

Mr. Palmer Eidet, President of the South Dakota Vocational Agriculture Teachers' Association, shows off the "chain saw" which was presented to him as a memento of his year of leadership in the Association. The chain saw is a product of the instructor at Chamberlain, S.D., Mr. Leonard DeBoer. This may be an ideal Christmas gift for your neighboring Ag teacher. He can cut the lumber he left too long in his "Board Stretcher".

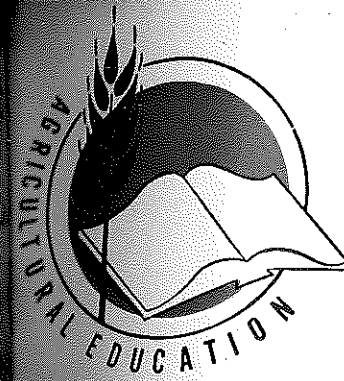


A Vocational Agriculture student puts finishing touches on one of the many wreaths produced by the Housatonic Valley Chapter Future Farmers of America. The objective of the project is to familiarize the students with the mechanics of marketing and salesmanship and also introduce them into the area of assembly-line production. All students participate in some phase of wreath making and are responsible for taking and filling wreath and tree orders and making sales at the Christmas Tree Stand. (Photo supplied by Robert E. Gambino, Vo-Ag Instructor, Fall Village, Connecticut)

Volume 45

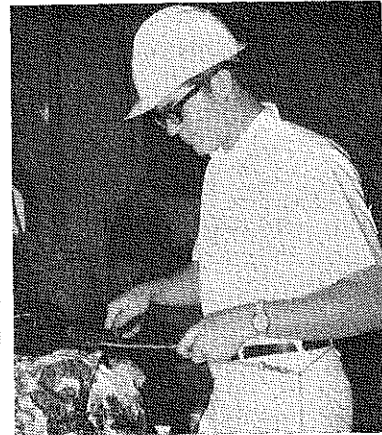
January, 1973

Number 7



Agricultural Education

Teaching Occupational "Awareness"



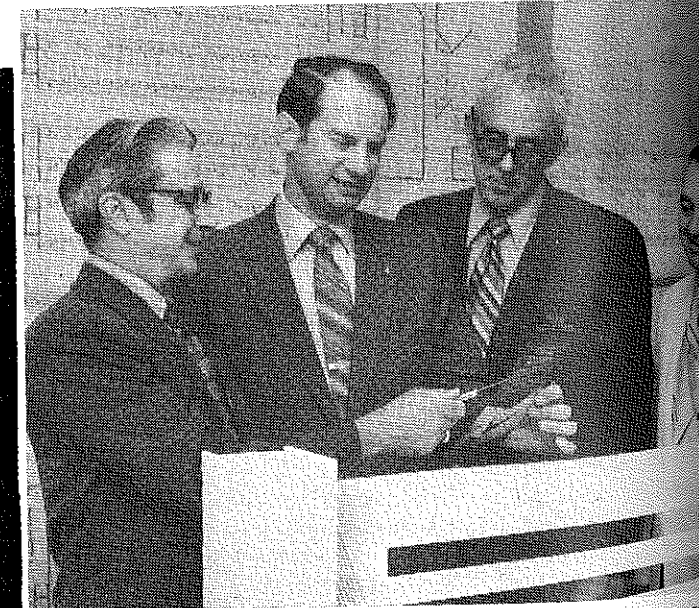
Students in the Colby, Kansas Community College receive extensive training in meat inspection procedures for compliance with both State and Federal regulations. Further information on this and other programs at CCC will be found in the article by Sam Stenzel and Roger Lukens on page 127, this issue. (Photo supplied by Sam Stenzel)

Stories in Pictures

by Richard Douglass



Palmer Eidet, (left), President of the South Dakota Vocational Agriculture Teachers Association presents an achievement award to Mr. W. R. Bryant, retiring teacher of Vocational Agriculture. Mr. Bryant taught Vocational Agriculture in South Dakota for 39 years, 36½ of which were in the Canton, South Dakota School System. This is one of numerous recognitions which were extended to Mr. Bryant in recognition of his years of service to Vocational Agriculture. Presentation was made during the State Vocational Education Conference on August 17, 1972 at Mitchell, South Dakota. (Photo supplied by E. W. Gustafson, State Supervisor, Agricultural Education)



Agricultural Education will be housed in the \$3.1 million Classroom-Office Building under construction at the University of Minnesota's St. Paul Campus. Examining plans for the five-story structure are, from left, R. Paul Marvin, Head of the University's Department of Agricultural Education; State Rep. Wendell Erickson, Hills; Paul Day, State Supervisor of Agricultural Education for the Minnesota Department of Education, and Marlyn Wacholz, Past President, Minnesota Vocational Agriculture Instructors' Association. The building also will house the departments of agricultural and applied economics, rural sociology and applied statistics. It is scheduled to be ready for use in the fall of 1972. (Photo supplied by Paul M. Day)



Theme - CAREER EDUCATION:
ELEMENTARY PROGRAMS



The
**Agricultural
Education**
Magazine

Vol. 45 January, 1973 No. 7

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This publication is the monthly professional journal of agricultural education. The journal is published by THE AGRICULTURAL EDUCATION MAGAZINE, INC., and is printed at the Lawhead Press, Inc., 900 East State Street, Athens, Ohio 45701.

SUBSCRIPTION PRICE: \$3 per year. Foreign subscriptions \$4. Student subscriptions in groups (one address), \$1 for October-May. Single copies and back issues 50 cents. In submitting subscriptions, designate **new** or **renewal** and address including ZIP code. Send all subscriptions and requests for back issues to Harlan E. Ridenour, Business Manager, AGRICULTURAL EDUCATION MAGAZINE, Box 3843, Columbus, Ohio 43214.

Second-class postage paid at Athens, Ohio.

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

COVER PHOTO

A REAL CHICKEN FROM AN EGG—Felix Welch, center, of the Alabama Department of Agriculture and Industries, explains "poultry propagation" to McAdory, Alabama, elementary students Rhonda Moore, Vinson Ryals, and Anthony Price. Don Bristow, left, McAdory Agribusiness Education Teacher, set up the learning situation to expand the production agriculture concepts of these students living in the city. (Photo supplied by Cecil Gant, Public Information Specialist, FFA and Agribusiness Education, Auburn University).



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THE AGRICULTURAL EDUCATION MAGAZINE

Editorials

ARE YOU "ALERT" TO CAREER EDUCATION

From Your Editor . . .



Roy D. Dillon

As we begin a new year and a new series of "Themes" for our national journal, the editors are hopeful that the approaches taken in preparing each issue will "alert" the agricultural educator.

The first step in understanding a new concept, such as career education, is to find out what it is. The November, 1972, issue was designed to introduce the concept as applied to agriculture occupations.

Beginning with this issue, we are attempting to include articles which further define the career education concept, and describe how the concept is applied to each level of education; specifically career education for agricultural occupations.

The teacher educator must have a clear understanding of how the concept is implemented in order to reorganize

Guest Editorial . . .

Bill Smith

Instructor in Agricultural and Environmental Science Teacher Education Rutgers University, New Jersey



William G. Smith

In this political year, an analogy between our chosen field of agricultural education and the political system in our nation may be of some value.

Agricultural education has a rich and proud history in the annals of vocational education. In recent years, however, it has been singled out as an example of vocational education that is behind the times and irrelevant, while in actuality vocational agriculture has adapted in significant ways to the changing economic and societal needs of our country. The local programs, which have developed at the "grass roots" level, have made many progressive changes based on the needs of their students in their respective communities. What has been lacking is a unified national "platform" that all engaged in agricultural education could support as representative of the entire program.

The agricultural education profession has addressed

Any efforts put forth by the agriculture teacher toward career education will pay big dividends.

pre-service and in-service instructional programs. The state department of education consultant must know how the career education concept is used, because when a teacher asks, "What do I do," he must be ready to discuss ideas with the teacher. The local teacher is not likely to change his present program unless he can be shown how the career education concept will make his job easier and more pleasant, and that students will benefit more from the new experiences than from his present program.

A progressive local teacher is a busy person, so each opportunity he (she) has for exposure to the career education concept should include concise discussions of:

1. What the career education concept is.
2. Why it is needed in our educational system.
3. How it can be implemented.
4. Why the agriculture teacher will probably have an important role.

That is what our 1973 themes are all about—RDD.

A NEW PLATFORM FOR ACTION IN AGRICULTURAL EDUCATION

itself to the need for change — change in the form of constructive transition — of our national program to accurately represent our field as it has developed to date and project what it should be in the future. Through the efforts of numerous leaders in our professional organizations and agricultural industry, working in seminars, committees and task forces, a new national "platform" for agricultural education has been built. The construction of this "platform" has been carefully planned and carried out so as to build on the sound foundation of over fifty years of agricultural education know-how.

Each "plank" of the new platform was carefully examined before addition to the "platform" by professionals and representatives of the agribusiness community; particular attention was given to the structural soundness of the various components and their "fit" into the entire "platform." The structure of this new platform is necessarily larger than the traditional production agriculture "plank" or even the ag-related "platform," as it incorporates a variety of exciting new and emerging occupational opportunities for a larger and more diverse number of persons to be served. The design of the new "platform" utilizes the unifying concept of career education.

(Continued on next page)

We are in the implementation stage now, of necessary transitions in vocational education in agriculture.

THE '73 "PLATFORM"

A National Program in Agribusiness, Renewable Natural Resources and Environmental Improvement Education

The sound foundation based on years of successful performance in vocational education includes supervised occupational experience and an integral youth organization, the FFA, as essential ingredients of vocational education in agriculture.

The structural design of the new "platform" is based on the career education concept, with major "planks" consisting of the following:

- ★ a recognition that we must become involved in elementary education to provide guidance and information so that students at this level are made aware of the careers and importance of our broad field;
- ★ a realization that students in junior high school classes need the opportunity to explore a variety of occupations in order to make wise decisions regarding future educational needs and occupational objectives;
- ★ the acceptance of the fact that most of our freshman and sophomore programs are more accurately described as Basic Career Preparation than specialized vocational training;
- ★ that our programs must provide our students with a variety of options for specialized vocational-technical training in several instructional areas at the secondary, post-secondary and adult education levels;
- ★ unification as a profession that the broad umbrella represented by this "platform" depicts our national program thrusts while recognizing that individual state and local programs will vary.

In political parlance, can we all "stand on this new 1973 platform" and implement the program transitions required by it??? As with political parties, the "platform" will only mean as much as leaders and members of our profession want it to!

The '73 Platform: Implementation of Transitions

The existence of a new national "platform" is essential as a basis for planning programs at the national, state and local levels. A re-ordering of priorities at all levels and by all segments of the profession will be essential if the necessary transitions are to be implemented and we are at the implementation stage NOW! With support from state supervisors and teacher educators, the Ag teacher is in an ideal position to provide leadership at the "grass roots" level where the ultimate implementation must take place. The Ag teacher is a career-oriented educator; he has numerous contacts in the school and community; he has conducted a successful career education program for youth and adults in the broad field of agriculture; he is a leader in his school and community. Recognizing that career education is the critical concept in the transitions required if the new "platform" for our program is to be implemented, how might

the Ag teacher start the ball rolling in his community? A few suggestions follow:

- ★ talk to fellow educators and community leaders about the concept of career education in agriculture and the need for this transition in education;
- ★ encourage closer cooperation between elementary and secondary educators in all fields by taking the first step — contacting elementary teachers and asking what could be done in career awareness and orientation in the broad field of agribusiness, renewable natural resources and environmental improvement — and how he might help with information, resource materials, etc.;
- ★ encourage school administrators to try this concept on a pilot basis, beginning with his program as a start.

