.** Geddes, South Dakota Vo-Ag students, Ron Larson and Bob Bouza practice loading a syringe and injecting an orange. This is part of a Disease Prevention unit in Animal Science. Practical, hands-on experience is essential in a Vocational Agricultural Program. Thus space and equipment to provide this experience are also essential. (photo by Gail J. Sperlich, Geddes Vo-Ag Instructor)

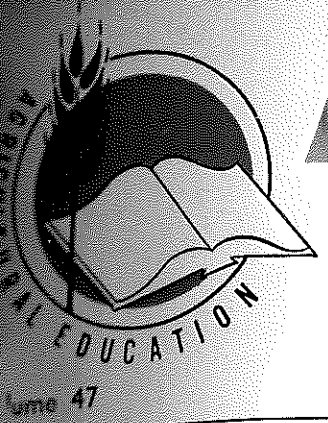


## Stories in Pictures

by Richard Douglass

### Developing The Agricultural Competence In Our Own Community

**WE NEED COMMUNITY SUPPORT.** The Olney, Illinois Kiwanis Club purchased three hogs from Olney FFA member, Bill Burgener, for use at their Annual Pancake and Sausage Day. It was all a part of the Kiwanis Club's efforts to call attention to the FFA during National FFA Week. FFA Week placemats were used for the event at which two FFA members spoke to the club on their activities. Left to right are Max Pantle, Finance Chairman; Bill Burgener, and E. L. Bosomworth, Kiwanis President. Both Kiwanians pictured are former FFA members, as are a good percentage of the Olney Kiwanis Club. (photo from E. L. Bosomworth)



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Theme—SCHOOL ORGANIZATION  
AND ARTICULATION

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