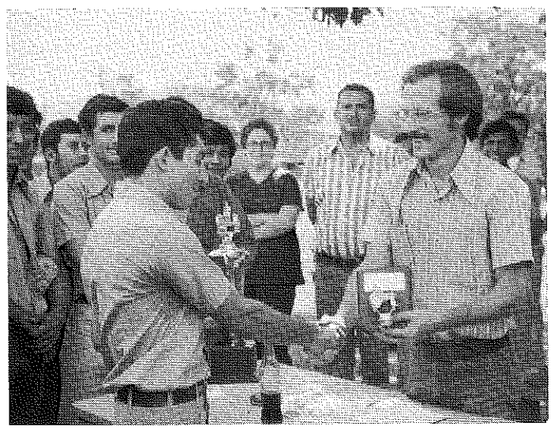
NATIONAL ASSOCIATION OF FFK — Entrance to National College of Agriculture, Suweon, Korea. Signs announce formation of Future Farmers of Korea National Association. (Photo from Lambert Schilling and Milo J. Peterson, Minnesota)

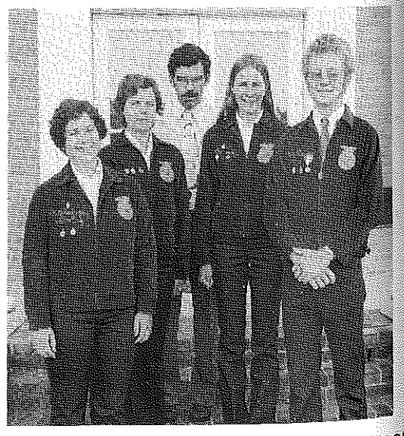
STORIES IN PICTURES

by Jasper S. Lee

SEMINAR ON INTERNATIONAL AGRICULTURAL EDUCATION — Martin McMillion, Virginia, is shown presenting a program on international agricultural education in Brazil to members of the Agricultural Education Society at Virginia Polytechnic Institute and State University. (He is also Editor of "The Agricultural Education Magazine.") (Photo by Jasper S. Lee, Virginia)

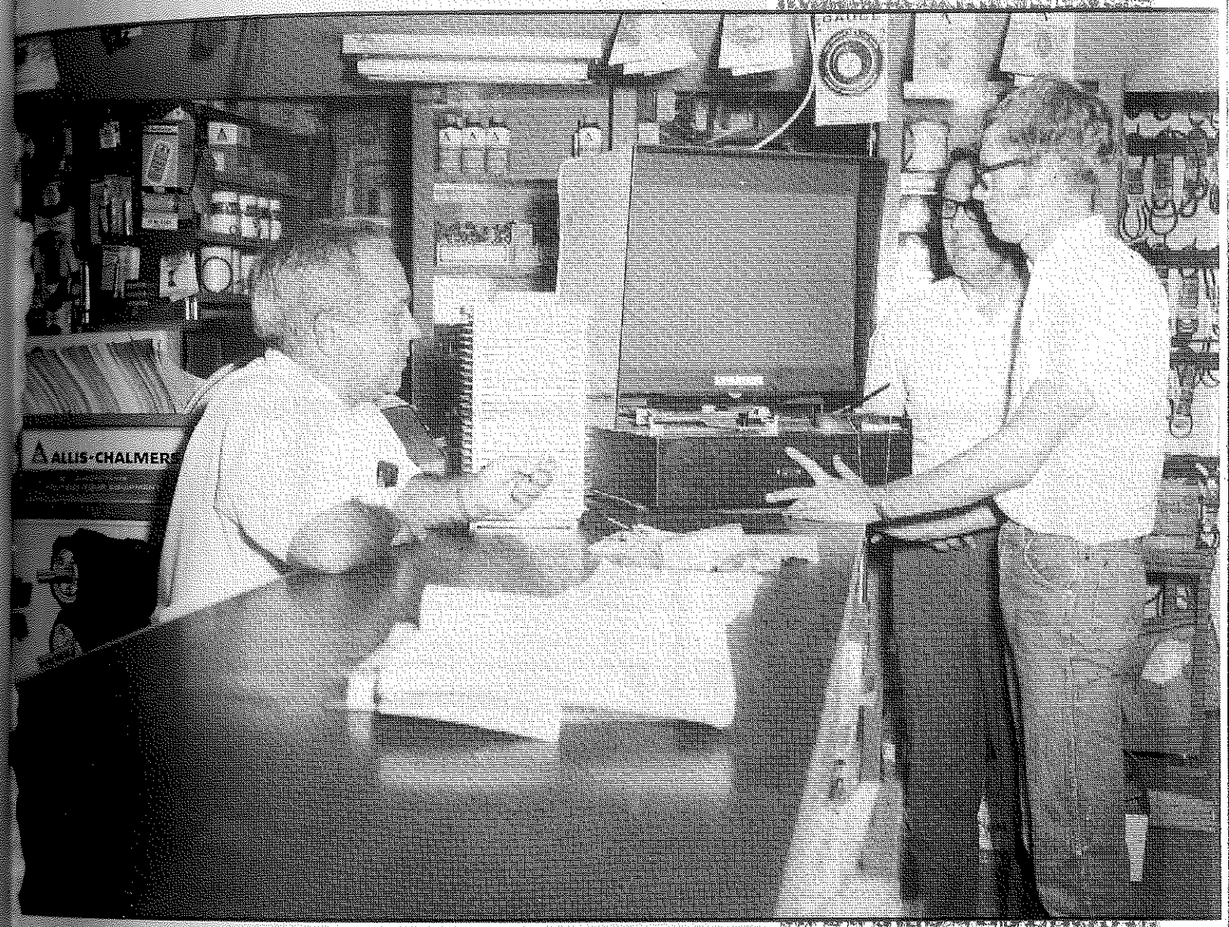


EL SALVADOR TRACTOR DRIVING CONTEST PRESENTATION — Jack Schinstock, former instructor at the National School of Agriculture in El Salvador, is shown presenting the first place trophy to Sorto Villatoro following the first Annual Tractor Driving Contest at the National School of Agriculture in El Salvador, Central America. (Photo from Jack Schinstock, Virginia Polytechnic Institute and State University)



FFA MEMBERS PARTICIPATE IN INTERNATIONAL CONTESTS — Members of the San Luis Obispo (California) FFA Dairy Cattle Judging Team are shown at the National FFA Center prior to departure for the International Dairy Cattle Judging Contest in Wales at which they won second place. The coach of the team is Les Ferriera, center. (Photo from National FFA Center)

November 1975
Vol. 48 No. 5



Theme—COOPERATIVE EDUCATION IN AGRICULTURE

AGRICULTURAL EDUCATION

EDPRESS

AGRICULTURAL EDUCATION

November 1975 Volume 48 Number 5

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Vo-Ag student Jimmy Arbuckle (right) is shown demonstrating the operation of a data machine in an agricultural machinery dealership to his teacher and the owner of Greenbrier Tractor Sales, Lewisburg, West Virginia. (Photo from Guy E. Cain, State Supervisor, West Virginia)

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

SUBSCRIPTION PRICE: $5 per year. Foreign subscriptions $6. Student subscriptions in groups (one address) $2 for October-May. Single copies and back issues 50 cents. In submitting subscriptions designate **new** or **renewal** and address including ZIP code. Send all subscriptions and requests for back issues to Harlan E. Ridenour, Business Manager AGRICULTURAL EDUCATION MAGAZINE, Box 14343, Columbus, Ohio 43214.

Second-class postage paid at Athens, Ohio.

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

GUEST EDITORIAL

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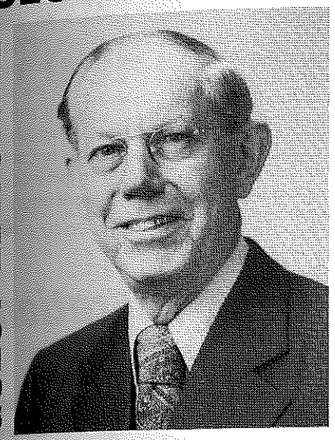


Neville Hunsicker

Understanding Cooperative Education

N. H. Hunsicker
National FFA Advisor and
Program Specialist, Agriculture/Agribusiness
U.S. Office of Education

Our reports indicate that only fifteen percent of agribusiness students participated in any kind of cooperative education program.

Cooperative Education is a term more frequently misunderstood and misinterpreted by professional agricultural educators than almost any other in the broad glossary of vocational education. This editorial is intended to help clarify some of the misunderstandings surrounding cooperative education and place this concept in its proper perspective in relation to supervised occupational experience, frequently referred to by some vocational educators as "supervised work experience."

Cooperative education, as the term is used in vocational agriculture today, is defined as occupational experience performed away from home by students for employers on a farm or in an agribusiness establishment under a signed agreement for wages or other reimbursement. The cooperative experience must be: (1) related to the student's occupational objective, (2) supervised by the teacher and employer and (3) related to the instructional program. It may be for any length of time measured in weeks, months or even years and the student must have a planned set of competencies he or she is to acquire while employed.

Many educators today seem to have the misconception that co-op education programs should be based only on a released time basis during the school day. Under such arrangements students spend a half day in school and a half day out of school. This is not the case. In fact, for many students in vocational agriculture the ideal program may be to schedule the experience program for after school, on weekends or during the summer months. No matter what the arrangement, the instructor must provide supervision and see to it that the student has a carefully planned instruction program. Remember that occupational work experience may be on the farm or in an agribusiness. Such programs may include entrepreneurship, partnership, full ownership or cooperative work experience.

The prevailing philosophy of agricultural educators has been that training for agribusiness occupations through a co-op program was essential, even though students might also have a supervised farming program or other type of agriculture production programs, such as individual projects or enterprises. Recent statistics gathered by the U.S. Office of Education, however, indicated that this tried and proven philosophy may be on the decline. In 1974, enrollment in agriculture/agribusiness totaled 664,000 students of which 330,600 were in agribusiness and 328,700 were enrolled in production agriculture. Of the agribusiness students, the report showed that only 34,000 students were enrolled in any kind of cooperative education program. This shockingly low number — less than 15% of all agribusiness students — indicates the magnitude of a problem that must be corrected by vocational agriculture teachers, teacher educators and state supervisors. We can only hope that the low number of students enrolled reflects errors in reporting rather than the failure of vocational agriculture instructors to place students for work experience in agribusiness occupations.

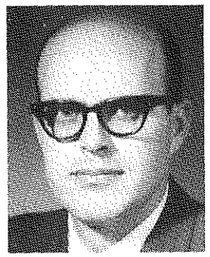
Another major misunderstanding of the co-op program is failure to recognize that cooperative education may be implemented under Part B or Part G of the Vocational Education Act. Very few vocational agriculture students are enrolled under Part G. Most students of vocational agriculture who are placed for work experience are enrolled in cooperative education under Part B. The U.S. Office of Education Form 346-3 (page 1) provides space for reporting students in both categories combined with a breakdown of those which utilize special funding under Part G on page 6.