In my opinion, any efforts put forth by the Ag teacher along the lines of career education are going to pay big dividends in terms of his vocational ag program: he will gain respect as an educator who is really interested in improving the education of all the students in the community; he will give additional visibility to his vo-ag program as a successful career education program that extends beyond the walls of the classroom and into the community and the world of work; he will recruit a larger body of students who are more aware of the opportunities, and better oriented to the requirements and advantages of careers in the new and emerging areas of agribusiness, renewable natural resources and environmental improvement occupations.

Conclusion

Agricultural educators have an enviable record of adapting their instructional program to the dynamic technological changes that have taken place in the field of American agriculture. The program, as illustrated by our new, 1973 "platform," has broadened to include exciting new occupational areas, and incorporated the career education concept. May we suggest that this group assume the leadership role in implementing an extensive, dynamic and sound change in the American educational system? We have made a good beginning. ◆◆◆

Themes For 1973

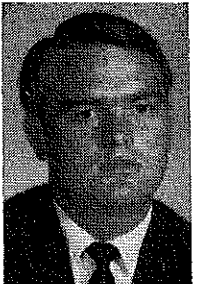
- April — Career Education: Youth Organizations as an Instructional Tool
- May — Career Education: Supervised Agricultural Experience Programs
- June — Career Education: The School's Responsibility For Placement and Followup
- July — Career Education: Unique Instructional Programs and Materials
- August — Career Education: For More Effective Teacher Education and Supervision
- September — Career Education: Articulation Among Local, Area and State Programs
- October — Career Education: Upgrading Adults
- November — NVATA Silver Anniversary Issue
- December — Career Education: Accountability In Evaluation

ELEMENTARY PROGRAMS FOR CAREER EDUCATION IN AGRICULTURE



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The Historical Setting

The concept of relating the learning (concepts, values, skills, and attitudes) of elementary children to the natural environment and agriculture is not new. In the long ago the great philosopher-educator Aristotle stated, "The first attention should be paid to that which is in accordance with nature; for by nature agriculture is first." Benjamin Franklin, who was a prime mover in the Philadelphia Society for the promotion of agriculture, proposed in 1749, "While the youth are reading natural history, might not a little gardening, planting, grafting, and inoculating be taught and practiced, and now and then excursions made to the neighboring plantations of the best farmers, their methods observed and reasoned upon for the information of the youths?"

Over the years, in some way or another, the inclusion of agriculture in the elementary curriculum has run "hot" and "cold."

At the turn of this century, Dr. Liberty Hyde Bailey, a naturalist at Cornell University, interpreted a new school movement known as the nature-study movement. The central idea of this new school movement was to put the child in sympathy with nature. Dr. Bailey suggested that to have a child grow a plant puts the child into intimate contact with a specific bit of nature. He also emphasized that the intensity of our plant-growing process as well as the increasing care of animals, such as is being practiced in modern agriculture, is a sure way to increase interest in a vital segment of the world about us. For many years the nature-study movement thrived. But as the years passed, for one reason or another, interest in the nature-study movement, as conceived by Dr. Bailey, lost its momentum temporarily. Today we see evidence of its coming back into the elementary school curriculum as school people try to devise schemes of making the child aware of the natural world about him.

The study of plants and animals and other things in nature had its beginnings in the time of Socrates and Aristotle. It captured the interest and imagination of many great educational reformers, among whom are Froebel, Pestalozzi, Rousseau, and Comenius. The study of agriculture and its accompanying natural environment just doesn't seem to leave the school curriculum. It stays in one form or another.

Agriculture and Agribusiness —
A Fertile Field For Realistic Career Education
Agriculture, being one of the career fields that utilizes

scientific, economic, mechanical, and leadership knowledge and skills, must have a "core" of subject matter in the elementary school curriculum, grades kindergarten through six. Agriculture and agribusiness as a facet of career education, is a 'natural' for systematically making the elementary school child aware of much of the world in which people work and live. Any educator who is familiar with modern agriculture knows that it is a complex business, involving a combination of scientific and economic principles that taxes the imagination.

To make the elementary child aware of agriculture and the many things of the natural environment is to teach him the care of things; to show him in some measure that there are many things that affect his life; and to make him aware that practically everything he enjoys comes from work by someone. There is no sounder way of making elementary-age school children aware of nature than that provided by objective agricultural instruction. Production agriculture (farming) for example introduces the human element into nature and thereby makes it more vivid in the child's mind.

Comprehensive Research Provides The Answer As To What We Should Include In Elementary Career Education.

During the fiscal year 1971-72, the Department of Agricultural Education at Mississippi State University, with the aid of funds provided under Part C of Public Law 90-576, conducted a comprehensive research project in curriculum development in agriculture and agribusiness. The

(Continued on next page)



Elementary children are made aware of the use of plants in beautifying their environment. The vocational agriculture teacher is serving in the capacity as a resource person. (Photo courtesy of D. D. Christensen, vocational agriculture teacher, Sturgis, Mississippi).

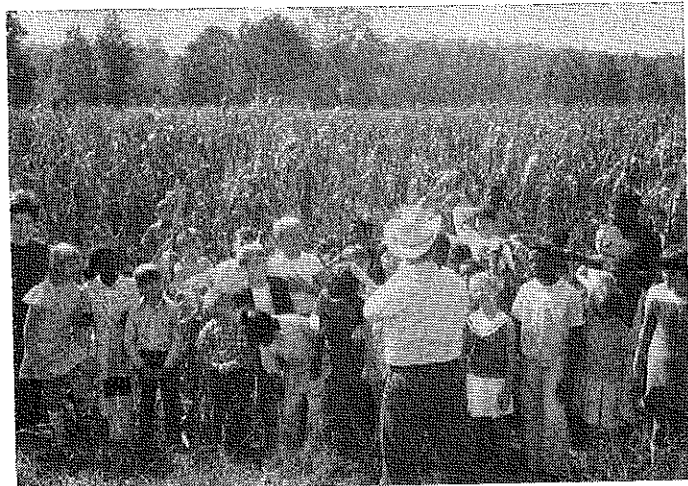
(Snowden & Shoemake — from page 149)

primary purpose of this research was to find common knowledge and skill areas needed by all persons engaged in or preparing to engage in agricultural and agri-related occupations.

One of the specific objectives of the research was to develop a core curriculum for agriculture and agribusiness on all levels of education. The questionnaire used in collecting the data included six areas of subject matter normally taught by vocational agriculture teachers. These areas were: (1) animal science, (2) plant science, (3) soil science, (4) agricultural business management, (5) leadership development, and (6) agricultural mechanics. This survey instrument was developed to appraise the knowledge and skill areas needed by the interviewees, who were agribusiness personnel, farmers, school administrators, vocational agriculture teachers and advanced secondary vocational agriculture students, in two aspects; namely, vocational and environmental.

After the basic data were summarized and evaluated, an outline of different subject matter for each area in the basic questionnaire referred to above was developed. The model for career education developed by the U.S. Department of Health, Education, and Welfare was used as a guide for designating the four different levels of instruction as follows: Level I — Elementary, including grades k-6; Level II — Junior High, including grades 7-8; Level III — Senior High, including grades 9-12; and Level IV — Post Secondary. In this article, Level I, Elementary (grades k-6) will be reported. It is hoped that the other levels referred to above can be reported in subsequent issues of this magazine. In an effort to explain career education in agriculture, Level I (grades k-6) is designated as a period of developing an awareness of agriculture and agribusiness, including some objective study of the natural environment.

An instrument developed for evaluation by a jury composed of vocational agriculture teachers, state supervisory personnel, vocational directors, county superintendents, principals, and curriculum specialists included all of the subject matter areas shown in the basic questionnaire. The various subject matter areas were divided into a number



The vocational agriculture teacher along with the elementary teacher captivates the imagination of the elementary children by relating the corn, which was produced by the work of man, as a source of food. (Photo courtesy of D. D. Christensen, vocational agriculture teacher, Sturgis, Mississippi).

of units as shown below. These respondents were asked if this type of subject matter could and should be taught on the elementary level as a facet of career education. The ratings of the jury, ranked from highest to lowest, were:

Elementary Economics and Business

The units to be taught under this module ranked in order of importance were: (1) What money is used for, (2) The meaning of money, (3) Man, money, and work, (4) The kind of economic system we live under, (5) The meaning of a free market, (6) How money is made.

Elementary Plant Science

The units to be taught under this module ranked in order of importance were: (1) Plants, man, and work, (2) Plants as a source of food, (3) Plants and the natural environment, (4) Plants as an economic factor (wood, lumber, etc.), (4) How plant life begins, (4) How plants grow, (7) Plants as a thing of beauty.

Elementary Leadership Development

The units to be taught under this module ranked in order of importance were: (1) Identity of a few national, state, and local leaders, (2) Kinds of leadership, (3) Man, work, and leadership, (4) Meaning of leadership, (5) Why we have to have leaders in our society, (6) How to recognize and follow good leadership.

Elementary Agricultural Mechanics

The units to be taught under this module ranked in order of importance were: (1) Man, tools, and work, (2) Learning about tools — kinds, use, etc., (3) How tools came into being, (4) Tools of primitive man.

Elementary Soil Science

The units to be taught under this module ranked in order of importance were: (1) The earth and its relation to life, (1) Man, soil, and work, (3) How soil supports animal and plant life, (4) How soil is formed, (5) The planet earth — what is it — how it came to be, (5) Our changing earth — causes of change, (7) What man has discovered about the soil.

Elementary Animal Science

The units to be taught under this module ranked in order of importance were: (1) Animals and their relationship to man, (2) Animals, man, and work, (3) Uses of animals, (4) How animals get their food, (5) Differences in animals, (6) How animals are developed.

The Vocational Agriculture Teacher Has The Expertise To Help The Elementary Teacher In Implementing Career Education In Agriculture

The "career education" concept, as it relates to agriculture and agribusiness, seems to have been clipped from the pages of history. The development of vocational agriculture programs in the school system after the passage of the Smith Hughes Act was indeed an effort to relate study to work. Moreover, in the agricultural sector of the world of work, instruction in vocational agriculture has been and is still typical of realistic career education. Many vocational agriculture teachers have developed flexible programs of instruction which prepare young people for clusters of occupations.

(Concluded on page 153)

"DON'T TALK TO ME ABOUT WORK"

Ray Agan, Professor
Coordinator of Vocational Education
Sam Houston State University
Huntsville, Texas



Ray Agan

be heard to explain to a classmate, "I'm not going to throw rocks at the windows in that factory anymore because I might work there someday. It is within walking distance of where I live."

Elementary teachers frequently become concerned about what must be deleted from the instructional program in order to become a part of the Career Education emphasis. The process for them is actually not one of replacement but of fusion. Good elementary teachers are already doing a lot of career awareness education and merely have to incorporate a different emphasis into some of the learning activities they provide for their students each year. For example, if the class normally visits the dairy during the year, spend a part of the time finding out about the people who work there and what they do as well as the traditional tasting of the dairy products.

Teachers of vocational agriculture working as a part of a team can assist materially in the planning of an increased emphasis on career education. Teachers of elementary education are normally good teachers of vocational lessons because of their concern and interest in the individual student, his interests and his needs.

Using ten guideline words, all beginning with the letter "S" may be of assistance to teachers planning elementary level career awareness education.

SPIRAL — Planners of career education should visualize a lifelong series of career adjustments and should plan learning experiences for students which set such a pattern in their thinking and attitudes. The spiral at the elementary level should not allow for choices of careers except as a fantasy choice. Children may hold up their hands in response to the question, "How many would like to work on an airliner?" today, and tomorrow make the same response to the question, "How many would like to work as a candy-striper in a hospital?" Elementary teachers can benefit from spiral planning which allows some teachers to stress jobs around the home and school, others the jobs in

Elementary teachers can stress jobs around the home and school, others jobs in the neighborhood, and others jobs in our town.

"Teacher, don't talk to me about work. My daddy has never worked; my granddaddy never worked much, and I don't plan to work any when I grow up."

This would not be an unusual comment for an urban elementary teacher of Career Education to receive from one of her students as she begins an occupational awareness learning experience designed as a part of a K-6 program. A few weeks later, the same student might

When a field trip is taken, study the jobs in the firm in addition to observing the product.

our neighborhood, others the jobs in our town, etc.

STAFF PLAN — Insofar as possible, total school staff participation at all educational levels is necessary for successful career Education. Specialized abilities and experiences of teachers should be used in a coordinated plan of teaching rather than the traditional grade level barriers. A teacher who is assigned at the 3rd grade level but has worked as a nurse during the summer months should be the one to explain about workers in the health occupations to all classes at the elementary level. Teachers of two different grades might both study occupations of the same area or each take classes to visit the same industry or each have class visitors from such agencies as the police or fire department but could decide in total staff planning different occupational emphasis they would make.

STUDENT PLAN — In career education the role of the students in planning with the teacher has a very high priority. This does not excuse the teacher from pre-planning but does challenge the teacher to lead the class in discussions where students form the objectives and learning activities of the class. Although the pre-plan of the teacher will naturally be somewhat adjusted by the student discussions a teacher worthy of the title can lead the class discussion to incorporate the vital elements of his pre-plan into the student plan. This failing, the teacher should seriously consider the challenge which is presented to this phase of his pre-plan. Many units, sections and lessons taught because of the whim of the teacher rather than the needs of the students may find their way out of the curriculum through this process.

SELF STUDY — Self study is the foundation of career education and all occupational planning. Elementary level students need to consider such questions as "Who am I," "Who do I want to be in 5 years — 10 years," "What changes must I make to become what I want to be." Studies of the characteristics of people they know and those they meet in their lessons are important. Studies of the characteristics of people found in certain occupations, such as the patience of people who deal with the public, the finger dexterity and scientific knowledge of the surgeon, the love for the outdoor life and concern for conservation of natural resources of the farmer, the forester, the game warden and others, all may become learning experiences which help the student understand himself as he is and as he desires to become.

SPECIALIZATIONS — The special abilities of students need to be identified as early as possible by elementary teachers and learning activities planned which will permit the student to become aware of and strengthen his spe-

(Concluded on page 155)

DEVELOPING CAREER EDUCATION MATERIALS

Alvin H. Halcomb
Subject Matter Specialist
State Department of Education
Auburn, Alabama



Alvin H. Halcomb

Career education has become a "household" word in educational circles. Much emphasis is being placed on this phase of education. In scope, career education encompasses educational experiences

beginning with early childhood and continuing through the individual's productive life.

In early childhood it provides an awareness of the world of work as well as direct experiences to motivate and captivate the learner's interest. As the child moves through school, he increases his familiarity with the world of work and acquires knowledge necessary to obtain meaningful employment upon leaving school.

The implementation of career education in the lower grades will require much planning and work in developing supplemental materials for the elementary school teacher to use. Although many areas of employment will be covered, our primary concern is with materials pertaining to agriculture or agribusiness.

In grades K-6, the program is one of orientation and information. Activity centered projects give the student experiences into which the academic disciplines are interwoven. There is neither intent nor desire to channel elementary students into any occupational decision. The objective is to build a base of experience and exposure upon which the student can most effectively make such decisions relating to his next step in the life-education continuum.

To initiate such programs, the elementary teachers need our help. People working in the development of instructional materials can be expected to assist in providing teaching outlines or units of instruction for these teachers. Many of the elementary teachers have little or no concept of agriculture or

FOR ELEMENTARY TEACHERS

The objective is to build a base of experience and exposure upon which the student can most effectively make decisions relating to his next step in the life-education continuum.

agribusiness careers or what type instruction would be appropriate for a grade level.

Instead of exploring or becoming aware of the broad world of work, it would seem best to limit each grade level to two or three occupational clusters per year. Thinking in terms of agriculture, these clusters might be: (1) Production Agriculture, (2) Agricultural Supplies, (3) Agricultural Products (processing, marketing, distribution), (4) Ornamental Horticulture, (5) Natural Resources, (6) Forestry, (7) Agricultural Mechanics, and (8) Professional Agricultural Occupations.

Let's look at Forestry as an example. The following is a suggested teaching outline that might be made available to elementary teachers.

CAREERS IN FORESTRY

I. Behavioral Objectives to Achieve:

- The students will be able to match the duties of forestry workers with pictures of forestry workers with 80 percent accuracy.
- The students will be able to describe the duties of forestry workers with 80 percent accuracy.
- Students will be able to tell six ways in which the forest helps mankind.
- The students will be able to recognize the different species of trees.
- The students will be able to identify the different products of the forest.
- To describe forestry workers as community helpers.

II. Concepts to Develop:

- Forestry is the planting and taking care of forests.
- A forest is land covered with trees.
- A forester is one who has charge of a forest.
- Many people make a living by working in the forest.
- Many kinds of wildlife live in the forest.
- Trees protect the soil by keeping

- the soil from washing away.
- Trees are cut to make lumber for building houses.

III. Subject Matter to Teach:

- Introduction to Forestry
 - Beneficial influences of forests
 - Influence on climate
 - Control of runoff water
 - Retention of snow melt
 - Environment for fish
 - Effect on flood prevention
 - Effect on wildlife
 - Effect on soil erosion
 - Effect on wind erosion
 - Social values of forests
 - Hunting
 - Fishing
 - Bird watching
 - Nature study
 - Camping
 - Picnicking
 - Hiking
 - Scenic or aesthetic value
 - Economic value of forests
 - Lumber, pulpwood, veneer, poles, railroad ties
 - Other products from wood such as disposable bathing suits and dresses, paper, sports equipment, and furniture
- Tree Study
 - How trees grow
 - Parts of a tree and their function
 - Tree growth
 - How trees reproduce
 - Seed production
 - Seed dispersal
 - Tree identification
 - Tree names
 - Identifying characteristics of trees
 - Guides to tree identification
- Occupations in Forestry
 - Forestry aid
 - Forest cruiser
 - Forestry engineer technician
 - Logger
 - Log scaler and lumber grader
 - Timber faller, marker, and buckler
 - Lumberman or sawmill employee
 - Special forest products worker
 - State or national forest employee
 - Forest ranger

IV. Motivation:

- Bulletin board about forestry
- Visit a woodland or forest area
- Invite forester or forest ranger to talk to class
- Read forest stories
- Sing songs pertaining to trees and forests
- Show films and filmstrips

V. Study Activities:

- Research activities
 - Make a forest tree scrapbook
 - Make a leaf collection

(Concluded on next page)

Grover C. Burkett
Elementary Principal
Bone Gap, Ill.



Grover C. Burkett

Most vocational educators and especially Agricultural Occupations Instructors have long recognized the need for elementary programs in career education. The immediate reaction to the question of expanding services is how can I do more than I am presently doing. The old approach of "where there is a will there is a way" is one that shall be expanded in this article.

Most elementary social studies programs presently have some units on agriculture which could be expanded to include the occupation approach as well as the subject matter approach. Sci-

A NEW APPROACH TO ELEMENTARY SCHOOL PROGRAMS

ence contains several areas that could be very easily identified, with the modern expanded definition of agriculture.

Secondary students in agriculture should be involved in the elementary career education programs. If the Agriculture Department could obtain a file copy of the social studies and science textbooks, secondary students could develop (as extra projects) career information related to the various areas of science and social studies. Students could also serve as resource people to the teacher of the elementary classes on a one-day basis. A suggested film list could also be developed and presented to each elementary teacher.

Mathematical problems in agricultural areas could be quite useful to elementary teachers in rural communities. Some students could be moti-

vated in mathematics as well as interested in agriculture by working the problems.

Since secondary students are around elementary students part of the time, a quality career education program at the secondary level should also influence the feelings and goals of elementary students. Secondary students should be sold on the importance of their occupations. They should be provided information and statistics about their chosen occupation that would allow them to discuss it with other students.

Agriculture instructors have acted as salesmen for their programs long enough. It is time for them to rely on the services of their students in a greater way. ♦♦♦

Ed.: Mr. Burkett is a former Agriculture Occupations Instructor.

(Halcomb — from page 152)

- Make list of items made from wood
 - Plant a small seedling
- Correlating activities
 - Language arts
 - Make vocabulary chart of new words introduced in units
 - Make a picture dictionary
 - Let class write stories about forests and forestry
 - Have a spelling test using words learned in study
 - Arithmetic
 - Count the growth rings on a cross-section of a log or stump to determine age
 - Count the different types of jobs available in forestry
 - Figure the cost of different size boards at current prices

(Snowden & Shoemake — from page 150)

The role of the vocational agriculture teacher in working with the elementary teacher in implementing career education in agriculture will have the most effective meaning when the vocational agriculture teacher is serving as a resource person on which the elementary teacher can draw. As shown above, one of the important "modules" in agriculture to be taught on the elementary level is elementary plant science. For the purpose of illustrating how the vocational agriculture teacher and the elementary teacher can work together in introducing agriculture as a facet of career education, the following procedure is suggested: To actually place the elementary child in sympathy with the plant world is to have him grow a plant. Here is a chance for the vocational agriculture teacher to help the elementary teacher to develop content concerning plants which will incite the youth to develop concepts, values, and meaningful attitudes

- Art
 - Draw pictures of different leaf shapes
 - Draw a tree
 - Make posters
 - Science
 - Discuss how trees grow
 - Discuss how trees get or make their food
 - Social studies
 - Discuss jobs in forestry
 - Discuss importance of forests to man, wildlife, and soil
 - Music
 - Sing songs
 - Act out songs
- Suggested Field Trip Sites:
 - Visit a forest or woodland area
 - Visit a lumber yard
 - Visit a pulpwood yard
 - Visit a paper mill
 - Visit a tree nursery

VII. Materials Needed:

- Charts
- Films and Filmstrips
- Bulletin boards
- Scrapbook
- Paints
- Scissors
- Paste
- Colors
- Construction paper
- Others

In conclusion, if elementary teachers are expected to orient and give information to their students pertaining to careers in agribusiness, we as agricultural or Agribusiness Education personnel must help provide the needed guidance and instructional materials to do the job. ♦♦♦

towards the importance of plants in the life of the Nation.

Perhaps the vocational agriculture teacher, if he does not have a land laboratory or a greenhouse, could construct a simple hotbed which could be used in demonstrating to the children how plant life begins and how a plant develops. If the agriculture teacher can cooperate with the elementary teacher in preparing a seed bed and having the children plant a few seeds as near as possible like the conditions which exist on the farm, it would be possible to illustrate that the seed must have the work of man to germinate and develop into a plant. Likewise, here will be a beautiful example of causing the child perhaps to see for the first time that there is some connection between plants, man, and work. To demonstrate the concept that plants can be a thing of beauty, the vocational agriculture teacher could help the elementary teacher understand the landscaping art by showing how many of their parents have used plants around their homes to beautify them. ♦♦♦

CAREER EDUCATION IN THE ELEMENTARY SCHOOL

Alfred J. Mannebach
Associate Professor
Higher, Technical and Adult Education
University of Connecticut



Alfred J. Mannebach

"When I grow up, what will I be?" To most young people today, that question is a bothersome one, a puzzle they may spend many years trying to put together.

Educational and governmental agencies, realizing the need that students have for career information, are developing and experimenting with career education programs to help bewildered young people become aware, explore and prepare for the careers which will be most meaningful to them.

Career education is not new. Its concepts are rooted deeply in our contemporary society historically, psychologically, sociologically, philosophically, and legislatively. Vocational educators have always been involved in various aspects of what presently constitutes the career education movement. They, along with guidance personnel and curriculum specialists, are the leaders in developing the current concepts of career education. Although the concepts are mature and established, the manner of organizing the concepts into an integrated whole and the term of "career education" is of recent vintage.