A distinguishing characteristic of vocational education is that students learn by doing. The idea, of course, is that unless students apply instruction in a practical situation, little learning takes place. This is the theory behind school laboratories, another type of occupational experience program which is being used for younger students who have limited opportunities for ownership, partnership or cooperative programs. Today many schools have laboratory facilities for agriculture students such as greenhouses, nurseries, school farms, school forests, landscape laboratories, shops and similar facilities. Although the U.S. Office of Education has

(Concluded on next page)

school lab but there is no substitute for the knowledge and not yet accepted such work as bona fide experiences, they certainly contribute to the student's education and serve as a prerequisite for employment.

There's no doubt about it — we live in a complex technical world today. It takes skill and knowledge to deal with our everyday lives both on and off the job. That is why practical training programs are so important to young people today. We can duplicate many experiences in the skill that comes in working on the job where no artificial controls can exist. Here, it is up to the student to function on his own under the guidance of an employer and the counsel of his vocational agriculture teacher. As we look to the future in vocational agriculture education, we must insist that students who claim to have a training objective in one of the agribusiness occupations and are not self employed, participate in a cooperative work experience program during their training in vocational agriculture/agribusiness. ◆◆◆



FROM YOUR EDITOR

Martin B. McMillion

Cooperative education in agriculture has been slow to catch on. Teachers have not known what they should call such programs. Those who knew cooperative education through distributive education either thought the whole idea belonged to distributive education or perhaps were afraid that using the cooperative education model would detract in some way from the farming program.

Members of the profession even insisted earlier that farming programs were also cooperative education because several parties cooperated to provide the experience program. Some influential people in the profession advocated, several years ago, that the "cooperative" in cooperative education should mean the same as the dictionary definition. That idea failed and cooperative education is still defined much as it has always been defined.

The guest editorial by Mr. Hunsicker in this issue clarifies the meaning of cooperative education.

Cooperative Education is for Agriculture Too

Just after 1963, some teacher educators and supervisors did not want to use the term "cooperative education" for our part-time employment programs. They referred to the programs as placement-employment, work experience, and by other terms. Perhaps they thought another vocational service might try to claim a program having such a title.

The term "cooperative education" has not been used by writers in our field, even in recent years, because they knew that the term was not widely understood. That day must pass, and I hope has passed with this issue of the MAGAZINE.

Cooperative education is a part of vocational agriculture. It must be clear to all in the agricultural education profession that no particular vocational service owns the cooperative education idea, no particular agriculture option (USOE code classification) owns it, and in fact no level of education owns it.

We either use the term that all of vocational education uses and comply with the definition or risk a greater chance of misunderstanding others and being misunderstood.

—MBM

COMING ISSUES COMING ISSUES COMING ISSUES

COMING ISSUES

DECEMBER — Agricultural Mechanics

JANUARY — Two-Year Post Secondary Programs in Agriculture

FEBRUARY — Education in Agriculture — Our Past and Our Future

MARCH — Programs in Agricultural Supply and Service

APRIL — Career Exploration

MAY — In-Service Education for Agriculture Instructors

JUNE — The Summer Program

JULY — Attitudes and Values for Employment

COMING ISSUES

Cooperative Education: Problems and Remediation in the Phoenix Area

Richard C. Sawyer

Leo C. Peterson

Richard C. Sawyer, *Teacher-Coordinator* and *Leo C. Peterson*, *Vo-Ag Teacher*

Westwood High School
Mesa, Arizona

Coordinators who place students in a single business arranged to talk to the employer as a group.

With increased emphasis on career education and on-the-job training, cooperative education programs have grown by leaps and bounds. We, at Westwood High School, are not alone in the continuing development of cooperative education. Much like other programs and other schools, our whole agriculture program is geared toward final placement for on-the-job training, and we have had to deal with the many problems that face cooperative educational programs.

During the summer before their freshman year, all potential agriculture students are contacted and a program meeting their needs and desires is developed. At this time they are asked to set a tentative occupational goal. A series of courses and supervised occupational experiences are then suggested for the student to follow in meeting his occupational goal. Most of these four-year programs culminate in on-the-job training through our cooperative education program. We feel that it is just as important for a student to know how to work for someone as it is to go to college; therefore, we encourage all of our students, whether college bound or job bound, to enroll in our cooperative education program their senior year. Of course, the student's occupational goal is quite subject to change when set this early in his career, and several changes need to be made in his course selection and supervised occupational experience program.

Looking around at the other programs in the school system, we find that cooperative education programs have not only grown in size or capacity, but also in variety. Today, there is fierce competition for jobs among Agricultural Cooperative Education (ACE), Cooperative Office Education (COE), Distributive Education (DE), Home Economics Related Education (HERO), Industrial Cooperative Education (ICE), and a whole gambut of special needs education programs.

As more and more cooperative education programs enter the job placement field, we find an overlapping of placements and other problems that develop in areas of competition. As these problems began to develop in neighboring communities, (we are a suburb of Phoenix) we began to look for ways to avoid or solve such problems.

Our first step was to conduct two surveys — one of the placement opportunities in the community and one of our department's graduates. The community survey involved all of the agricultural businesses in the school district to ascertain employment trends and job placement possibilities. (See "Community Oriented Curricular Revision," Agricultural Education Magazine, July, 1972) The study of graduates involved contacting all of our former students for ideas on how to improve our program and to develop a correlation between our department's training programs and job entries of our graduates. Utilizing these two studies, we began to outline our Agricultural Cooperative Education program.

The second step was to set up an advisory committee specifically for our Agricultural Cooperative Education program. This advisory committee is composed of persons from such areas as:

—Farm Equipment and Machinery,
—Livestock,
—Field Crops/Vegetables/Fruit,
—Veterinary Med/Plant Path/Entomology,
—Nursery/Landscape,
—Floriculture/Floristry,
—Conservation/Natural Resources,
—Allied Agribusiness Areas (seed, feed, fertilizer, etc.),
—Professional Agriculture, and
—PARENTS.

Most of the advisory council members are also cooperating employers for our program. The major function of the committee is to assist the cooperative education coordinator in correlating his instruction to the needs of the students in the working world. Additional functions include assisting in providing areas for placement of students and reviewing and recommending the use of cooperative education forms and materials.

The formation of the advisory committee and its subsequent work has resulted in the development of curricular units for classroom instruction, development of a student on-the-job grading instrument, development of student placement centers, and development of guidelines concerning areas in which to place students. By having advisory committee members develop the guidelines for placement, you have a built-in defense when other coordinators try to encroach upon your placement areas.

Our third major step to protect our program involved first the other coordinators of our own school district and then all of the coordinators in the Phoenix area. Within our local district, our coordinators meet monthly on problems of mutual concern. We have developed placement guidelines among

(Concluded on page 106)

Educationally Disadvantaged in the Co-op Program

Ardell H. Passehl
Agriculture Teacher Coordinator
Prairie du Sac, Wisconsin

We have been working with the educationally disadvantaged in an Agriculture Cooperative Education program. Our main goals six years ago were helping the student graduate from high school, helping them toward their career goal, and helping them become a contributing member of our working world. Many of these students needed to become successful, so they would develop a meaningful goal for their lives.

Type of Program

Students are employed about half of the school day (10-25 hours per week) at local businesses or farms in the area. They receive one credit toward graduation for successfully completing the work portion of the program. The employer assists with the evaluation of the student's performance, but the final appraisal is left to the instructor.

Purpose

Students are given an opportunity to gain experiences in an occupation they may perceive as their career. Facilities and equipment are in many cases better and more varied than those which are found in a high school. These students are closely supervised, and their adjustment from school to work is eased by the relationship between the employer and the program coordinator.

One of the reasons the program is popular with students is that students spend only half of the day in regular classrooms. Even though we have increased the number of other alternatives (open campus, volunteer programs etc.) available to students, their interest and attraction to the co-op program does not appear to have diminished. Perhaps one of the reasons the program is working is that students who have found little success in school are experiencing success on the job.

As we look at the graduates of the program, the percent of students who are presently successfully employed is very high. Many students have continued with their supervising employer, found another job in the same general career area, found employment in a different career area, or started their own business.

For Whom Intended

We try to aim this particular program at the student who is at least 16, and either in a low IQ range, a potential drop-out, or may have other disadvantages and is interested in the agricultural program.

Students apply to the program and a screening committee composed of the principal, a guidance counselor, and the instructor have to make the decision to accept or reject the student for this program and consequently for employment.

Curriculum

The curriculum centers around the general skills needed to apply for and obtain a job and the skills, attitudes, abilities, and actions necessary to be successful at the job. Discussion in the classroom centers around attitudes of the student. As the students are placed in a variety of agricultural occupations, much of the classroom must be organized for individualized instruction. In working with these students, I feel I should not attempt to completely individualize the class, as the students must have group activity and discussions among themselves. Also, these students generally are lacking the motivation necessary to be successful in a completely individualized classroom.

Training Station

Training stations must be selected according to the needs of the student. After working in a community a short time, the instructor will become aware of the degree of cooperation of the different businesses. In some situations a training station may be valuable if it is used only every three or four years. One of the largest hurdles to be crossed each year will be trying to keep all students employed during the entire year. Guidelines are set up to have one student at one business for the entire year but changes must be made as the situation calls for them.

One of the best things that can happen to the program is for an employer to speak well of the program to other people. The program will not function without employers. Therefore, contact between the instructor and the employer must be very close.

Recently I placed several students in businesses with supervisors who were in the program several years ago. This has worked out extremely well as these supervisors are people who really believe in the program and try to help the present students as much as they possibly can.

Coordination

I think coordination visits should average about once per month per student. Some visits may be very informal and short (several minutes) and others will require much more time (several hours).

Facilities

Facilities needed for this program are as varied as the type of interest the student has and the type of business located in the community. If the businesses are utilized fully, much of the teaching of skills necessary for an occupation will be conducted at the place of employment.

Paper Work

Forms are needed mainly for evaluation and are used to keep in contact with student, parent, and employer. Short forms for the most part are the best because employers shy away from long ones.

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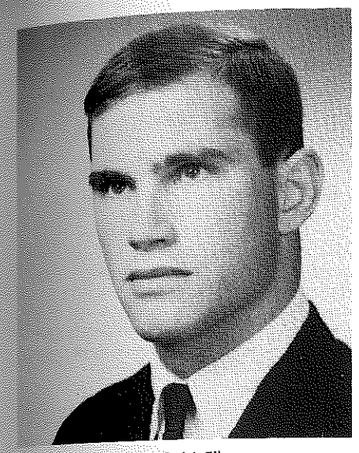

Gordon S. McElhaney

Cooperative Education in a Suburban Role

Gordon S. McElhaney
Vocational Agriculture Instructor

Thomas P. Sandham
Vocational Agriculture Instructor

North Kingstown, Rhode Island

Many vocational agriculture teachers located in suburban areas may wonder how they could institute a cooperative education program in their locality. After several attempts, Thomas Sandham and Gordon McElhaney, Vocational Agriculture instructors at North Kingstown High School in North Kingstown, Rhode Island have initiated a program this fall. Their program is entitled "Cooperative Work-Study in Agribusiness."

Identifying the Need

Located in a suburban community where production agriculture has almost diminished into extinction, a vo-ag instructor is faced with the problem of identifying the needs of the agricultural community and correlating them with those of his students. The answer to this problem is the creation of an equally balanced training and work experience program to meet the needs of both the student and the community. As the first step, we had to identify this central need in the agricultural community. The greatest need was found to be the area of agricultural mechanics.

North Kingstown, Rhode Island, located in the southern part of the State, is close to two major sod farms, nine golf courses, two major nurseries, and many landscape firms. Through a survey taken of these firms, we found that many had a demand for student labor trained in the safe operation and care of their equipment. The survey demonstrated a clear need for young people who could operate such equipment as a greens mower, a tractor and its related attachments, a chain saw, and the various hand tools frequently used on golf courses and nurseries. Most of the employers agreed that once a student could successfully operate and maintain the equipment, the skill could lead to many permanent careers in various fields of agribusiness. These job titles would include greenskeeper, nurseryman, professional landscaper, and many more. The demand for the students was so great, that even though the program did not officially start until school opened in September, several students had already been placed with firms during the summer. At the same time, the conclusion was reached that many of the students who went through school never had the opportunity to develop their potential while in school. Normally, the only chance for such a student to develop skills was through employment rather than through supervised training.

Gordon McElhaney, Vocational-Agriculture Instructor at North Kingstown High School, explaining the parts of a rototiller to student Brian Whittaker who is placed in a landscape maintenance position.

How the Program Works

With the aid of a federally funded grant, the "Cooperative Work-Study in Agribusiness" has become a reality. The actual setup of the program is composed of five phases.

Phase one — Supervised training for students in grades 10-12 in the class and shop, two hours per day, five days per week, from September through March. The training will consist of safe and efficient use of power equipment, maintenance and repair requirements including minor on the job repairs as well as major breakdown repairs. Most of the skills can be applied to different areas such as turf production, landscaping, and nursery production. In addition, the student would also be exposed to basic soil science and plant physiology to help the student understand why he is using this equipment.

Phase two — A three week pre-season training program when students are placed on the job two schools hours a day, but with no pay.

Phase three — The student would enter the actual placement program during school, receiving pay from the employer and credit for school time.

Phase four — The program would continue into the summer under periodic supervision by the vo-ag instructor. The student would continue to be paid by the employer and could earn up to one credit during the summer

(Concluded on page 106)

OCCUPATIONAL WORK EXPERIENCE

Raymond J. Ernenwein
Teacher of Agriculture
Kendall, New York

Occupational experience programs have traditionally been the backbone of vocational agriculture instruction. The application of classroom theory and the future practice of demonstrated skills has served both to develop and reinforce classroom instruction. The use of farm enterprise related projects and on-farm work experience have provided a sound foundation for establishment in farming. The practical skills, maturity, responsibility and common sense of agriculture students have long been recognized by both agricultural and nonagricultural industries. Preparation of students for farming has served as the primary goal of agriculture teachers, a goal which met the needs of rural communities, but as agriculture has changed so has the need of the agriculture student. Specialized employment areas requiring special training have emerged, challenging the teacher of agriculture to provide the same high quality of student preparation. The challenge of providing instruction geared to a wide range of occupational goals is the task of today's teacher of agriculture. To meet this challenge, supervised occupational experience programs are a valuable tool. The experience program has many advantages — including: application of classroom theory and the practice of demonstrated skills, increased teaching efficiency, effective career guidance, instructional program review and excellent public relations for the local agriculture department. To fully realize these advantages and to best serve the student, three distinct functions should be followed. First is proper planning, organization and development; second is supervision and operation; and third is evaluation and revision.

PLANNING, ORGANIZATION AND DEVELOPMENT

For experience programs to operate successfully in meeting the needs of vocational agriculture students, the teacher of agriculture must play an active role in the program's development. He must also actively involve the student, school and the community. When modifying an existing program or establishing a new one, an operating agricultural advisory board is necessary. Advisory boards provide valuable input and serve as an excellent sounding board for the programs. Their insight can assist in developing placement situations as well as program guidelines. Once guidelines and program direction are established, students may be interviewed to determine occupational goals and further instructional needs. Cooperation with other school programs is helpful. Where Industrial Cooperative programs exist, the coordinator is an excellent resource. The guidance department must also be involved to insure student scheduling and to assist with the administration of the program.

Employers should be visited and surveyed to determine the potential of the site and the interest of the employer in the program. All types of agricultural businesses should be considered. Employers should be informed of the objectives of the vocational agriculture department and the role of supervised occupational experience. If an interest exists the responsibilities of each party should be clearly defined and avenues of communication established. A file of all employers and placement situations should be established with job titles and skill requirements and other information such as name and telephone number of contact person. Time is necessary for the teacher to develop an understanding of employment needs of specialized areas, labor regulations and other factors pertaining to nonfarm experience placement. State and federal labor and education agencies are convenient resources. Only when the program has clearly defined objectives and informed participants (employers) is it time to enroll and place students.

SUPERVISION AND OPERATION

The operation of the program is student centered. The students should be interviewed. In our situation, all junior high students are contacted during the eighth grade through an agricultural career unit, to determine interest in an agricultural area. Ninth and tenth grade students are visited at home at least once each year, more if projects are available or if a need exists. Prior to their junior year or before entering a placement situation, each student is interviewed with a parent to discuss educational progress, occupational goals and future planning. Occupational experience programs are explained and the program outlined. If in the opinion of the teacher, guidance counselor, parent and student an occupational experience program would benefit the student's educational planning, he is enrolled. It must be understood that a supervised occupational placement is primarily a learning function, an extension of the classroom, with clearly defined objectives and goals. Both parent and student must understand the program and agree to meet their obligations.

A placement file is used to aid the student in site selection when necessary. The placement of students may be done by referral by the teacher. The student is interviewed by the employer alone to stimulate an actual employment situation. The interview is critiqued by the student, employer and teacher as a learning situation. Hours, job description and pay are mutually agreed to and a placement agreement is signed.

EVALUATION AND REVISION

Evaluation and supervision are continuous in the program. The teacher

(Concluded on page 118)

AN AGRI-BUSINESS CENTER

Henry C. Lunsford, Principal
Agri-Business Center
Alachua County School Board
Gainesville, Florida

Henry C. Lunsford

Can an urban community have a successful Agri-Business Center serving two, three, or more schools in the same city or county-wide for small counties? Yes, if close coordination and cooperation is effective by the center director, principals and more particularly, the guidance counselors in each school served by the center. Coordination of scheduling, busing, and student guidance by counselors and the director are absolutely essential.

Scheduling of students must be done in order for graduation credits (required academics) to be earned and for students to be selective in Agri-Business courses off campus. However, counselors, the center director, and personnel must work closely in getting Agri-Business course information or orientation, if you please, to the students about course offerings prior to registration. This will take a concerted effort as most counselors, especially in college and university communities, are oriented toward academics. Even college bound students can profit by having some vocational training in secondary schools. However, according to research by our State Department of Education, 85 jobs out of every 100 in Florida do not necessarily need college trained personnel. It is suspected that many other states are in this same situation. Industry does desire that employees have a degree of semi-skill or skilled abilities when they employ them.

Many difficulties arise because guidance counselors and educators have not had business experiences to learn career requirements in industry. Opportunities might have not existed for them to get practical experiences in free enterprises. So it is very important that counselors and especially some personnel at the center have had business experience in order to keep the center operating as a business in educating students. However, it is good to know that teacher training institutions are beginning to be more vocationally oriented in preparing counselors and teachers to be more realistic in selection of students. Teachers are better prepared in skills they teach, rather than in just methods of teaching. Both are essential and very important to the product they are turning out.

Our traditional way of getting students to vocational centers and to other vocational programs has not been as successful as desired. We must get better type students rather than just all low level achievers, low level readers, and disciplinary cases. Many problems will arise if the latter type students are placed together in one facility without mixing with better students. All students should be offered opportunities to receive good instruction in a good, practical, outdoor learning laboratory. Vocational centers offer students practical application of their classroom experiences. Most schools cannot offer this type facility for practical application of classroom studies.

In order to assist in orientation of students in the various schools, at registration in the spring the guidance counselors and center personnel should show slides of students in their classes and the laboratory of their activities and also have students talk further on these activities. In addition to this, it is desirable to have center teachers who teach a three hour period of time at the center to go to the schools for two periods and teach a basic agriculture course (preferable two semester courses with different students each semester) orienting them to all courses taught at the center. It is also desirable that these students be taught in the ninth grade, and those who desire it be permitted to come to the center either in the 10th, 11th and/or the 12th grade.

The Gainesville Agri-Business Center is located in the Eastern edge of Gainesville, which has a population of 72,000 persons. The three high schools have an enrollment of 4436 students through the 12th grade.

Leadership activities in the FFA at the center were difficult to establish as students were from three different schools. However, the attitude and leadership of the teachers can make the difference. Also, they could distribute the activities, thereby causing no teacher a hardship, but a pleasure in working with young people in developing confidence and leadership. A very successful FFA Chapter could be in existence.

This past year was somewhat successful in two areas. The Diversified Forestry and Wildlife classes won 1st in their scrap book and runner-up in the State Forestry Contest sponsored by the St. Regis Paper Company. Charles Floyd, an Agri-Business Co-op class member, was successful in receiving the Area Star Agri-Business award sponsored by the Agri-Business Institute of Florida.

The FFA dues of those who attend the three-period block of time at the center are paid by the center from projects such as the sale of vegetables and ornamental plants.

I would be remiss if some of the pitfalls were not mentioned in this article.

(Concluded on next page)

CONTINUED

AN AGRI-BUSINESS CENTER

Failure of an Agri-Business Center could result from some or all of the following conditions. These are not listed in order of importance, but for information of interested persons.

Contributors to Failure of a Vocational Center

1. Lack of effective orientation in all schools to all students by counselors and center personnel
2. Counselors selecting or directing majority low achievers and discipline students to the center
3. A weak and non-aggressive administrator as director of a center
4. Poor programs and instructions by teachers
5. Using the center for a "dumping ground" for both personnel and students
6. Lack of sufficient support from a county superintendent and his staff
7. Poor financial support.

An Agri-Business Center holds unlimited learning opportunities for students under proper conditions. ◆◆◆

CONTINUED

CO-OP ED: PROBLEMS AND REMEDIATION . . .

ourselves, and our coordinator for vocational education oversees the implementation of the plan.

At the area level, we have included the community of Phoenix and nine of its suburbs with direction from the State Department of Education. The Valley Work Education Council has been formed to encompass all facts of work education — work exposure, work experience, and cooperative education — for the purpose of preventing problems and promoting work education through a united effort of all disciplines.

Each member school district is allowed to have one coordinator from each of its disciplines to sit on the council; a district administrator also sits on the council as an ex-officio member. The council limits its activities to interdisciplinary problems with a set of guidelines for getting these problems before the council. The council has also developed a central clearinghouse for job placements, staffed by a secretary paid through a State education grant to one of the local school districts, and a specialized advisory board of major businessmen.

The Valley Work Education Advisory Board meets twice yearly to share ideas and information about employment trends, to discuss opportunities for placing students, and to coordinate the mechanics of student placement. In this light, a list of those businesses placing students from more than one discipline was developed and teams of coordinators were set up to visit these businesses. This procedure has eliminated the countless calls by numerous coordinators on the placement personnel of the "big" businesses of the area.