The major focus of career education is to help the students relate their education to the real life experiences encountered in everyday living. Career education is present and future oriented. It incorporates into the curriculum ways to facilitate the vocational maturity of the students. It includes those activities, in-school and out-of-school, which lead to the career development of the individual.

Career education at the elementary level is accomplished primarily by integrating concepts of self, social pressures and the world of work into the curriculum. Through well planned, organized and relevant activities, the teacher helps students become involved in real life experiences which are interesting and meaningful. The activities then serve as the vehicle for making the curriculum become alive and relevant to the students.

As an example, a field trip to the grocery store may serve as the basis for teaching many academic concepts while increasing the career awareness of the students. Most students have been to the grocery store, but they probably have not viewed their trip as an exciting learning experience. With a minimum of structure and a maximum of imagination, many concepts can be taught based upon the one field trip to the grocery store.

Concepts in mathematics can be taught by checking the weights, prices per pound, and prices of different kinds of meats. Weekly budgets can be made for the student's family and checked against the family shopping list, thus obtaining parent involvement.

Social studies concepts can be studied by tracing the origin of coffee, tea, nationality foods or other products. Customs of people who normally purchase different kinds

The larger the number of students who become aware and develop their interest in agriculture at the elementary level, the greater the possibility of enrollment in agriculture classes at the high school level.

of food can also be studied.

Agriculture and science can be taught by relating the growth of plants and animals to the products found in the grocery store. Nutrition can be taught by comparing prices and analyzing the different nutrient content of pet food and other food stuffs.

Physical science can be studied by discussing the locations of products, the operation of freezers and coolers, the amount of space needed, and other factors affecting the location and facilities of the grocery store.

Communication skills can be improved by identifying new terminology learned at the grocery store and incorporating it into the spelling lesson.

Art can be taught by providing the opportunity for students to draw the parking lot, floor plan, and layout of the grocery store, sketch window displays, or make signs to advertise products. Whatever the subject studied, the trip to the grocery store can make it more relevant to the students.

Careers in the world of work can be studied by exploring who grows, processes, inspects, packages, distributes, markets and advertises food products. Many of the careers can be studied as a group, others may be explored individually by interested students. An attempt should be made to help the students obtain direct contact with persons who are presently engaged in specific occupations. Through direct observation and inquiry, students will begin to relate their in-school activities to those of persons in the world of work around them.

The above description is only one example of the vast array of career education activities in operation in elementary schools that have career education programs. Through field trips, interviews, role playing and "hands on" activities, the students are becoming involved with their schools, communities and families in a meaningful and relevant manner. By relating in-school activities to out-of-school experiences, the students maintain interest and enthusiasm in their studies.

The rationale for career education is that students must make personal, educational and occupational decisions as they progress through life. Prior to the present focus on career education, the schools spent little time helping students focus directly on these problems. Students were expected to make these decisions automatically.

There is evidence, however, which suggests that preparation and assistance in making personal, educational and occupational decisions are important determinants to the

(Concluded on top of next page)

(Mannebach — from page 154)

future employment success and satisfaction of individuals. Through career education, this preparation and assistance becomes an integral part of the educational program. And with the complexity of personal, educational and occupational decisions confronting students today, it becomes an essential part.

Given this background of career education, how can the instructor of agriculture contribute to the career education program at the elementary level? Although he continues to have primary responsibilities at the secondary and adult levels, the teacher of agriculture can contribute in a supporting role.

First, he should be familiar with the emerging career education concept. Through selective reading, graduate education and inservice educational programs, teachers should become prepared to explain the career education concept and offer leadership to career education activities.

Second, he should be cognizant of the changes taking place at the elementary level. If no changes are evident, he should discover the location of pilot career education programs, visit them with principals, counselors, or other teachers, and help elementary personnel become oriented and informed of the possibilities presented by career education.

Third, he can facilitate the career awareness in agriculture by working closely with elementary teachers. Elementary students have a natural interest in plants and animals. Many elementary teachers are willing to capitalize on that interest; they need only someone with technical knowledge and skill to help them get started. Teachers of agriculture can assume that role.

(Ray Agan — from page 151)

Specializations. Frequently a wide range of learning activities related to careers will lead elementary teachers to discover talent and unknown abilities of their students and provide the opportunity to teach them how to use specializations to their advantage in their school work and career planning.

SENSES — Career education must be taught by using all the senses of the learner, and not be limited to sight and hearing. Learning experiences planned by the elementary teacher should use the students' sight, hearing, touch, smell, taste, and sense of kenesthesia as they relate to an awareness of occupations.

SEVERAL MEDIA — Learning experiences used in career education should not be limited to the traditional reading and writing but should include opportunities for learning through the medias of "Doing," "Making," "Writing," "Listening." Much learning takes place through the media of reading, but should include newspapers and magazines, poems, plays, etc., in addition to the text books. "Learning by doing" has long served vocational education and should be applied to career education through such media as maps, tapes, role playing, academic games, problem solving and investigations, diagrams, charts, dialogues.

SMALL GROUPS — The necessary variety for a vital program of elementary career education can frequently

Teachers who have outside occupational experience are good resource people.

- In addition, they can assist elementary teachers by:
- helping them become acquainted with agricultural leaders in the community
- arranging field trips to farms and agribusiness
- providing technical assistance on elementary class projects related to agriculture
- holding an open house in the agriculture department for elementary school children
- providing information about the vast array of opportunities in agricultural careers.

Working with elementary teachers and becoming knowledgeable about their problems, concerns and accomplishments can be a rewarding professional experience for a teacher of agriculture.

In summary, career education, as it becomes a more dominant aspect of school curricula, promises to produce a student much more knowledgeable about self, social influences, and the world of work than those whom teachers of agriculture are presently accustomed to having in their classes. Agricultural teachers must be cognizant of the programs experienced by students at the elementary level. Through their influence and involvement, general knowledge and skills about agriculture and agricultural careers can be incorporated into the elementary curriculum. The larger the number of students who become aware and develop their interest in agriculture at the elementary level, the greater the possibility of enrollment in agricultural classes at the high school level. Teachers should be aware of the changes being made at the elementary and junior high school levels and be willing to adjust, adapt and change their programs to cope with the changing needs, interests and aspirations of their potential clientele. ◆◆◆

be aided by more use of small group processes. Elementary educators usually make excellent use of the show and tell technique. Anyone who has participated in the show and tell technique has become aware of the additional learning which takes place through the telling of an experience to others, especially classmates. It is doubtful if all students in any one classroom need, have interest in, or should all, for example, take the same field trip or have an occupational acquaintance interview with the same person. If through the assistance of Para-professionals or mothers club or service clubs the adult leadership could be found to take small groups from the class to have learning experiences in occupations from a variety of sources, then have a class interchange and sharing of experiences, greater scope of learning would be enhanced.

SEARCHES — Students in the elementary classroom, as they discover themselves and their specialized abilities need to go on individual searches, try-out individual projects and complete individual activities in order to expand and develop their understanding of their capabilities in the world of work. Again, the sharing of experiences resulting from the searches are of value to the entire class as well as to the sharer in most cases.

SERVICES — The services of the local community are essential to any viable program of elementary level career education. The community takes pride in being asked to help with educational programs and will respond favorably to requests from elementary teachers to assist in providing learning experiences for elementary students. ◆◆◆

Wally Caldwell
Vocational Agriculture Instructor
Pasco High School
Pasco, Washington

The Emerging Agricultural
Occupations



Innovation is the key to the new emerging agriculture programs. Now is the time to use your imagination. The new emerging agriculture occupations will vary with the type of agriculture and agribusiness in a community. An advisory committee composed of persons in the various fields of agriculture will enlarge the agriculture teacher's scope. Preparation is needed in the high schools to prepare youth to enter the emerging agri-business occupations. This is necessitated by the tremendous changes taking place in today's agriculture. During this modern transition in vo-ag we must prepare today's students to take their place in our society and welcome the innovations that are taking place. The first vo-ag teachers used new ideas. Today we must show the same initiative before our programs are decimated by vocational programs being developed in many urban areas.

The emerging occupations are those that are needed tomorrow, but those needed yesterday are also important. These skills can be so varied and new,



Vocational Horticulture student with roses for the student body office. Plants are used throughout the school district.

COMPETENCIES FOR CAREERS IN AGRICULTURE

that many of these are not as yet listed in the "Dictionary of Occupational Titles."

A pilot vocational agriculture program is currently being developed in the Pasco School System for the training of advanced students. These students are from area agricultural communities. In this area program there are three large and three small high schools. The agriculture program was taught in four of these schools at one time but currently only two departments are in operation. Four years ago Pasco was planning to drop the agriculture program; but it was decided to form an advisory committee to study the situation. From twelve students registered for classes at that time, enrollment has increased to the current 240 student hours of agriculture being taught. There are now 3 agriculture teachers employed by the Pasco School District.

At the present time 16 students are bussed to our agriculture department from the other cooperating school districts. It will take time and cooperative efforts to introduce, start and motivate students under the new integrated program. With additional students and area wide support, we will be able to enlarge our program and offer a variety of classes.

The first two years in our agriculture program are still devoted to the basic program. The 1972-73 school year will have two classes in junior high, two classes of sophomore and junior agriculture. The senior agriculture students have three choices. They can take an agriculture IV class, a Cooperative-Work-Experience class, or a Vocational Horticulture class. We have the agriculture IV two hour class, but the other two selections available are for three hours of class time and carry 3 credits. The seniors from both agriculture departments in the area have these options open to them.

How Do Teachers Inform
Students of Needed Competencies?

The most pressing need is for a rep-

resentative and motivated advisory council. An agriculture teacher, through this group of agriculturalists, can keep abreast of changes taking place in his area. None of us have operated all of the new equipment being introduced. The advisory council will help you bridge this gap; they will know which skills are essential for the students to know. The agriculture teacher then must impress on his students the need for skill development in the field of instruction they have an interest in.

People with special skills should be brought into the classroom and before the advisory council. These people can describe competencies needed by the students. Most of these people will be anxious to help develop course materials to be used in the advanced agriculture classes.

The Pasco Agriculture Advisory Council is different in many ways. At a recent meeting there were twenty people in attendance. There was a State Representative on the committee, Chairman of the State Coordinating Council for Vocational Education, Assistant School Superintendent, Senior High Principal, Area Coordinator, Agri-Business people, successful farmers, and three agriculture teachers. It is through this type of thinking and action that we keep abreast of current problems in agriculture and vocational education. This involves a large segment of the community in the development of student competencies.

Curriculum Innovations for
Career Preparation Programs

Ideas are formulated through the discussion and suggestions of an intelligent group of people. It is the agriculture teacher's responsibility to put these ideas into motion and provide the leadership necessary to develop curriculum innovations.

Your principal should be an active participant in the advisory council meetings. This will provide leadership and emphasis to curriculum development.

(Continued on next page)

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The superintendent in charge of curriculum should be aware of developing ideas and needs of the rural community. If he misses a meeting a copy of the minutes should be sent to the administration office. The agriculture teacher becomes a core teacher, and with the aid of other teachers can direct the development of his students' skills and progress in high school.

From here you can use your imagination as to course titles, i.e. shop or farm math, vocational communication skills, vocational sciences (biology, ecology,

horse husbandry, etc.) and combinations so other teachers in the system can become involved.

How Do You
Determine What to Teach?

We should all survey our students' interests. The advisory council is interested in the school system and the students' progress and development, and have an interest in what is taught. Each student enters the agriculture class with his own differences and motivations. When student motivations for entering agriculture class are strong, the

teacher's problems in the development of the student tend to minimize themselves; the student becomes interested in his own leadership and development. This will aid each FFA chapter to become a moving, motivated organization and teaching device.