When the coordinators visit these "big" businesses, they explain the nature of cooperative education and try to solicit jobs in all disciplinary areas. They ask for a specific number of jobs in each area and set up the dates when interviews are to be conducted. The chairman of the coordinator's team then calls in the number of jobs and the interview dates to the central clearinghouse, specifying the discipline placements desired by the company. It then becomes the duty of each coordinator to call the clearinghouse to find out the job possibilities with the "big" businesses. All other placements with those businesses employing only one discipline continue as normal, however, if a coordinator has extra placement opportunities or is in need of a specific type of placement station, he may call the clearinghouse for assistance.

By the use of community surveys, graduate surveys, a local advisory committee, working with the other local coordinators, and participating in the Valley Work Education Council, we have been able to forsee and ward off many of the conflicts and problems with which our fellow coordinators throughout the State and other areas of the country have been faced. ◆◆◆

CONTINUED

COOPERATIVE EDUCATION IN A SUBURBAN . . .

based on hours of training, demonstration of a skill and number of hours in actual work experience. In total, a student could earn up to three credits in one calendar year with school training and work experience.

Phase five — The student would reenter the classroom-shop situation in November of the following year where he would undergo further training of skills in which he discovered that he was weak. An example of this might be complete reconditioning of a mower. Thus the program as set up in North Kingstown would be a continuous process through secondary education for at least two years.

Facilities and Equipment

In order to make the program become a reality, more facilities and equipment were needed at North Kingstown. Through the aid of the federal grant, we were able to obtain a small building which will be used as a repair and maintenance shop. Also, several types of modern turf and nursery equipment were purchased. These include a 19-horsepower tractor with a front-end loader, rototiller, rotary and gang mowers, thatchers, and top dressers used on present-day golf courses.

As many communities change from production agriculture to agribusiness related enterprises, there is still an opportunity for cooperative education in many specialized fields. A student achieves success through learning and putting his learning into use. The identification of the two needs—both the community and the student's—is the first and perhaps the most important step in preparing a cooperative education program. ◆◆◆

Cooperative Occupational Education in Small Schools

*J. T. Horner, D. G. Zikmund and R. L. Douglass**

RATIONALE

Unique problems are created by sparsity of population as well as by traditions in rural communities, where there is a high proportion of small schools. Specific problems confronting *students* in small schools include the following: (1) Decreasing labor requirements on the farm means that many youth must leave their home towns for employment. (2) Very small communities find it difficult to attract industry, causing jobs to be limited. (3) Lack of career information and vocational education reduces job mobility. (4) Low occupational and educational goals result in higher dropout rates and low college attendance and (5) Students have more trouble entering and advancing in higher level jobs.

Typically, problems of *small schools* include the following: (1) There is insufficient financing to provide the desired breadth of curricular offerings. (2) Qualified teachers are in short supply. (3) Many buildings are deficient, and much equipment is unsatisfactory.

In light of these considerations, Cooperative Occupational Education (the utilization of school and community resources for the purpose of preparing students for employment) is viewed as a viable option whereby the small school can extend the range of opportunities for occupational preparation.

IMPLEMENTATION

The most important step is the decision to make Cooperative Occupational Education a part of the school curriculum.

Other Steps in Establishing Cooperative Occupational Education are:

1. Install the program.
   a. Decide with the aid of a steering committee upon the type(s) of program(s) to be installed.
   b. Devise a tentative written plan, including philosophy, objectives, policy formation, control procedures, responsibilities of personnel, organizational structure and general supervision, broad advisory functions, and estimated total cost and budget.
   c. Describe characteristics of student groups to be served.
   d. Identify occupations for which training will be given.
   e. Provide additional space, if necessary.
   f. Plan the appointment of an advisory committee by the board of education.
   g. Continually publicize the progress during the program development stage.
   h. Inform the faculty of the objectives of the program and proposed operational procedures.
   i. Inform parents.
2. Select and hire a teacher-coordinator.
   a. Determine the number of part-time and/or full-time teacher-coordinators required.
   b. Inform the teacher education institutions and the state department of education of staffing needs.
   c. Consider state requirements and essential personal characteristics when selecting a teacher-coordinator.
3. Through the counseling services, identify and enroll students who would benefit from and be interested in the program.

Since well-planned patterns of scheduling employment are crucial in areas with limited placement opportunities (small communities) and are also basic to organizing a Cooperative Occupational Education program, the following options are suggested:

1. Traditional: Average of 15 hours per week involving daily employment for the regular school year.
2. Variations:
   a. One semester of daily part-time employment.
   b. Summer full-time employment.
   c. Scheduled employment during peak economic activity in a given locality (e.g., to coincide with tourist season, harvesting, holidays).
   d. Two or three days of part-time employment.
   e. Placement of students in employment when they are ready or when jobs become available (each student, therefore, would have a different schedule for employment).
   f. Employment in neighboring communities.
   g. Replacement of students who withdraw from jobs when objectives have been achieved.

In those programs which rely on summer employment for student-learners it may be feasible to enroll them in the regular school program during the school year and provide a Cooperative Occupational Education program during the summer months. A teacher-coordinator could be employed during the summer to provide systematic related instruction and also to coordinate and supervise the on-the-job training phase.

To provide on-the-job experiences for as many students as possible, alternating plans are encouraged. Alternating plans

(Concluded on next page)

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This article is published with the approval of the Director as one of a Journal Series, Nebraska Agricultural Experiment Station. It is based on "Guidelines" prepared pursuant to a contract from the U.S. Office of Education on which the authors collaborated.

CONTINUED CO-OP EDUC . . . IN SMALL SCHOOLS

allow for a greater degree of flexibility and provide situations where more than one student-learner can be employed in the same training station (place of employment). Some possibilities are:

1. One student-learner might work in the morning and one student-learner might work in the afternoon.
2. On a rotating basis, one student-learner might work in the business for one week while his fellow student-learner is in the related classroom in school (this system could be operated on a daily, weekly, bi-weekly, monthly, quarterly, or other basis).

If a particular school is located within a relatively short distance of several small communities, students might be placed for their occupational experience in businesses in each community.

A small community that affords extremely limited training possibilities could transport students to a larger city for on-the-job training. A program such as this might be carried out most easily during summer months or during periods of peak employment since these are times when employers are seeking additional part-time help. A plan of this type would mean employing the teacher- coordinator during the summer months and ensuring that transportation for student-learners is available.

Schools with limited classroom facilities might consider conducting related instruction in a local business instead of at school. Especially if students are transported to and from work, it might be best to hold the related classroom instruction in a business at or near the site of their employment. Some schools provide instruction on the buses which transport students.

Small high schools located in rural areas should not overlook farms as possible training stations. Usually, a large number of farms surround a rural community; thus, students interested in acquiring knowledge and skills in agriculture might be placed on a farm for on-the-job experiences.

There are also possibilities for employing student-learners within a school system to provide on-the-job experiences as teacher aides, janitors, or groundskeepers if such employment would contribute to the students' career development needs.

As another alternative, a school (or the students) could own and operate its own business.

STAFFING

Staffing in a small school is one of the most important factors to consider. An "uncommon person" is needed to fulfill the role of teacher-coordinator. This individual must command the respect not only of his students but also of businessmen. In addition to having occupational experience, he must be an effective teacher. Frequently, at least in Nebraska we find the Vocational Agriculture Instructor to be this type of teacher. ◆◆◆

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CONTINUED EDUCATIONALLY DISADVANTAGED . . .

Problems and Solutions

Students enter the program for many reasons and have varied types of problems. The instructor must make every attempt to get to know each student as well as possible. It will help in understanding the student if the instructor has several opportunities to talk with the student's parents. The effort between the instructor and the administration of the school should be coordinated closely.

We started this program on an experimental basis six years ago, and I feel the fact that it is still in existence shows the program is of value. Many comments from parents, students, and other community people have indicated that many of the students of the program received their high school diploma partially because of the program. Also I feel that this program has been a major factor in the realization of employment successes of some of these students. ◆◆◆

Teachers Work in Agribusiness

Lloyd H. Blanton
Teacher Education
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Cooperation is the heart of a program which brings together teachers of vocational agriculture, agribusiness management and teacher education. Teachers enroll for a three credit summer school course, Ag Ed 737, Internship: Agribusiness. Four days are spent on campus at Clemson University, and teachers study principles of agribusiness operations. Each teacher plans his own internship with assistance from the manager of a local firm. Following 90 to 120 hours of scheduled intern experience, a written report is submitted to complete the course.

The cooperative agreement commits money, personnel and facilities to communicate four basic concepts to teachers of vocational agriculture:

(1) Agricultural supply and service businesses are major factors in America's enviable position as world leader in food production and distribution.
(2) Manpower requirements of the agricultural supply and service industry are great.
(3) Competencies of agricultural supply and service personnel are important to production agriculture; development of competencies must not be left to chance or inferior education.
(4) Careers in agricultural supply and service may be rewarding in terms of earnings, professional growth, personal contacts, and life style.

Supervised experience has been a basic component of vocational agriculture from its inception in 1917. In 1939, cooperative education was advocated in a departmental monograph.[1] These two concepts, supervised experience and cooperative education, are now succeeding in a partnership to solve new problems.

Following the National Vocational Education Act of 1963, teachers have experienced problems in broadening curricula beyond production agriculture. Teachers are comfortable in production agriculture curricula due to first-hand experiences and familiarity with duties and rewards of farm life.

Many believe that it is the affective domain, shaped by the farm background, and not the cognitive or psychomotor domain, which has provided teachers with the renowned dedication to excel as teachers in production agriculture. Such has not been the case for our teachers when they modify programs to include off-farm agriculture.

Many *teachers have a prejudice to overcome before unrestrained commitment to curricula for agriculture sales and service.* Unfortunately, many people in agriculture have an image of salesmen, clerks, and bankers which is best characterized by stories of the traveling salesman and the mortgage holder preying on the poor farm family. Of course, this kind of image must be replaced before teachers can guide students toward careers in agricultural supply and service.

The internship reported in this article differs from that

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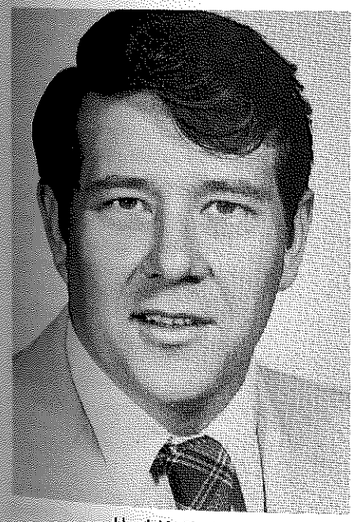

Lloyd H. Blanton

LEARNING THE VALUE OF HORSE RATIONS. Advisor Sammy White (R) of Olanta FFA Chapter and Sumter FCX Manager Reggie Spivey discuss livestock feeds in the warehouse.

of Smith in an earlier issue of *The Agricultural Education Magazine*.[2] The fine LSU internship is designed for pre-service education for full-time students. Clemson's internship in agribusiness is in-service education of full-time teachers.

Internships for full-time teachers present unique problems:

(1) Incentive to add activities to a crowded calendar
(2) Selection of an exemplary business for the internship center
(3) A mechanism to supervise and project experiences of the internship into the agriculture curriculum

Internship in Agribusiness

Among characteristics selected for the Clemson Internship in Agribusiness, the following are important[3]:

(1) The intern is placed in a firm selected by the college for its progressive method of operation.
(2) The internship is a full-time resident experience designed to provide a complete experience.
(3) The intern is supervised by a person selected for his ability in his profession and for his competence as a trainer.
(4) The intern is usually paid a salary because he is productive, but his pay is at a reduced rate because he is a trainee and not all of his time is fully productive.

The ultimate goal of the internship is to increase the number of vocational programs emphasizing agricultural supply and services and to *improve the quality of instruction.* Therefore, objectives of the internship are to:

(1) Give the teacher a realistic, optimistic attitude about opportunities in agricultural supply and service.
(2) Provide the teacher with data to be incorporated into the vocational agriculture curriculum.
(3) Allow the teacher to explore, practice, and develop competencies typical of occupations in supply and service.
(4) Encourage the teacher to plan means for incorporating results of the internship into the curriculum.

Teachers earned three hours of graduate credit and approximately $200.00 to cover per diem and travel expenses to the internship station. Their responsibilities were to 1) schedule 90-120 hours of full business-day experiences over a 90-day period, 2) perform selected jobs as employee-trainees, and 3) gather curriculum materials. Experiences included jobs ranging from stocking shelves, aiding customer selection of chemicals, sampling grain for moisture content, calculating bills of materials, reviewing credit applications, and studying grain and livestock markets.

FCX, a farmer-owned cooperative operating in North and South Carolina, is one of the cooperating partners for the internship. The philosophy of the company is represented by their written statement: "Cooperatives are organizations through which people work together to accomplish certain purposes. The employer in a cooperative works not for a small group of people or for one person, but for all the people who use it. *The patron is the owner.*"[4]

FCX serves interests of the vocational agriculture program in the cooperative arrangement. All expenses for teacher stipends, other cash outlays, and curriculum materials are paid by FCX. Management takes the long sighted view that the organization can best serve its customers with qualified, dedicated employees. Management looks to a day of hiring employees from vocational programs which teach prospective employees to 1) understand the problems of the farmer, 2) communicate knowledgeably with the farmer-customer, and 3) practice business procedures to ensure efficiency and honesty.

Agricultural supply and service businesses chosen for internship centers are equipped to serve as manager-trainee learning stations. The selected stations are efficient, multi-service training stations accustomed to inexperienced trainees. Therefore, teacher interns are matched to a proven system of rotation through a series of jobs, representative of service, clerical, sales, and managerial positions.

Teachers are shown operating statements, credit-extension procedures, purchasing and marketing policies. For example, teachers were pleasantly surprised that supply and service businesses actually operate on a close margin of profit and still maintain quality service and employee benefits.

The University role was one of coordination, internship station approval, development of objectives, and supervision of evaluation efforts.

Summary

The name, *cooperative education,* reflects the necessary cooperative relationship established between the institution and the agency providing the work situation.[5] The cooperative arrangement proved rewarding.

Teachers, the University, the State Department of Education, and agribusiness leaders experienced an enthusiastic understanding of the interrelationship of agricultural supply and service, production agriculture, vocational agriculture, and teacher education. Channels of communication, respect, and assistance are operating. A new partnership is evident, and participating teachers have a warm enthusism for guiding students toward careers in agribusiness.

It is no accident that in fiscal 1975, U.S. agriculture was able to provide for its own needs and export commodities totaling $21.7 billion.[6] Production agriculture has been doing its job — a job increasingly dependent upon off-farm supplies and services.

South Carolina teachers experiencing the internship have a new appreciation for efficient agricultural supply and service in the smoothly moving agriculture industry. After first-hand experiences in an agricultural supply and service business, *the teacher shows greater enthusiasm and competence for guiding students into careers in agribusiness.* ◆◆

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Cooperative Agricultural Education in an Area Vo-Tech School

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The continuing growth of agriculture and the growth of agriculture-related businesses has created a need for young men and women who are trained in both the agriculture and business fields. The Agri-Business Technology program, offered at Lake Area Vocational-Technical School in Watertown, South Dakota, is a 20-month, post-secondary program which prepares students for employment in agricultural business or industry. Classes provide instruction in the technical agricultural science (soils, fertilizers, seeds, chemicals, livestock, marketing, etc.) as well as training in modern business management. Also included are courses in sales, business math and merchandising, so necessary for people working in the business world.

Students who plan to enter this field of training should be prepared to move toward the more technical levels of agribusiness and enter key positions in feed, seed, fertilizer, agricultural chemicals, livestock marketing and other agricultural supply businesss.

The Agri-Business Technology curriculum consists of six months of classroom instruction (September through February), five months of supervised occupational experience (March through July), an additional six months of classroom instruction (September through February), and finally, three months of supervised occupational experience (March through May). The supervised occupational experiencce is received at an approved training center cooperatively selected by the student and the faculty coordinator. Students are under the immediate supervision of the employer, are paid normal wages of beginning employees and are periodically visited and evaluated by the instructors.

Faculty supervision cannot be taken lightly. During the spring and summer of 1975, the Agri-Business Technology staff traveled approximately 25,000 miles. The average first-year Agri-Business student was visited 10 times during this period with each visitation lasting about 2½ hours. During a visitation, the instructor may review the blending of fertilizers, with the student, using the equipment available at the training site. This allows for true individualized instruction with the equipment and facilities furnished by the business, the cost of which would be prohibitive in any educational institution.

During the first visitation, a contract is signed by the cooperating employer, the student, and a school representative. This contract sets down the responsibilities of the employer, the student, and the school. Also, the cooperating employer completes a detailed Job Sheet, checking off the specific jobs that he feels his business can offer to the student. After the supervised occupational experience is completed, the employer and the student fill out another Job Sheet, this time checking off those jobs actually completed.

It has been the objective of the Agri-Business Technology staff to place the student in cooperating businesses which offer the student exposure to a number of future job opportunities. An example of this would be a business which sells feed, buys and sells grain, sells and applies fertilizers and agricultural chemicals, and has a farm store. This business could offer exposure in several areas which would aid the student in determining his primary area of interest.

A cooperating business may be able to expose the student to a variety of jobs but if the student becomes pigeonholed in one area, the training site is undesirable and it may be necessary to review the objectives with the employer and, occasionally, the student may have to be removed and placed in another business.

It is desirable, from our experience, that the student be treated like any of the firm's employees. We would expect the student to sweep floors and other odd jobs. If they are to fully understand the workings of the business, they should experience as much of it as possible. They should spend time with the manager, the bookkeeper, the salesman, the department managers, and all the way down the line to the maintenance of the equipment. It is important that they understand the responsibilities of each position before they progress.

When the student goes out in March, he is provided with a packet of assignments that are prepared by the Agri-Business staff to progress with him and his particular business. It is important that the student send an assignment and a report of his activities and progress to the school each week. It is on the basis of his assignments, the employer's monthly evaluation, and the Agri-Business instructor's visitation reports that the student is assigned a grade.

Presently, the Agri-Business Technology program receives more requests for trainees than we have students. Businesses, utilized in the past, return to us each year for a trainee. Each year, new businesses must be evaluated and recommended or rejected as supervised occupational experiencc stations. Seldom will more than two or three new businesses be recommended because we have businesses which have been utilized in the past that fully understand the objectives of the program and offer the student an excellent training atmosphere.

In the Agri-Business Technology program, 40 percent of the curriculum is supervised occupational experience.

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Training for Occupations in the Horse Industry

Jack McElroy, Trade and Industrial Education
University of Kentucky
and
Edward Brice, Instructor of the Equine Program
Central Kentucky Vocational-Technical School

WANTED: Experienced Young Horseman to work in stable and assist trainer with show horses. Steady year-round work. Good wages

In bluegrass country this ad is not at all unusual. The horse industry is the third largest industry in Kentucky and is experiencing tremendous growth. Nationally, the American Horse Council estimates there are 200,000 full-time employees working with 8,000,000 horses in the industry. Employers have a real need for individuals with knowledge of the different breeds of horses, of feeding, grooming, and exercising, and of the care of broodmares, stallions, and yearlings. A recent study by the Kentucky Department of Economic Security verified the need for qualified workers in the industry which led to the development of KEEP.[1]

KEEP is the Kentucky Equine Educational Program. A non-baccalaureate degree, vocational program offering training for approximately 20 different occupations in the horse industry. This unique program was initiated in a cooperative effort by the Kentucky Bureau of Vocational Education in the State Department, the State Department of Economic Security, the Kentucky Department of Parks, the Thoroughbred Breeders of Kentucky, the Farm Managers Club, the American Saddlehorse Breeders Association, the American Horse Council, and the Kentucky Division of the Horsemen's Benevolent and Protective Association. The cooperative involvement of a large portion of the industry and an active advisory committee has provided KEEP with technical and professional advice and strong support from horsemen across the country.

The program is designed to meet the employment needs of the equine industry. Each individual entering the program receives assistance in the training areas through small group and individualized instruction. An open-entry, open-exit philosophy prevails whereby individuals may progress at their own rate of learning to obtain realistic goals. The 20 different occupational areas provide a wide range of positions from farm hand to assistant to the farm manager. Each individual has a program to suit his or her interests and abilities and the program is designed to take a person with little or no equine knowledge and bring him to an employable level in an occupation of his choice. This is accomplished in two phases. Phase I is a foundation program designed to establish a broad basic knowledge of the theory and skills involved in working with horses and making a more definite choice in an Equine Occupational Area. Phase II consists of field training in the occupational area.

All students complete the foundation program, Phase I. In Phase II students progress as their interests and abilities permit. The skills necessary for the lowest level jobs must be completed before progressing to those requiring more training (see chart). Phase I does not exceed 20 weeks of training and Phase II consists of a maximum of 30 weeks of practical supervised work ex-

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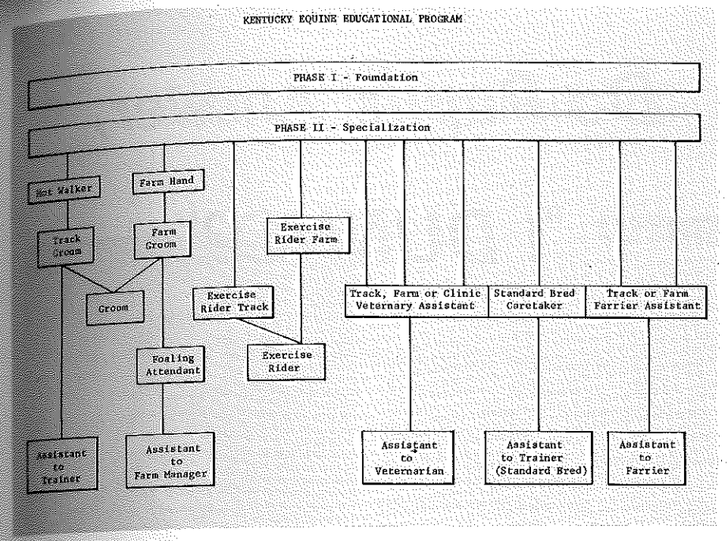
Student jogging a standard bred trotter. This involves a four mile ride each morning.

[1]KEEP, The Kentucky Equine Education Program, A Program of Central Kentucky State Vocational-Technical School, Kentucky State Department of Education, Bureau of Vocational Education.



perience on an individual or small group basis. The student receives a diploma for the highest occupational level completed.