Unless vocational agriculture programs initiate the momentum to keep our place in vocational education intact, we may be lost to the developing programs in the urban areas. Through our teaching we must develop the leadership to keep a strong rural America. ♦♦♦

ARE YOU A KILLER?

L. H. Newcomb
Teaching Associate
Department of Agricultural Education
The Ohio State University, Columbus



L. H. Newcomb

and

Joe A. Gliem
Instructor, Agricultural Engineering
Iowa State University, Ames



Joe A. Gliem

From the moment of birth, it is a child's basic instinct to learn; he is basically a curious animal. "Any parent realizes that almost every child is curious. Little children seem to want to know, to be obsessed with the desire to explore themselves and their surroundings. They want to know what everything looks like, how it feels, what it tastes like, whether it will break, and on and on."¹

Consider the year-old child if you will — always anxious to discover, always trying to find out what his environment is all about. Unfortunately, we as parents almost immediately characterize this basic instinct as devilishness or something worse. We are quite guilty of "wishing" Johnny wouldn't get into everything.

Even in elementary school, kids want to know — to learn — to contribute — to succeed so much that they often get so excited they jump up out of their seats waving their hands wanting to ask or to answer.

What about high school? By the senior year, are students waving their hands or even raising their fingers —

wanting to learn, or are they listless, tuned-out and turned-off to the point where they don't care.

All too often the latter seems to be the situation we as teachers face. Let's stop long enough for each of us to examine our actions in the classroom. Do we as teachers use our professional knowledge, training, skills, strategy, etc. to nourish and further develop the students' natural instinct to learn or are we so negative as to subdue and even eradicate such a basic drive as curiosity and desire to learn? Are we in effect adding to the more than 850,000 elementary and secondary school dropouts by our behavior in the classroom?

Our first impulse is to either say we are innocent or to eloquently rationalize that we are not to blame, but are we? Most of us could certainly do more to get students interested. One sure way to get students excited is to get excited ourselves; to be an enthusiastic teacher. We need to either get with it or get out. We need to build a fire under our students so they want to learn — not to extinguish what little natural curi-

osity and enthusiasm they have managed to retain in the face of countless teachers who bore youth to death by style as well as subject matter.

Just as the champion athlete does not gain weight during the contest, we too should not fail to expend sufficient energy in our own performance. At the day's end, we should feel somewhat exhausted by our performance. Teachers who come out of the classroom yawning and bored can expect little more from those students who are forced to endure such mediocrity. There is no wonder students under these circumstances are listless, tuned-out, and turned-off.

"Professional teaching includes those activities which facilitate the achievement of educational purposes; it excludes those which impede their attainment."² Unenthusiastic teachers who stifle students' curiosity, creativity, and desire to learn should be excluded from the teaching profession. ♦♦♦

1. Frymier, Jack R., "The Nature of Educational Method," Columbus: Charles E. Merrill Books, Inc. 1965, p. 111
2. Ibid, p. 299



Elmer J. Johnson

"Whenever he was given a job to do, regardless of its magnitude or complexity, you could depend upon it being done correctly, thoroughly, on time and in a genuine spirit of 100 per cent cooperation." This statement by Dr. W. T. Spanton, past National FFA Advisor, describes his impression of E. J. Johnson, former Pacific Regional Program Specialist in Agricultural Education for the U.S. Office of Education. Mr. Johnson, or "Elmer" to all who have known and worked with him, is recognized as an outstanding educator and administrator. He is known for his sterling qualities of leadership, his knowledge and competency in vocational agriculture and FFA, and as a dedicated and tireless worker who always has been keenly interested in the welfare of others.

The son of an immigrant farmer from Denmark and a mother who was a home economics major from Sweden, Elmer grew up on a livestock and crop farming "spread" in Kansas. His early and broad experience on the land helped develop competencies that would be of great value to him in later years.

Mr. Johnson attended Kansas State Agricultural College (now Kansas State University) for eight quarters before entering Military Service during World War I. He served with the 41st Infantry, being disabled in the line of active duty. Forty months in the hospital gave him ample time to make decisions about his future that would affect the lives and welfare of thousands. He entered Colorado Agricultural College (now Colorado State University) in 1923, where he graduated in 1926 with scholastic honors,

Contributions To Agricultural Education:

ELMER J. JOHNSON

and a major in animal husbandry. That year he began teaching vocational agriculture and coaching athletics at Pierce, Colorado. The next year, Elmer became a full-time teacher of vocational agriculture at Fort Morgan, where he placed great emphasis on post-high school programs. In 1930, he acquired an MS Degree in Education, and continued training at Colorado College of Education toward a PhD in school administration.

When the FFA was organized, Mr. Johnson became the local advisor and had great success. Two of "his boys" made the cherished American Farmer Degree, two won the State Public Speaking Contest with one competing in the National Public Speaking Contest. Nine State Champion Judging Teams were developed. These champion teams won many national honors. However, Elmer will tell you he is most proud of the many youth and adults who have become established in farming and related vocations through this instructional program.

As a beginning teacher in Colorado, I became well acquainted with Mr. Johnson while competing against him in many vocational agriculture and FFA activities. However, I vividly recall the high respect all teachers had for his ability, his competitive spirit, and success. Yet, little did we teachers know he was building a solid foundation for his future responsibilities as General Superintendent of all five National FFA Judging Contests from 1942 until 1965. Elmer has always expressed, and with great pride, that the National FFA Judging Contests were the real "catalyst" that brought about the founding of the FFA.

The confidence of teachers and school administrators in Mr. Johnson's leadership had considerable influence on his appointment to the position of State Supervisor of Vocational Agriculture in Colorado. He placed great emphasis upon adult programs, farm mechanics and in-service training.

Changing world events resulted in

Mr. Johnson being called to Washington, D.C. in 1941, where he made a great contribution to the World War II effort by serving as Special Representative to many wartime programs. He did an outstanding job; and later was employed as a Federal Agent and Program Specialist in Agricultural Education for the Pacific Region. In serving the Pacific Region, he traveled almost one million miles to administer, improve and provide service to a program he believed in and was dedicated to uphold. While serving on the FFA Board of Directors and FFA Foundation Board of Trustees his words of wisdom, experience and farsighted vision helped make the correct decisions in behalf of the FFA. Serving as a member of both Boards from 1942 through 1965, he saw many historical milestones of the progress in FFA. Mr. Johnson is exceptionally proud of his having a part in the writing and implementation of PL-740, the National Charter granted to the FFA by the U.S. Congress in 1950. We cannot do justice in words to the achievements of Mr. Johnson during 40 years of selfless service to agricultural education and the FFA, but some of these are worthy of noting.

Teaching:

His competency, accuracy and meticulous qualities were reflected in the performances of those he taught. His services were in great demand, and vocational agriculture teachers, state supervisors and teacher educators in

(Continued on next page)

Wm. Paul Gray is National FFA Executive Secretary.



Wm. Paul Gray

(Gray— from page 158)

"his" Pacific Region benefited. He taught summer sessions in Colorado, Hawaii and Montana, in addition to providing leadership at numerous regional and national conferences.

Writing:

Perhaps one of his greatest contributions to vocational agriculture was in the field of farm mechanics. He co-authored two text books, in addition to writing more than 40 technical and professional manuals and bulletins on various phases of education. He wrote more than a hundred handbooks, teachers' guides and leaflets that ranged from sugar beet production to animal production to FFA. He also found time to produce over 100 feature stories for agricultural magazines.

International Education Programs:

Mr. Johnson interviewed and advised most of the students and educators coming to the U.S. in agricultural education programs, especially those

Darrell W. Smith
Reiman Associates
Milwaukee, Wisconsin

VO-AG TEACHING BRINGS SATISFACTION TO NVATA AWARD WINNER



Ernest Muncrief

Ernest Muncrief's efforts as vocational teacher in Marlow, Oklahoma, netted him the 1972 CIBA - GEIGY Award for contributions to agriculture from the National Vocational Agricultural Teachers' Association.

"Being associated with these young men is the most rewarding experience anyone could have," says Ernest Muncrief, 1972 Geigy Recognition Award Winner.

Muncrief's feelings about his profession parallel those of countless other vo-ag instructors around the country.

"I catch these kids in a transition period, between 14 and 18," he says. "And the real satisfaction from this job is just growing those kids up. I think that means more than any skill I might teach them because this transition period is the most important time in their lives."

who had a vested interest in farm mechanics. He received applications and made recommendations for U.S. educators seeking professional positions abroad.

I vividly recall visiting with agricultural educators and leaders in governments in foreign countries who knew Mr. Johnson. They were happy to relate how well they remembered the "tall and friendly American" who was understanding and warm in his working relationships, and who was of great assistance to them. No doubt, we would agree that the impression of America abroad would be much better if more Elmer Johnsons had been working in other countries as he did in Japan, the Philippines, Costa Rico, Panama, Peru, Denmark, Great Britain, Germany, Sweden, Canada and Mexico.

The FFA:

His tireless efforts and great contribution to the continued improvement of the National Judging Contests have

developed confidence in thousands of FFA members. The opportunity for "learning to do and doing to learn" resulted in effective use of classroom instruction to develop judgment, confidence and managerial skills. The recognition of team effort for a job well done carried out a basic philosophy of FFA. Few know the long hours Mr. Johnson worked acquiring and arranging classes, engaging competent judges and managing the recognition banquets.

Emer was a "jack of all trades" at the National FFA Convention. For many years, in addition to Judging Superintendent, he managed the registration of delegates and guests, arranged the first aid room, planned and managed educational tours of Kansas City, maintained the mail room, as well as overseeing many other details. He was in charge of the Pacific Regional Public Speaking Contest, as well as Chairman of the National Special Study Committee on Judging Contests.

(Concluded on page 167)

"Anything that I may have accomplished with these kids is the most important of any success I may have achieved."

To be successful a man must feel that his work is important. And the Oklahoma believes that vocation agriculture is essential.

"Vo-ag is the type of program that has never been duplicated in any other field of education," he says. "Like agriculture itself, it has changed enormously since I first got into it. At first, all I taught was basic agricultural skills, but now we have farm shop training, welding, and preparation for all phases of agribusiness."

Agriculture needs leaders, Muncrief believes. "I've tried to incorporate leadership into this program which will help the boys in any field they enter," he explains. "Until this type of training can be duplicated in some other program, there is simply no replacement for vocational agriculture."

Vo-ag teachers tend to become a part of their communities, perhaps because their ties to agriculture and farming just naturally foster close relationships with local citizens. That's how it's been for the ex-farm boy from Ard-

more.

"I've spent my whole career in Marlow and I don't plan on leaving," he says. "It's home. My wife feels the same way. These are our people."

Since Muncrief's own vo-ago instructor left a lasting impression on him, he realizes the long term effects his own classes may have on students.

"I don't believe I've seen my senior ag instructor since I left home 35 years ago, but there's no doubt he had a great influence on me.

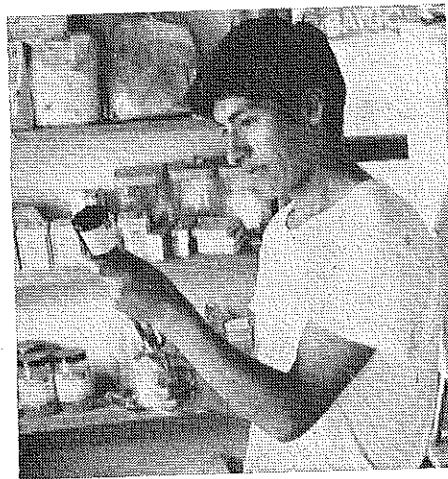
"I try to live a life that will make kids good citizens if they follow in my footsteps. In the classroom I don't tell someone to do something, I say 'let's do it.'"

Being honored by his fellow teachers left a deep impression on Muncrief. "You feel when you win an award like this that 10,000 other communities would challenge you because they feel they have the best vo-ag teacher. I think that is good."

The remarkable thing about Muncrief is not the way he feels, but the fact that almost every boy who's ever passed through a vo-ag curriculum probably knows another teacher who feels the same way.

CHAPARE—A Team Approach To The Educational Challenge In Bolivia's Jungles

Arlen Etling¹
Ensign, Kansas



Pedro Apaza preparing a vaccination for cattle. Rabies, brucellosis, and hoof and mouth disease are all wide spread and common.

In the depths of the Bolivian Jungles there may be found a multi-national Chapare Team which is attacking problems of community development in what has been described as one of the most backward areas in the world. Organized several years ago, the Team received financial support from Church World Service. Now project support comes from a variety of sources including OXFAM², United Methodist Committee for Overseas Relief, local churches and U.S. missionary and service organizations.

Team members are mostly two year volunteers or, in the case of the Bolivians, on one-year contracts. "We must mobilize the existing forces," ob-



Lloyd Yoder (on the right) with a farmer and a member of the advisory committee, in front of a Philippines style chicken coup which was built by the Chapare Team.

serves Lloyd Yoder, a soft-spoken Mennonite, was chosen to direct the Team due to his experience in agricultural development in Bolivia.

In spite of the organization, dedication and technical skill of the Chapare Team, this lowland region of Bolivia with an average annual rainfall of 200 inches, presents tremendous challenges. The greater part of Chapare is only now being opened up and settled. Almost no machinery or draft animals are used on the farms. Very few tools are owned in the Chapare besides the standard axe and machete. Essential agricultural and veterinary supplies are not available locally; even some standard foodstuffs are imported. Crops spoil while awaiting irregular transport facilities to carry them out on treacherous one-way mountain roads. Local markets range from very limited to non-existent which means that the truckers can control the market.

Even the most established farmers rely principally on slash and burn methods to clear new land. Seeds are sown by hand among stumps, logs and rubbish (usually rice, corn, yucca, bananas or papayas are planted first) but secondary growth quickly takes over, often leaving worse conditions than before clearing. The farmers who are able to progress beyond the subsistence stage to market production usually turn to citrus fruits and coca³. Citrus prices are subject to wide, seasonal market fluctuations; the coca prices in recent years have dropped sharply and steadily. Diversification is an obvious need.

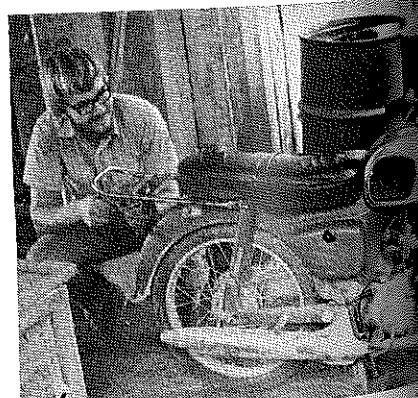
Attacking these problems the Chapare Team located two volunteers in areas of need and opportunity. The main criterion was an established community whose members have not developed beyond the subsistence stage but are receptive to new ideas and methods. Work was also sustained, with less emphasis, in the older parts of the region as well as those areas into which settlers are now moving as road construction gives them access to the country.



A Bolivian farmer indicating a graft he has used to diversify his citrus production.

Keith Amstutz, a Mennonite volunteer from Iowa, built his house near a village which had asked for help in establishing livestock. With his background in hog production Keith soon developed a small breeding operation to provide stock for certain local farmers and also to maintain a demonstration facility for the community. Keith used simple techniques and local materials to build a shelter and fences thus protecting his hogs from diseases of neighbors' hogs which were allowed to roam without control. Wild animals including the principal hog pest, rabid bats, were also kept from contact with the hogs. A simple, inexpensive ration

(Concluded on page 166)



Jerry Regier repairing his motorcycle in Keith's shop. All Team members are supplied with a motorcycle for transportation. There is no public transportation in Chapare.

OPINIONS OF SCHOOL ADMINISTRATORS CONCERNING SELECTED ASPECTS OF THE PROGRAM OF VOCATIONAL AGRICULTURE IN NEBRASKA

Larry L. Viterna
Agriculture and Natural Resources Occupations Instructor
Norris District 160
Firth, Nebraska



Larry L. Viterna

The Vocational Education Act of 1963 and the Vocational Education Amendments of 1968 have challenged vocational education to do a better job of meeting the needs of people. Now, "career education" continues the challenge. Thus considerable program planning and updating must continue with careful consideration given to the opinions of those highly responsible for program change.

The literature reviewed seemed to support the fact that school administrators in Nebraska high schools have a key role in initiating and maintaining vocational agriculture programs. The literature also revealed a lack of studies available to Nebraska educators which focus on the opinions of school administrators concerning programs of vocational agriculture.

The purpose of the study, therefore, was to obtain opinions of school administrators and to present them in a form useful to those involved in program development in vocational agricultural education.

This study was designed as a survey of opinions of superintendents and principals in the 124 Nebraska public schools which offered vocational agriculture as a part of their curriculum during the 1970-1971 school year. Questionnaires were mailed to 115 principals and 121 superintendents in 124 Nebraska public schools. Of the total sample, a response was obtained from 122 of 124 schools, or 98.3 per cent, with 93 (76.8 per cent) superintendents and 91 (79.1 per cent) principals responding.

From an analysis of this study, certain conclusions and recommendations

may be made for the state and local supervisors of vocational agriculture programs, teacher-educators in colleges and/or universities, teachers of vocational agriculture, local and state advisory councils, local boards of education, and school administrators. The investigator recognizes that there may be equally valid ways of interpreting the data from the present study. However, the conclusions and recommendations or suggestions which follow were based on the investigator's analysis of the data.

1. Vocational agriculture instructors need to become more involved in the total school and work more closely with other faculty members. It is recommended that all teachers work together to produce the most complete career oriented educational program possible for students.

2. Since school administrators lack formal education in vocational education courses, it seems reasonable to suggest that before initiating programs of vocational agriculture, school administrators should receive considerable instruction in the nature of the program and the administration of the program. Considerable funding may be necessary to assist administrators in becoming prepared to promote and organize programs.

3. Summer programs of vocational agriculture are being observed closely by administrators. It is recommended that vocational agriculture instructors use the time available to them during the summer to provide student instruction through courses, mini-courses, instructional visits and educational tours, and to develop instructional programs that aid in the occupational preparation of students.

4. From the evidence in the study, teaching methods and classroom and shop facility management were areas of some degree of weakness. It is rec-

ommended that teacher-educators provide in-service programs in teaching methods and curriculum development for vocational agriculture instructors.

5. The findings of this study indicate that administrators favor the development of citizen advisory committees which could result in community involvement in program planning. It seems apparent that citizen-advisory groups should be organized and utilized for vocational agriculture programs.

6. Since school administrators indicated that adult and young farmer instruction should be centered around a record-keeping and farm analysis class, it is recommended that this program receive high priority by vocational agriculture teachers. Also, that adult instruction in agribusiness be considered.

7. The findings in this study revealed that the hiring of additional teachers of vocational agriculture depends largely upon the enrollment in the day-school program and the number of courses offered. It is suggested that enrollment is maintained at as high a level as possible.

8. Administrators were not primarily concerned that a high per cent of vocational agriculture students need to enter an agricultural occupation at some specified period of years following graduation. Consequently, it is recommended that administrators not judge the merits of a program solely on the basis of the number of students who enter an occupation.

9. Since the school administrator is directly responsible for programs in the school, it is recommended that further research be conducted to determine the administrator's point of view regarding programs of vocational agriculture. ♦♦♦♦♦

Evaluating A New Teaching Technique

-POWER TOOL SAFETY



Mervin D. Bettis

Mervin Bettis, Instructor
Agricultural Engineering Department
Iowa State University, Ames

Agricultural mechanics laboratory instructors are continually trying to find more effective methods of teaching shop safety. A number of methods have been tried such as safety lists, safety quizzes, part identification and student activities, but still accidents occur. Most educators believe that safety should be taught as an integral part of the course; however, the real job is to develop a method by which the main objective, that of teaching the student how to safely and effectively use the power tool, can be accomplished. Most instructors involved with shop type activities will agree that teaching safety is an attitude or habit type activity in which we attempt to develop in the student a positive attitude for the importance of safety in the shop. With a positive attitude generally a student will form and follow safe habits in working with power tools.

With these generalities in mind, it was decided to attempt to put some of the techniques and methods previously tried into a study unit or study guide and research the effectiveness of these study guides in teaching shop safety. The purpose of this recent study was

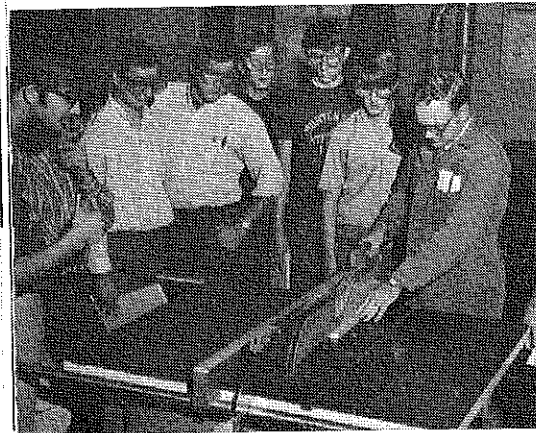


Figure 1. The instructor in agricultural construction demonstrated the safe and effective method to operate each power tool.

to determine the effectiveness of prepared study guides in teaching the safe use of power woodworking equipment.

Design of the Experiment

The population consisted of all students enrolled in an Agricultural Construction course at Iowa State University. There were 46 students enrolled in this class during the quarter the study was conducted. The one lecture group was randomly separated into four laboratory groups. Each of the four individual laboratory groups was then designated as a treatment or a control group.

A pretest and general information sheet were completed at the beginning of the experiment. The Bennett Mechanical Aptitude Test was also administered at the beginning of the experiment. A posttest was given at the end of the experiment along with a laboratory practicum. The posttest was designed to measure knowledge gained during the experiment while the laboratory practicum was used to measure the students' ability to safely and effectively use power tools.

A study guide was developed for each of 8 different power tools by Dr. Thomas A. Hoerner and the author to be used as a supplement with regular teaching of the safe operation of these 8 tools in the laboratory. The eight power tools used in the experiment were: portable hand saw, table saw, radial arm saw, band saw, jointer, electric drill, drill press and the router. The study guide, consisted of: (1) part identification, (2) safe operational procedures, (3) general safety practices, (4) completion questions and (5) suggested reading references.

The study guide for each power tool was handed out to the students in the

Thomas A. Hoerner
Associate Professor
Agricultural Engineering Department
Iowa State University, Ames



Thomas A. Hoerner



Figure 2. The students put into practice the abilities learned from the demonstrations and the study guide.

treatment groups prior to the demonstration by the instructor of the safe use of that power tool. The students were instructed to read the study guides and answer the completion questions. The study guides were collected at the following laboratory period and evaluated, and later returned to the students for future reference.

The control groups were taught in the conventional method exactly the same as the treatment groups except they did not receive the study guides. The experiment included three basic phases or steps, these being:

Phase I: The instructor demonstrated the safe operation of each power tool to the students during their laboratory in both the treatment and control groups. Shown in Figure 1 is one of the groups receiving a demonstration on the safe and proper use of the table

(Continued on top next page)

Bettis & Hoerner — from page 162)

Phase II: After the demonstration each student completed specific operations using each power tool with the instructor observing. In addition, the students used most of the power tools during the course while constructing a class project. The student in Figure 2 is safely using the hand electric drill immediately following the demonstration of this power tool.