The beauty of this program is its success. Success through the close cooperation of Vocational Education, the equine industry, the State and local community. A program of this nature necessitates rather elaborate facilities not ordinarily available. The facilities for the training program occupies nearly 28 acres and includes an office, two classrooms, three barns, several paddocks and a one-half mile training track. The Kentucky Department of Parks provides the training facility for the program on the grounds of the beautiful new Kentucky State Horse Park; students also have access to the remaining 935 acres in the park for training purposes. The facilities are located in the heart of the Central Kentucky horse farm area and provide ideal access to horse farms in the area.

The program started in 1972 as an experimental program for unemployed and underemployed adults. Today the program is operated as a regular public vocational education program open to students who range in age from high school students to those 16 years of age and older who have left school. And horse*man* is a misnomer as women are enjoying increasing success in this industry.

At present there are 92 students enrolled; 20 secondary students, 20 post-secondary students, and 52 students from the horse industry enrolled in the evening in special interest courses to upgrade their training. Of the 92 students, 40 percent are male and 60 percent are female. Their average age is 22 and their future looks bright. Ninety percent of the trainees have been placed at starting salaries ranging from $75 to $175 a week. The operators of the program attribute its success to two facts: 1) a response to an identified need for trained personnel, and 2) the cooperative and effective use of resources which are available through vocational education, the equine industry, the community, and the State of Kentucky. ◆◆◆

CONTINUED CO-OP AG ED IN AN AREA VO-TECH SCHOOL

This makes the selection of cooperating business an extremely important responsibility of the Agri-Business Technology staff.

While cooperating businesses are primarily relied upon to provide training sites for supervised occupational experience, they are also utilized during the classroom instruction to provide up-to-date instructional materials. Ten businesses and the second-year Agri-Business classes jointly sponsor "Farm Facts Day," a day of speakers talking on current topics to area farmers. A similar event, "Animal Health Day," is sponsored by major animal health companies and the Agri-Business class. These events are planned, organized and carried out in conjunction with the merchandising and animal health courses right down to cooking the noon meal, invitations, arranging for speakers and the related use of the news media.

Terra-Western Corporation in Madison, South Dakota, provides its equipment and facilities to the first-year Agri-Business class as an agricultural chemical and fertilizer laboratory for one day in March. During this day the students blend dry fertilizers, make liquid fertilizer, calibrate sprayers, transfer anhydrous ammonia, work on transfer pumps and, in general, do all the operations available at this cooperating business.

Cooperating employers are an essential part of the Agri-Business Technology program in Watertown, South Dakota, and we are grateful and appreciative of their contributions. They serve on our advisory council and last year provided eleven scholarships, totaling $3,300.00, to students in the Agri-Business Technology program.

The emphasis of the Agri-Business Technology program is to place people in the agricultural industry. Many industrial corporations and agricultural manufacturing companies are continually looking for good salesmen to sell their products or enter their management training programs. Grain elevators, feed stores, farm retail stores, fertilizer companies, wholesale firms and manufacturing firms are all interested in trained technicians. In five years, only two graduates accepted a job outside of South Dakota. Jobs need not be in large cities since many small communities have demand for young people educated in the broad field of agribusiness.

A promising future of steady employment, satisfaction and advancement awaits the young person who wishes to further his ambitions in agriculture. The opportunity to obtain both academic and practical experience allows students through supervised occupational experience to become aware of a most essential industry, agriculture. We hope a program such as Agri-Business Technology would stimulate young people who are interested in agriculture to discover their occupational goals and insure satisfying and successful employment. ◆◆◆

Joe E. Sabol

Do Pupils Answer, "I DUNNO?"

Joe E. Sabol
Teacher Education
Cal Poly, San Luis Obispo

What is your response to "I dunno," when you ask one of your students a good question? Do you skip over him and ask another student? Do you tell him the answer? Do you get this response from this student quite frequently? Do you ask him an easier question such that the answers leads him towards the answer you wanted?

Questions are used by all vocational agriculture teachers and because you use this very effective technique rather frequently perhaps we can refresh your memory and challenge you to perfect this skill.

You use questions for a variety of reasons:

1. TO IMPROVE student interest; your students are more involved when questions are allowed to flow in both directions. The question, "What shall we plant on this bank?" invites student involvement and almost a commitment to help plant it!

2. TO STIMULATE thinking; your students are more alert when they are held responsible for learning all period, every period. The "why" questions often do a better job than the "what" questions. "Why have gooseneck trailers become so popular with cattlemen?" This question should cause more thinking than a simple recall question.

3. TO KEEP your instruction to the class level; student feedback, responding to your questions and asking their own, will give you direct indication to go on, or perhaps simplify or expand the point in question. If you get "I dunno" from your better students, what have you taught the rest?

4. TO REVEAL your students' attitudes; their responses to questions often illustrates their enthusiasm for the subject or for your total program. "What can our chapter do for the member whose home just burned down?" The responses to this question should tell you a lot about attitudes.

5. TO PERMIT student contributions; quite frequently your students add significantly to your lesson with their first hand experiences. These may never come to light without your probing question, "What causes tail biting among swine?" Student contributions and responses must receive careful attention by you! You must evaluate them, praise him and/or carefully lead him and the class to the correct or more desirable answer. This is a critical point in establishing a free flow of questions and answers.

6. TO PROVIDE emphasis and reinforcement; frequent recall reinforces facts and concepts and you usually do this at the end of the lesson. Should review questions come throughout the lesson, as well as the end? . .

7. TO CHECK on the effectiveness of your instruction. Remember that saying . . . If the student hasn't learned, the teacher hasn't taught?

8. TO CORRECT misbehavior; questions asked by students when they are out of line may get better results than direct orders. Certainly "John, will you sit down?" is a softer approach than "John, sit down!" The command puts John in a corner while the question allows him to make a decision. Both approaches have their place and only you can size up the situation and evaluate the results.

Proper phrasing of questions is an important skill to master. Poorly worded questions tend to confuse and discourage active participation. It is essential that as you ask questions you get eye contact with your students. The confusion on their faces will help you restate or clarify the question even before they can answer. Not only should we practice phrasing questions but continually attempt to increase the critical thinking of the class. Most questions we ask tend to be rather narrow, where a specific reproduction of fact is required. These require the lowest levels of thinking, calling for rote-memory or recall. These questions are essential for warm up and for students who are not capable of very thoughtful answers yet and need the approval of teacher and peers.

Listed below are some questions which illustrate some of these points:

1. "What is the omasum and where is it found?" This is a compound question and might be better broken into two questions. It requires a rather low level recall answer.

2. "What did Luther Burbank do?" This is a rather vague question which might be correctly answered, "He ate breakfast every morning."

3. "Oxytocin, which comes from just under the brain, is released into the blood stream and travels to the udder and allows letdown after how many seconds after she has been primed?" Wow! This question comes as a whiplash after a rather complex statement.

4. "Does photosynthesis occur on cloudy days?" This is a rather low level question requiring only a yes or no answer.

(Concluded on page 118)

Leader in Agricultural Education:

LUTHER LALUM

by *Vernon D. Luft**

It was a fortunate day for the community of Kalispell, Montana when Luther Lalum, better known as Luke, returned to his home community to teach vocational agriculture. Luke joined his former vocational agriculture instructor Mr. Henry Robinson to serve in a two-man department.

In 1912, Luke was born in Maddock, North Dakota where he also attended elementary schools. He moved with his family to Kalispell, Montana just prior to beginning his high school education. Luke attended high school in Kalispell where he was an outstanding FFA member and chapter officer. This was only the beginning of his long and rewarding career in the field of agricultural education.

Upon completion of his high school education, Luther Lalum joined the United States Army Air Corp. He served with the USAAC from January 1942 to October 1945, and was an overseas veteran of World War II.

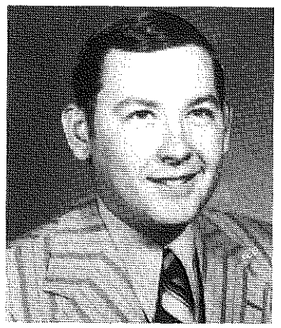
Luke attended Montana State University and played football on a scholarship. He graduated with a Bachelor of Science Degree in Agricultural Education in 1950. He also did some undergraduate work at the University of Minnesota. Lalum later acquired his Master of Science Degree in Agricultural Education at Montana State University in 1964.

Luke and his wife Marilyn have two children. Mary Lynn, now Mrs. Jay Baker, is a senior at Whitworth College in Spokane, Washington majoring in Elementary Education. Their son, Mark, is now a junior at Montana State University, majoring in Agricultural Education and Agricultural Business. He became known in the State of Montana while serving as the treasurer for the Montana Association of FFA.

Luke began his teaching experience at Fairview High School in the fall of 1950. He taught there for a period of two years. In July 1952, Luke accepted a teaching position in the Flathead High School in Kalispell, where he has completed his 23rd year at Kalispell and his 25th year of teaching. Luke still teaches with his former Vocational Agricultural Instructor Mr. Henry Robinson and with Steve Wilcox.

Throughout his years in teaching, Luther Lalum's students have achieved many high goals. The Flathead Chapter of Kalispell have been recipients of 15 National Gold Emblem Awards. Luther has 56 State Farmers of which 15 became State FFA officers. He has also had four American Farmers from within his chapter.

Honors received by Luke include: the Montana Honorary State Farmer Degree and the American Farmer Degree; he received the Farmers Union Grain Terminal Association Scholarship four times; and he is a recipient of the silver Teacher of Teachers Award.



Vernon D. Luft

*Vernon Luft, former supervisor in Montana, is now a teacher in teacher education at North Dakota State University.

During his years of teaching, Luke Lalum has spent eight years conducting an adult farm management program. Five of these years were spent half time in adult farm management instruction and half time teaching in the all-day high school program. Lalum conducted an adult farm management pilot program for a period of three years. His program consisted of working with farmers in the Flathead Valley and assisting them in establishing a farm management system. He has assisted many farmers in setting up a computerized record keeping system. In addition, Luke has served as a guest speaker at Farm Management Forums in Montana. Many farmers in the Flathead Valley still rely on Luther Lalum as a farm management consultant.

Luther's love for agriculture is indicative in enumerous agricultural oriented community activities with which he has been associated. He served as chairman of the Kalispell Chamber of Commerce Agricultural Committee. He has also served as chairman of the Flathead Agricultural Council, a member of the Flathead Community College Agricultural Advisory Board, a member of the Flathead County Extension Service Advisory Board, a member of the Grange for 20 years, and a member of the State FFA Advisory Committee.

Professionally speaking, Luther Lalum has always been a busy man. He has been a member of the American Vocational Association, Montana Vocational Association, the National Vocational Agricultural Teachers As-

(Concluded on page 118)

THE ROLE OF CONFERENCING IN DEVELOPING A COMPETENT STUDENT TEACHER

Charles Byers and Harold Binkley
Teacher Educators
University of Kentucky

Competence in teaching is not an inherent talent. It is not a gift from the professor. It is not a relevation from a textbook. One cannot buy competence in teaching. Competence in teaching is a developed ability. It is the result of a clear goal, many hours of work, more hours of reflection, a few initiating failures, and some gratifying successes.