Phase III: Phase III in the experiment



Lionel Tocher

It would be hard to single out any given set of accomplishments for the two men who spent 40 years teaching together at the Dos Palos High School. The wide variety of student accomplishments is legendary — 80 State Farmers; 17 American Farmers; 4 Regional Star Farmers; 2 Star State Farmers; Winning Teams in the State Contests for Parliamentary Procedure, Agriculture Mechanics, Livestock, Dairy and Agronomy; National Foundation Awards; Lincoln Arc Welding Awards; Fair and Show winnings that would take hours to enumerate and Leadership provided in the Section, Region, and 6 State FFA Officers. The FFA Chapter grew from 25 members in 1930 to 252 members in 1971 when it became the largest FFA Chapter in California and received the 25th consecutive Master Chapter Award. They have taught grand-sons of the Chapter's Charter Members in 1930.

Now to give you a little of their background, Lionel Tocher was born in Middletown, California to Scottish parents. His dad was a farmer and blacksmith and Lionel learned both trades from him. Lionel attended college at Stanford, San Jose State and Cal Poly at San Luis Obispo. He holds in both the treatment and control groups. Shown in Figure 1 is one of the groups receiving a demonstration on the safe and proper use of the table

(Continued on top next page)

involved the student in the laboratory practicum. Each student received a 1" x 6" x 2' board and an instruction or plan sheet. The operations on the plan sheet required the student to use the eight different power tools. An expert judge was stationed at each power tool to observe and evaluate each student on his safe operation of the particular tool. (Note Figure 3.) Each judge scored all 46 students on that specific power tool using a score card designed especially for that particular

(Concluded on page 166)

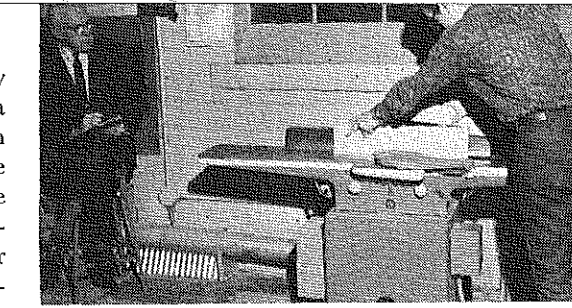


Figure 3. A judge evaluated each student on his ability to operate the power tool safely. These data were used to help determine the effectiveness of the study guides. Each student demonstrated his ability on eight different power tools.

Lionel Tocher And Kenneth Easter Retire After 40 Years Together At Dos Palos High School

Alfred Wm. Hansen
Vocational Agriculture Instructor
Dos Palos High School
Dos Palos, California



Kenneth H. Easter

Luis Obispo and was Chairman for the first 5 years. In 1952, he worked with the Lincoln Arc Welding Foundation to establish the National Lincoln Arc Welding Contest and served as one of the judges in 1965. He served as President of the Central Region in 1958, and received the Central Region CATA Star Teacher Award in 1969. He has served on the Self Help Housing Board for 7 years, the Merced Credit Union Board for 4 years, and was Masonic Lodge Master in 1945. He was appointed as Dos Palos City Councilman in 1962 and received the **Resolution of Thanks** from the City Council, the Dos Palos High School Board of Education and California Assembly Resolution #237 in 1971 for his contributions to his community. He married a former girls gym teacher at Dos Palos, Mary Bob Meskimmons, in July 1933, and they have 3 sons.

Kenneth H. Easter moved with his family from Oregon to California by wagon. His father was a teacher and a farmer. His Grandfather was a teacher, Doctor and Preacher so Ken came honestly by his ability to speak and train Parliamentary Procedure teams. He enrolled at the first classes of Vocational Agriculture offered in Sabastopol and Healdsburg, and then worked his way through the University of California at Berkley, where he was on the Agriculture Honor Fraternity and a member of the staff of the College Ag-

ricultural Magazine. He served twice as president of the local CTA group; is a charter member and past president of the Dos Palos Rotary Club; received the AVA Award for Distinguished Service in 1965; was featured by the U.S. Office of Education and Look Magazine as the "Top Teacher in the Western United States in 1960"; was awarded the American Hereford Association Award in 1959 for his outstanding contributions in Leadership to rural youth and provided with a trip to Kansas City for a week; is a Past President of the California Agricultural Teachers and received the Central Region CATA Star Teacher Award in 1961. In 1931, he married his high school sweetheart, Rhoda, who he met six years before while attending Healdsburg High School, and they have two sons and a daughter. Both boys were State Officers and American Farmers.

Together, they originated Parent and Son Banquets, football concessions, FFA Barn Dances and Queen Contests, Fairs and shows, FFA Open House and other innovations. They saw the job that needed to be done and together, they did it. We salute Ken and Lonnie for the example and challenge that they have provided for all of us as they have imparted of their time, effort, and skills to over 3,000 youth in their classes, and to 1,500 fellow agriculture teachers in the CATA. ◆◆◆

WATER MAKES IT BETTER!

The title phrase appears on the cover of a small pamphlet written for C.M.I.C. (Central Minnesota Irrigators Corporation). Its distribution as well as the non-profit organization itself has been aimed at promoting irrigation and its desirable by-products in central Minnesota's sand lands. Although accomplishments are intangible, it is the writer's opinion that much has been done.

The challenge then is to use, but not misuse this resource. Because we enjoy common ownership, we also fall heir to the responsibility of preservation of water in its pure life giving state for this generation and all those to come. A "Priority Use" policy is certainly reasonable whether laws are written to affect it or not. People, wildlife, industrial and then irrigation use is such a priority list. One may add or subtract or even juggle any part of the list except the first entry, "People." No matter how the rearrangement is settled, irrigation uses will likely be at or near the lowest priority. What's more — if criticism, justified or otherwise, is aimed at water users — irrigation will be the most vulnerable.

It follows then that those of us who are irrigators or potential irrigators should use every means at our disposal to conserve the water resource in quantity and quality as it pertains to our priority use, but also protect ourselves by being accountable to all other uses.

CMDRIF (Central Minnesota Demonstration Research Irrigation Farm) of the Staples Area Vocational Technical School has taken several steps to demonstrate irrigation practices that will be helpful in gaining those ends.

One Step

Irrigators are large users of the highly leachable nitrogen and their aquifers, used jointly for irrigation and drinking, are often very shallow. Therefore, improper application of this nutrient in an attempt to get maximum yields may be a serious pollutant. The possibility is real and the public has a way of overreacting; but no matter what the

The water that "belongs to everyone yet no one" is becoming more and more a valuable resource.

reason, a need was felt to "arm ourselves" with research data.

Thirteen 1 3/4" observation wells were installed at CMDRIF. The water table is at 11 3/4' below ground surface so the wells are only 15' deep. Optimum and excessive amounts of nitrates and sulphates were applied to the surface of the ground in a 30' pattern around each well. Irrigation and normal rainfall occurred. The soil was tested in one foot increments before treatment and after the season. The water was tested before treatment, weekly during the first years growing season and monthly through the winter and the following year. Even the highest nitrate applications did not show significant increase in NO₃ in the water samples. However, samples taken previous to the application of fertilizer were surprisingly high. This cannot be completely explained at this time except to say that the test field had been irrigated and received relatively high rates of nitrogen fertilizer three years prior to the test.

Our procedure of fertilization had been such that all of our nitrogen was applied prior to June 10th and this was changed to a "spoon feeding" approach. That is; 20 pounds applied prior to spring plowing, 20 pounds with the planter and 140 pounds through the irrigation equipment in four or more applications between June 15th and August 5th. The fertilizer injectors used to demonstrate this procedure were of three types. Many irrigators have gone this route since our beginning here.

A reasonable "Priority Use" list, from high to low, should include people, wildlife, industrial, and irrigation.

Wil Meierhofer, Instructor Irrigation Technology II and Research Farm Director Staples Area Vocational Technical School Staples, Minnesota

Another Step

Although sprinkler irrigation is much less wasteful of water than the present predominant surface irrigation method of our nation, it is nevertheless more wasteful than a new method of irrigation, namely subsurface. Research had been started in Texas, Nebraska and a few other states, but none has begun in Minnesota. Therefore, with an eye toward future shortages of the valuable resource, water — we undertook a sub-surface project here at CMDRIF. It's a series of 5/8" plastic tubing with small holes in it spaced 24-40" and buried 8-14" below the surface. Although the cost of the system and iron bacteria are major deterrents of present development, the writer believes that this system is welcome if not necessary in water use conservation of the future.

Still Another Step

Extensive or excessive pumpage on a local basis may cause "water mining" to affect people on a regional basis. Therefore, hydrological surveys were performed by the U.S. Geological Survey at our request and with local financial and other participation. Much of our state's water resource available to irrigation is now documented as a result. U.S.G.S. reports survey quantity and quality of water.

And Another Step

Our area's contract with the Division of Waters through CMIC (Central Minnesota Irrigators Corporation) and CMDRIF personnel has helped us keep a watchful eye on water permits and social injustices. Generally, we favor more stringent laws to regulate ourselves.

Summary

No man has the right to destroy what belongs to another! Yet no one should impose his uncompromising convictions on others without empathy. As irrigators, we accept our responsibility to preserve the water that belongs to all of us. For those of you who are not irrigators, please follow our efforts and understand the details before you place judgments; then "water will always make it better" for all of us. ♦♦♦

WHAT YOUNG FARMERS SAY ABOUT ON-FARM INSTRUCTION

Harold R. Matteson
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Department of Agricultural and Extension Education
College of Agricultural and Life Sciences
University of Wisconsin—Madison

John F. Thompson
Associate Professor

What should be the frequency and duration of farm visits? Should these visits be scheduled in advance? Who should identify the purpose of the visit? What is the relative importance of on-the-farm instruction?

These are some of the questions asked of students enrolled in the Wisconsin Young Farmer Program in a study recently conducted at the University of Wisconsin. The major purpose of this study was to determine why some students continue to enroll in the young farmer program and why others drop out. Only that portion of the study dealing with on-the-farm instruction will be discussed in this article.

Data were collected by a mail questionnaire which was sent to a random sample of 183 dropout and 243 continuing students. All respondents had completed one or more years of instruction. Seventy-five dropouts and 195 continuing students returned usable questionnaires.

Major Findings

Frequency and Duration of Visits

Instructors had a tendency to visit continuing students more than the dropouts. The majority of these visits were made either once a month or whenever the students requested their instructors' assistance. In general, the respondents were satisfied with the frequency of their instructors' farm visits. A significant number of those who have been visited "monthly" however would rather be visited when they requested their instructors' assistance.

Conversely, a significant number of those visited only when they invited their instructors to come out to their farm would have liked to have been visited on a monthly basis. There was generally agreement that the length of the farm visits should be one to two hours.

Scheduling and Identifying the Purpose of Farm Visits

Although a majority of the farm

visits were scheduled between one or two weeks before the visit, approximately one-eighth of the dropouts and one-fifth of the continuing students indicated that their instructors stopped in without prior notice. Two-thirds of the respondents in both groups reported that they understood the purpose of the visit before the instructor came out. Generally, respondents that did not understand the purpose of a visit before their instructors arrived on their farms also stated that their instructors dropped in without prior notice or never came to their farms.

Respondents who understood the purpose of a farm visit and were involved in the planning of subsequent visits had a tendency to rate their instructors' teaching ability higher than those who did not understand the purpose or were not involved in planning subsequent visits.

For continuing students there was a positive correlation between their understanding the purpose of a visit beforehand and the extent to which they felt the program was meeting their needs. For dropouts a positive relationship existed between their involvement in planning subsequent visits and the extent to which they felt their needs were being met.

Relative Importance of On-Farm Instruction

Although a large majority of the respondents felt that on-farm instruction was more important or was equal in importance to the classroom phase of the program, approximately one-fifth of the respondents in each group indicated that on-farm instruction was next in importance to the classroom instruction. Dropouts who emphasized on-farm instruction more than classroom instruction were more likely to indicate their instructors were appropriately selecting and organizing the content they included in their instruction and that their needs were being met by the program. Dropouts who

emphasized classroom instruction more than on-farm instruction generally have more years of education.