The supervising teacher plays a major and significant role in developing competence in teaching through his skill in conferencing. Skill in conferencing is the basis for a teacher of agriculture who works with student teachers as a supervising teacher. It is during conferencing that the supervising teacher guides the development of the student teacher and evaluates his performance as a teacher. How can a supervising teacher hope to fulfill his role of developing a competent teacher of agriculture — to become a top-notch teacher — without conferencing? Yet, too often in the rush to get things done, the supervising teacher fails to hold conferences as often as he should and with the quality in the conferences of which he is capable and which is very much needed and desired by the student teacher.

Conferences should be held relative to many aspects of the student teacher's experiences in the training center. It is not enough for the supervising teacher to be a model teacher and provide an opportunity for the student teacher to get experiences in the many aspects of the program. The supervising teacher must conference the student teacher so that both his observations and participating experiences are most helpful and contribute the most to his development into a competent teacher.

Perhaps, every major activity the student teacher undertakes should have a pre- and post-conference to insure that it is well planned and "comes off" with quality in his performance and is understood as to "how" it went and "why." Likewise, it is good procedure for the supervising teacher to hold pre- and post-conferences with the student teacher on most of the things he does which his student teacher observes. Activities and observations in which the student teacher may engage, which should call for conferences are:

—Supervising a student at the place of his supervised work experience —work station,
—Working with a FFA committee,
—Teaching,
—Meeting with an advisory committee,
—Working with the guidance counselor to get the kind of students that should be enrolled in a particular class in agriculture,
—Training students in parliamentary procedure,
—Completing the annual program plans for the department,
—Ordering publications,
—Planning the activities for the week ahead, and
—Evaluating the student teacher's overall progress.

Which of the above list of items *is the most important?* Teaching is the most fundamental and is selected as the most important.

Much of what is good and appropriate in conferencing for classroom teaching can be generalized to conferencing on other aspects of teaching, such as conferencing for supervisory visits, weekly planning, and student-teacher evaluations. The fundamental and real concern during student teaching should be that the student teacher learns to teach — to become the best possible teacher during the limited time available. Emphasis should be placed on the quality of teaching rather than on quantity. The student teacher should not be so heavily loaded that it is impossible for him to properly prepare for teaching and at the same time have time for a conference prior to and after teaching. Experience makes clear that making good lesson plans is time consuming and sometimes frustrating for the neophyte in the teaching profession. Failure to provide time to prepare to teach and to have conferences contributes to the deliquency of the student teacher.

Conferencing the Student Teacher Before Teaching

It is wise to set a definite time for each conference with the student teacher, not later than the day before he is to teach. Approximately an hour should be set aside for each conference in the early stages of student teaching. The length of time needed for conferences should grow shorter as the semester progresses and as the student teacher develops. The time and place the conference is to be held should be understood so there will be no "slip-up." The student teacher should come to each conference well prepared. The supervising teacher should let the student teacher know that he expects him to

(Concluded on next page)

come to the conference with the best lesson plan he can develop. It is desirable that the conference be private. It should be where each can sit comfortable on the same side of the desk or table.

The supervising teacher should put the student teacher at ease but not waste time in getting to the purpose of the conference. The student teacher should show that he has prepared and tell how he plans to proceed. The supervising teacher should be a good listener and encourage the student teacher to talk about his plan. The supervising teacher should find something in the plan to honestly compliment. For example, perhaps the student teacher has done a good job in finding suitable references and in preparing visual materials. These should be pointed out. Questions may be directed about certain weak points in the plan. The student teacher may be asked to tell more about the plan of procedure, "How do you plan to motivate the class? How will you create doubt and maintain suspense? How will you direct student observation of the visual materials?" The use of questions — specific ones — are very important here. During the conference(s) the student teacher should identify the strengths and weaknesses in the lesson plan. Equally important, the student teacher should develop an approach or plan for correcting the weaknesses.

One note of caution: it is a mistake for the supervising teacher to give or make available to the student teacher his lesson plans or the lesson plans of former student teachers. If the student teacher is to learn *to plan* lessons *he must plan them.*

The conference should end with the student teacher feeling that he has received help in improving his plan. He should now make the changes which he feels are necessary. He may want to check with the supervising teacher again before he goes before the class. He should have this opportunity. The final plan should be the best the student teacher can make and should have the sanction and support of the supervising teacher. This makes for a partnership relation and puts the supervising teacher in position later to talk about "your plan" when referring to the good and "our plan" when dealing with the weaknesses.

The Student Teacher Should Have Total Responsibility

When the student teacher is teaching, he should have complete charge of the class with all the authority and responsibility that goes with it. If the supervising teacher wants to ask a question or make a comment during the discussion, he should get recognition from the teacher just as would any other member of the class. He should usually sit alone at a table or desk in the back of the room where he can observe all that goes on. He will want to make notes — write down some of the comments of the students and of the student teacher to which he will refer later. The supervising teacher should add his own questions or suggestions to the list. The need and importance of the supervising teacher being present and observing the student teacher cannot be stressed too much. The supervising teacher cannot evaluate the student teacher's performance unless he has observed him perform. Perhaps, as the semester unfolds there will be occasions when the student teacher will desire to have the class all to himself. However, this should be done as a part of the supervising teacher's plan for the growth and development of the student teacher and not for the supervising teacher's convenience. It is cruel to make a substitute teacher out of a student teacher.

The After Conference is Significant

After the student teacher has taught, he will be eager to know the supervising teacher's evaluation of his teaching. Usually this conference should be held the same day; in no event later than the day following. If delayed too long, some of the fine points of what happened will be forgotten. At this conference the student teacher should be encouraged to first tell what he feels good about — what "went right?" The supervising teacher may reinforce these things with his comments and add other things which the student teacher did not mention. The next logical question for the supervising teacher might be, what difficulties were encountered and what the student teacher would do differently under the same circumstances? The supervising teacher should point out weaknesses not mentioned by the student teacher. The "principle of effect" has a lot to contribute in the discussion of the after-teaching conference. The student teacher must be caused to feel "satisfied" with the correct or good performance and be "annoyed" with his errors or poor performance. However, the positive should be emphasized rather than the negative.

Good pre-conferences can help maximize the positive in the post-conference by removing many of the errors in the planning for the teaching. The student teacher is inexperienced in directing the learning process and needs guidance to help him evaluate his performance if he is to develop into a competent teacher. However the strategy of letting the student teacher have the "first crack" at listing his strengths and weaknesses is a good move in terms of good psychology and human relations.

If the student teacher's experiences in the center are essentially satisfying and they should be, the "principle of association" will be working positively for the program. When the student teacher later thinks about his teaching in the center, he will feel good — he will associate his teaching with a good feeling (essentially satisfying). Good conferences can and will contribute to his later association of teaching with being a very satisfying experience. The opposite can and will happen, through failure to have the appropriate meaningful conferences that are needed to develop a competent teacher.

In Summary

The supervising teacher has a dual obligation: 1) he is responsible for seeing that the student teacher participates in the activities of a teacher, and 2) he is obligated to those students enrolled in his classes for providing them the best possible instruction in agriculture. The two are not in conflict, but can and should be mutually supporting. Being a good supervising teacher is not an easy task — guiding the student teacher through conferences (formal and informal) is not easy and requires a great deal of time and dedication. A supervising teacher has a job to do — the kind of job which he has the ability and desire to do. At the heart of the performance of this job is that of teacher-student teacher conferences. Well planned conferences work for the benefit of the student teacher, the supervising teacher, the students, and the total profession. ◆◆◆

CONTINUED LEADER IN AG ED: LUTHER LALUM

sociation, the National Education Association, and the Montana Educational Association for 25 years. Luke has attended nine AVA conventions and served as Vice President and President of the Montana Vocational Agricultural Teacher Association and Alternate Vice President and Vice President of NVATA Region I; and currently serves as the NVATA president.

Being vitally interested in the welfare of Agricultural Education across the State and Nation. Luke has served as chairman of the State Vocational Agricultural Curriculum Revision Committee and was a member of the Montana State University Agricultural Engineering Department Advisory Council. He has always been considered one of the leaders in Agricultural Education in Montana.

Luke's love for his profession as a vocational agricultural instructor has been inspirational to many young members across the State of Montana. He has mentioned many times in statewide meetings that he would not trade his profession for any other, even though it has its ups and downs. Luke claims his personal interests to be agriculture, his students, his family, and fishing. It is difficult to visualize him having any time for his personal interests with as much time as he spends professionally in agricultural education, working in the field of agriculture and with his students. His family and friends certainly must be understanding to sacrifice the time they could normally be spending with Luke. When Luke does have some spare time, he enjoys fishing in the mountain streams in Western Montana. His specialty is fly fishing, and his son, Mark, indicates that his dad has some tall tales to tell about his fishing experiences.

It was with many high qualifications, that Luther Lalum was elected President of the National Vocational Agricultural Teachers Association during the American Vocational Association Conference held in New Orleans last December. Luke has not only worked hard in his own community, state, and region, but he contributed many efforts to promote Agricultural Education at the national level. The Montana Vocational Agriculture Teachers, the Teacher Educators, and the State Staff are all mighty proud of Luther Lalum's accomplishments. It is with this respect that we declare Luther Lalum is indeed, a leader in Agricultural Education. ◆◆◆

CONTINUED OCCUPATIONAL WORK EXPERIENCE

must be available to supervise the student when necessary. The frequency will vary with each individual placement, but all are visited at least once per month. It is essential to maintain open communications between all parties with the teacher available to make changes.

While working, each student is expected to maintain a file of occupational records. These are kept in a notebook for teacher review. The notebook is graded each marking period. The employer is required to evalute the student on a monthly basis. This is combined with the teacher's evaluation and record grade to determine a final grade. Each semester the employer is asked to evaluate the student's occupational progress. Progress is recorded in a permanent file. The student is also interviewed, goals reviewed, and programs modified. The information gained from this resource has proven excellent in class instruction. This approach to occupational experience programs has provided an additional dimension to our agricultural department and has improved the overall quality of instruction. ◆◆◆

CONTINUED DO PUPILS ANSWER . . .

This question must receive a follow up question to determine the extent of the student's knowledge. He may guess correctly and you can be misled.

5. "How many chromosomes do you think a shrimp has?" This is a guessing game and may not have much purpose. Too many of these guessing questions will limit the effective learning in a given period.

6. "When should we water the plants which are starting to wilt?" This question obviously has a hint of the answer built in.

7. "Compare the recent milk boycott with the sugar boycott." This statement will really test the student. It is not the simple recall type. The question should encourage answers which are based on fact yet allow the student to be original in his response as he pursues a longer and more thoughtful answer.

8. "How do you feel about the energy crisis and the turf grass fertilization?" Again, this question allows students to judge, value, justify a choice, or defend a position. This evaluative-thinking question is a higher cognitive level and may require the use of all of the operations used at lower levels. We need more of these kinds of questions in our lessons!

In summary, let us strive to improve our questioning techniques by consciously asking questions at all levels and directing appropriate questions to our students. Let us, also, be conscious of the responses we give to the answers. Next time you get an "I dunno" . . . . WHAT WILL YOU DO? ◆◆◆

BOOK REVIEWS

INDIVIDUALIZING VOCATIONAL AND TECHNICAL INSTRUCTION. By David J. Pucel and William C. Knaak. Columbus, Ohio: Charles E. Merrill Publishing Company 1975. 244 pp. $12.95.

The idea underlying this book is that individuals learn in varied ways and at different speeds but must usually be taught in groups. Therefore, the book attempts to explain and describe procedures which allow the instructor to manage the learning activities of a group while accounting for the needs of individuals.

The theory underlying individualization of instruction is presented first along with a proposed model for vocational education. Next, methods and procedures for implementing the model are discussed and examples presented. Some of the topics include: (1) program needs, (2) program content, (3) students, (4) objectives, (5) instructional strategies, and (6) student assessment. These topics are followed by suggestions for managing an individualized instructional program.

The chapters are written clearly and have concise summaries at the end. Lists of references at the end of each chapter provide sources for more in-depth study of selected topics.

The authors' backgrounds provide for the theoretical soundness and practical application of the book. David J. Pucel is a professor at the University of Minnesota while William C. Knaak is Superintendent of the Special Intermediate Vocational School District 916 at White Bear Lake, Minnesota.

This book should be especially useful for pre-service and in-service vocational and technical teacher education at the college level. Teachers attempting to improve their instruction would also find this book an important one to add to their personal library.

Book Review Editor

AGRICULTURE, ECONOMICS, AND RESOURCE MANAGEMENT, by Milton M. Snodgrass and L. T. Wallace. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1975, 521 pp. $13.95.

This book was formerly published in 1964 and 1970 under the title AGRICULTURE, ECONOMICS, AND GROWTH. As the authors note in the preface, this revision "expands the treatment of applied business management, and integrates farm and nonfarm agricultural enterprises with a focus on the total food system." The book is divided into seven parts which deal with the following major topics: The substance of economics and the interrelationship of agricultural and nonagricultural economic life; the physical environment, population and labor force, capital resources and technology; the characteristics of U.S. farms, marketing food and fiber, and consumption of food; basic microeconomic principles and tools of economic analysis; the role of management in decision making; the world agricultural situation; and the problem-solving approach in policy formation. The authors are to be commended for doing an excellent job of applying basic economic and business management principles to farm and nonfarm agricultural enterprises. They fail, however, to recognize the role of vocational agriculture in training persons for employment in the total industry of agriculture. This is indicated by the following statement which appears in the book: "The need for teachers in vocational agriculture will probably decline, because fewer and fewer students are going back to the farms."

The authors are qualified to write on this subject. Dr. Snodgrass is Professor of Agricultural Economics and Agricultural Business, New Mexico State University and Dr. Wallace is Professor of Agricultural Economics, Agricultural Extension Service, University of California at Berkeley.

AGRICULTURE, ECONOMICS, AND RESOURCE MANAGEMENT is intended for use as a beginning text in agricultural economics courses. The book will be very useful as a reference for teachers and students of agriculture in high schools, junior and senior colleges and universities, professional agricultural workers, young and adult farmers, agribusinessmen and others with similar interests.

J. Dale Oliver
Virginia Polytechnic Institute and State University
Blacksburg, Virginia

EDUCATORS GUIDE TO FREE FILMSTRIPS, edited by Mary Horkheimer and John Diffor. Randolph, Wisconsin: Educators Progress Service, Inc., 1974, 26th Edition, 184 pp., $9.95.

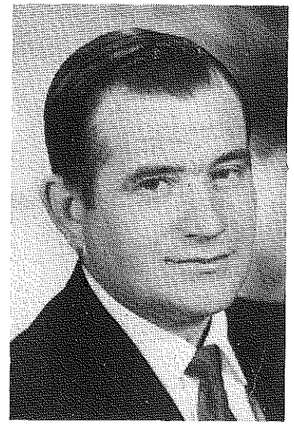
This book is literally filled with titles of filmstrips and/or slides designed to carry a message which only pictures can do. Covering a wide variety of topics ranging from "Agriculture" to "Sports and Recreation," these filmstrips can provide solace for the harried teacher since the book indicates there are businesses that have a message they would like to tell and all simply by asking. Each title has a brief and concise statement describing the content of the set, which will tell at a glance whether it is appropriate for the age group, as well as for the subject or unit under study. Opportunity to broaden the base of much contemporary teaching abounds in this easy-to-read, easy-to-present teaching media. In actuality, one must see to believe that this assortment of teaching aids is, indeed, available for the asking.

The authors have edited this publication in previous editions and have performed a valuable service to educators on a scale ranging from elementary to post-high school levels. Any school system which seeks to economize on visual aids, which seeks to bring much of the "outside world" to the classroom, and which believes in cooperating with those who continue to believe in supporting education will find this book an invaluable addition to their professional library each year.

William W. Stewart
Muscatine Community College
Muscatine, Iowa

New Special Editor

MONTANA, IDAHO, AND WYOMING



Douglas Bishop

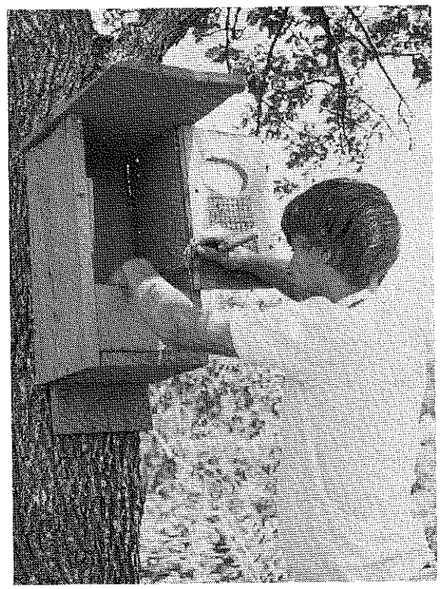
Dr. Douglas Bishop is Professor of Agricultural Education at Montana State University. He completed his B.S. degree at Colorado State University and taught vocational agriculture in Colorado for ten years. He received his Master's degree from Colorado State in 1962. In 1967 he began work on his Ph.D. at Ohio State while working as a research associate at The Center for Vocational and Technical Education. In 1969, Doug completed his work at Ohio State and accepted a position as Assistant Professor at Montana State.

His responsibilities at MSU include teaching in the area of research design, evaluation, curriculum development and methods of teaching. He also supervises student teachers and conducts in-service activities.

STORIES IN PICTURES

by Jasper S. Lee

VO-AG STUDENTS OBSERVE CLEANING OF ENGINE — Students at McDuffie High School (South Carolina) observe another student using a steam cleaner on an engine. High Durham, agriculture teacher, is shown explaining the demonstration. (Photo from J. Alex Hash, Department of Agricultural Education, Clemson University)

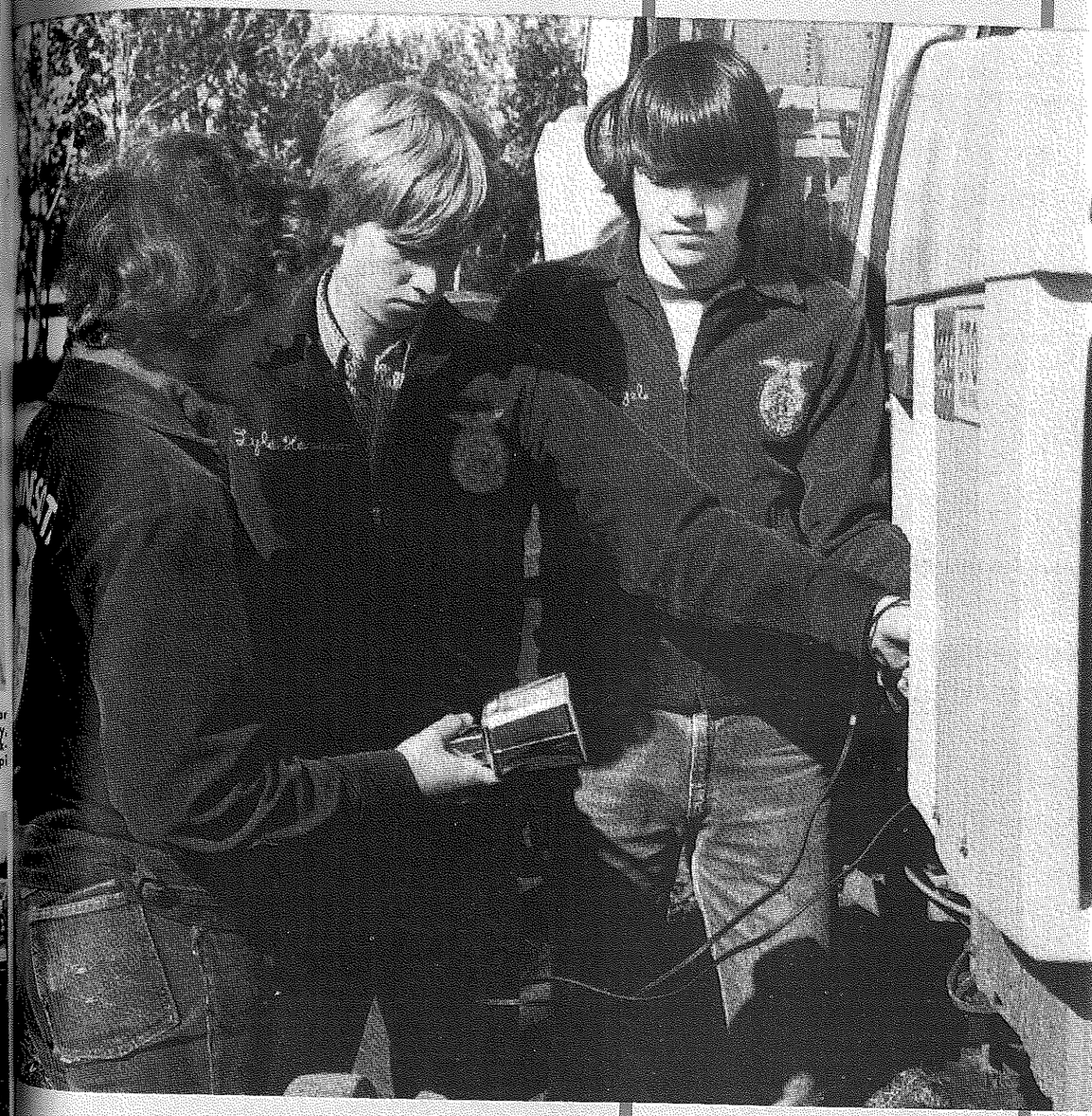


INSTALLATION OF DUCK NEST — Ray Spangler (Ewing, Nebraska) is shown installing a specially constructed nest for wood ducks released by the Ewing FFA Chapter. (Photo from Dennis Cetak, Agriculture Instructor, Ewing, Nebraska)

WORKSHOP ON BEEF CARCASS EVALUATION — Howard Miller (left front), Professor of Animal Science at Mississippi State University, is shown instructing agriculture teachers during a recent in-service workshop on beef carcass evaluation. (Photo from Jimmy McCully, Mississippi State University)

LAND LABORATORY CATTLE PROJECT — Students at Grant, Michigan, are shown receiving hands-on experience in feeding cattle on the land laboratory operated as a part of the vocational agriculture program. (Photo from Frank Bobbitt, Michigan State University, and Grant Fettig, Grant, Michigan)

AGRICULTURAL EDUCATION



Theme—AGRICULTURAL MECHANICS