Both dropouts and continuing students who emphasized on-farm instruction felt their instructors were technologically up to date and generally rated the instructors' teaching ability higher than those respondents who emphasized classroom instruction. Also, the respondents who indicated they understood the purpose of a farm visit prior to the instructors' arrival on their farms and were involved in planning subsequent visits placed more importance on the farm instruction.

Conclusions and Recommendations

1. Farm visits have been and seemingly will continue to be an important part of the young farmer program. Although more respondents place greater emphasis on the on-farm instructional part of the young farmer program than those who place greater emphasis on the in-class instruction, young farmer instructors should not fail to recognize that there was a significant number of respondents in the latter group. Consequently, the researchers cannot agree with those instructors who state their students want only the on-farm instruction and have no desire to attend the in-class part of the program. If this is the situation in a specific locality, then the instructor should question the quality and adequacy of the in-class instructional program he has been providing.

2. Farm visits should be made to all students. The number of visits made to each student will vary based on the student's needs in a particular season or year. The instructors should examine their records however to determine if they are providing all students with an equal opportunity for farm visits. It is quite easy for an instructor to visit the interested

(Concluded on page 166)

(Etling — from page 160)

fed regularly replaced the traditional rooting in trash. Use of vaccines were demonstrated and encouraged.

Gradually neighbors who had used very primitive animal husbandry techniques and no veterinary care took notice. Keith recently expanded his hog facilities to double the previous area in order to meet increasing demands for breeding animals. He constructed a grinder powered by a small motor to provide ground corn. The motor also serves as the power source for an arc welder since electricity is unavailable. Keith has developed a farm shop which serves a variety of needs in his own program and for the com-

(Bettis & Hoerner — from page 162) power tool. This phase was used, as the student's safety score on the use of the power tools.

The individual boards were collected and evaluated using an evaluation sheet by an impartial person. Each student's project was evaluated as to its accuracy or exactness as outlined on the instruction plan sheet. This score was used as the performance score to measure the student's ability to effectively use the various power tools.

The Findings

The findings indicated that prepared study guides can be effectively used in teaching power tool safety. Results on the safety scores were in favor of the treatment group for six of the eight power tools. The total safety score for all power tools combined and total laboratory score, which included both safety and performance scores, was also

(Matteson & Thompson — from page 165)

and/or better students while neglecting the less interested student who in some cases have a greater need for the instruction.

3. As far as the farm visit itself is concerned, the respondents wanted to know the purpose of the visit prior to their instructors' arrival on their farms. Also they want to be involved in planning the farm visit rather than having the instructor doing this by himself.

Instructors who are seeking ways to improve their on-the-farm instruction should give some consideration to these two suggestions if they are not already being used.

munity. One of the more impressive projects to come out of this farm shop was a soybean thresher which operates from bicycle power. Another Chapare Team member who was promoting soybean production had solicited Keith's help. Team members often help each other in this manner.

When Keith leaves at the end of his term, his house, the hogs and the machinery will be left to his Bolivian counterpart, Eloy Montano. When Eloy leaves another volunteer may arrive if there is a need in that location. Otherwise one or more of the more progressive community members will inherit the Chapare Team's investment. On several occasions volunteers have de-

ided to stay in Chapare after their service. Frequently these ex-members of the Team become contact people for future Team projects and activities. Francis and Arturo Chavez are presently considering living in Chapare. They are excited by the potential of this area and feel their skills and interests could be employed in a productive life there.

Based on the findings in this experiment, study guides can be effectively used to teach the safe use of power tools. Other important values of the study guides as evaluated during this experiment:

1. The study guide can be valuable in getting the course organized and planned in a more effective learning sequence.
2. Students with individual differences can progress at their own rate while using the study guides.
3. The study guide trains the student in orderly, systematic methods of analyzing and solving a problem.
4. Definite, exact assignments can be given so the student will know exactly what is required of him.
5. The study guide can help the

4. There was no set pattern of how often farm visits should be made. What was evident, however, was that some farmers were being visited on a scheduled basis but would rather be visited upon their request. Conversely, some respondents were being visited only when they requested their instructors' assistance but would rather have been visited on a scheduled basis. Once again, instructors should be sensitive to the needs of their students and, whenever possible, allow the students to determine when visits should be made. ◆◆◆

*Results of the entire study can be obtained from the Research Division, College of Agricultural and Life Sciences, University of Wisconsin-Madison, Wisconsin, 53706.

decided to stay in Chapare after their service. Frequently these ex-members of the Team become contact people for future Team projects and activities. Francis and Arturo Chavez are presently considering living in Chapare. They are excited by the potential of this area and feel their skills and interests could be employed in a productive life there.

1. Mr. Etling received his B.S. and M.S. degrees in Agricultural Education from Kansas State University. After January, 1973 he will be a Ph.D. student at the center for International Education, University of Massachusetts, Amherst.
2. British fund raising organization for development projects.
3. The coca leaves are dried then sold to the highland Indians. When chewed cocaine, a narcotic, is released which dulls the effect of altitude, low temperatures, heavy labor and hunger, permanent conditions for many poor Bolivians.

instructor in areas of instruction in which he may not feel fully confident and give technical information which is often neglected in oral instruction.

6. The study guides can be used as written proof that safety instruction had been covered concerning each power tool. This evidence might be valuable as support for the instructor in case of legal action arising from shop accidents.
7. The students can use the prepared study guide as a reference long after the course has been completed.

We feel that the use of study guides can be an effective method or technique for teaching the safe use of power tools.

Would this teaching technique aid you in doing a more effective job of teaching power tool safety in your agricultural mechanics program? ◆◆◆

TOUR TO STUDY VOCATIONAL EDUCATION IN SCANDINAVIA

Oregon State University will conduct a Scandinavian tour to study vocational education in Norway, Sweden, Finland and Denmark, during the summer of 1973 (August 9-August 28). A brochure detailing this 21-day tour may be obtained by writing to Dr. Robert E. Andreyka, Division of Vocational Education, Oregon State University, Corvallis, Oregon 97331.

THE AGRICULTURAL EDUCATION MAGAZINE

(Gray — from page 159)

Since his retirement in 1965 and until 1971, he has continued his service to the FFA as the "lowest paid employee." He has asked for no remuneration for his efforts in organizing and putting together historical artifacts that are now in the FFA Archives.

The fact that Mr. Johnson belongs to over 30 professional, honorary and service organizations is indicative of his ability and diversity of activities. He was the first person to receive the special VIP Citation and Plaque at the 1969 National FFA Convention for his outstanding service to vocational agriculture and the FFA. Many foreign countries also have honored him with citations and honorary membership in agricultural education organizations. He was also honored by being listed in "Who's Who in American Education."

You have heard the old cliché "behind every successful man is a wonderful wife." Hester Jane Johnson has inspired Elmer to great heights in his professional work, as well as church activities, community service, and as a true friend to all.

Yes, vocational agriculture and the FFA is greater today because of Mr. E. J. Johnson. ◆◆◆

BOOK REVIEWS

SUPERVISED OCCUPATIONAL EXPERIENCE MANUAL FOR STUDENTS OF VOCATIONAL AGRICULTURE, by Merle A. Carwin. Danville, Illinois: Interstate Printers and Publishers, Inc., 239 pp. \$3.50.

Workers in vocational agricultural edu-

cation have long felt the need for a manual of condensed, assembled information for use by both the teacher and the students in planning and developing their supervised occupational experience programs. This manual entitled *Supervised Occupational Experience Manual For Students of Vocational Agriculture* has purposely been made applicable to vocational agriculture throughout the United States.

The manual is divided into four major areas of supervised occupational experiences. The basic supervised farming programs, Cooperative Occupational experience in off-farm agriculture, farm placement for supervised occupational experience, and supervised laboratory experience.

Special emphasis has been given to the student's problems and factors affecting the decisions he must reach in planning his supervised occupational experience program. A sincere effort has been made to place the contents on the student's level of thinking and work. Through the use of this manual, much time will be saved and the effectiveness of instruction increased. It will also be quite helpful to have many of the forms duplicated to work out as class jobs and to use visual aids and field trips when advantageous.

Frank R. Stover
Book Review Editor

HORTICULTURAL MACHINERY, by M. F. J. Hawker and J. F. Keenlyside. London, MacDonald Technical and Scientific, 1971, 162 pp.

The dearth of teaching materials having to do with horticultural machinery written specifically for students of ornamental horticulture makes this publication a worthy reference and possibly a text for students. Although it would be more helpful if revised for students of this country, it is relatively easy to read and the subject matter is not overly technical; the drawings are excellent.

Possibly its most appropriate use as a text would be with a class of students who had not previously had the opportunity to study small engines or agricultural machinery as a unit or course. The depth and breadth of the content presented would then fit well as a two to six week unit depending upon the teacher's use of supplemental learning activities.

The subject matter presented is arranged

in the traditional pattern — basic principles to practical applications. The authors begin with metal and tool identification; progress to the principles of the small engine, the transmission, the tractor hydraulic life and power take-off drive systems; and finally to the operating principles and uses of the following horticultural equipment: plows and cultivating equipment, fertilizer distributors and seed drills, mowing machines, sprayers, and lawn care equipment.

Robert J. Mercer
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Clemson University
Clemson, South Carolina

SOILS, by Roy L. Donahue, John C. Shickluna, and Lynec S. Robertson, Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1971, Third Edition, 488 pp.

An understanding of the basic principles and practices of soil science is essential to many agricultural occupations. This book provides a most comprehensive reference to the subject and should be very helpful to the teacher of agriculture and his students. However, only the more content oriented teachers who would perhaps spend as much as a full semester or an academic year in teaching soils separate and apart from the more functional units would wish to use this as a textbook for all students.

Subject matter is arranged systematically and sequentially from basic principles to practical applications in the traditional textbook style.

This third edition has been updated in several respects: a new chapter on soil ecology and pollution, a new soil taxonomy and world soils map, and updated information on growth and production factors such as fertilizers.

The book is divided into two parts: (1) Principles of Soil Science and Plant Growth, and (2) Applications of Soil Science to Plant Growth.

Soils is a very comprehensive reference book and should prove very helpful for both the teacher and student of agriculture.

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VOCATIONAL EDUCATION STATISTICS

Highlights of the summary report show that:

- ★ For the first time, an ethnic group count was taken. Results showed an enrollment of 47,485 American Indians; 1,849,570 Negroes; 69,879 Orientals; 636,777 Spanish Surnamed Americans.
- ★ 60.2% of the total enrollment in vocational programs reside in geographical areas of 250,000 people or more.
- ★ Of those available for job placement, 71.9% were placed in jobs in the field of their training; 17.7% were placed in unrelated jobs; and 10.4% remained unemployed.
- ★ \$2.3 billion dollars were expended at the Federal, State, and local levels. For every Federal dollar spent, \$4.92 State dollars were disbursed.
- ★ The total enrollment for vocational education increased by 19.4% over fiscal year 1970; the secondary enrollment alone increased by more than 1.3 million students.

A summary of the Annual Reports of the State Departments of Vocational Education has been published for the fiscal year 1971 by the Reports and Data Section of the Division of Vocational and Technical Education, U.S. Office of Education. The following information was gleaned from this summary.

Program	Enrollment (unduplicated)	Teachers (unduplicated)
TOTAL	10,495,411	211,550
Agriculture	845,085	12,910
Distributive Education	578,075	11,974
Health	269,546	12,613
Homemaking and Consumer	2,932,382	32,735
Home Economics (gainful)	197,422	5,370
Office	2,226,854	49,363
Technical	313,860	14,750
Trade & Industry	2,075,166	59,065
Other		6,540
Special Programs	1,087,270	30,418

JANUARY, 1973

