



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

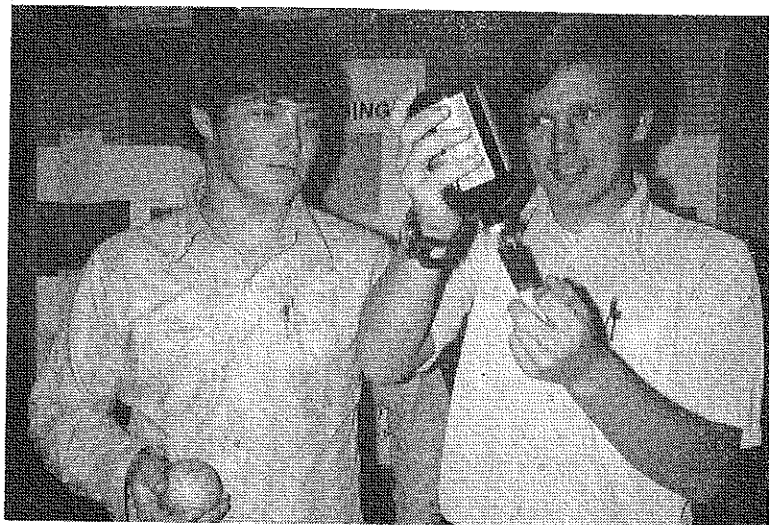


SOME OF THE REWARDS. The NVATA Teachers Recognition Award is presented by the Pfizer Agricultural Division to the vocational agriculture teacher who was the advisor to the national winner of the FFA Agricultural Proficiency Award in livestock, dairy, and poultry production. Pictured are: (left to right)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

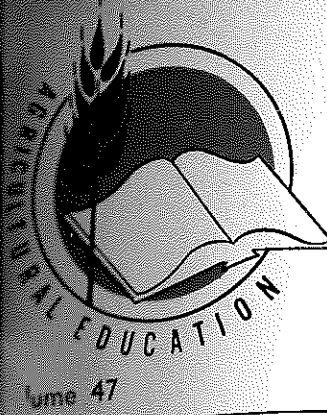


WE NEED ADVICE. Programs of Agricultural Education require good advice by supervisory, teacher education and administrative personnel. The above photograph shows joint planning underway in Virginia. Seated are Dr. M. A. Fields, Head, Ag. Ed., Virginia State College; Mr. Julian M. Campbell, State Supervisor;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

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



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



Agricultural Education

September, 1974

Number 3

Stories in Pictures

by Richard Douglass

Developing The Agricultural Competence In Our Own Community



Theme—SCHOOL ORGANIZATION AND ARTICULATION

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The
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Magazine



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TABLE OF CONTENTS

THEME—SCHOOL ORGANIZATION AND ARTICULATION

Editorials

Too Articulated?	Martin B. McMillion	51
The Secondary Area Vocational Center Has a Place if—	Allan L. Utech	51
Problems of Changing From a Local School Program to an Area School Program	James F. Pew	53
Articulation—A Must Between Junior and Senior High Schools	Daniel A. Shenk	54
School Organization and Articulation	Marlyn Hahn	55
A Link in Vocational Education	Gerald Iverson	56
Curriculum Organization and Articulation in Vocational Education	Curtis L. Nelson and Ken Ingvalson	57
An Extra Dimension	Benton K. Bristol	59
Governance System of Spoon River College	Carl J. McCausland	60
An Additional Facility—An FFA Project	Mohamad W. Khan	62
A Strategy for Establishing a School-based Job Placement Program	Jimmy G. Cheek	63
Reviving Interest in Adult Education ..	J. C. Atherton and J. C. Simmons	65
The Computer Is Farm Machinery	Jerry W. Berg	66
Agricultural-Industrial Equipment Course	Donald D. Dilgard	68
A Seminar for Cooperating Teachers in Kansas	Howard R. Bradley	69
Citrus—The Money Fruit	J. Richard Franklin	70
Book Reviews		71
Stories in Pictures		72

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COVER PHOTO:

The goal of articulation is effective and efficient programs of Vocational Agriculture. Gary Grey, Instructor at Pierre, South Dakota reaps the benefits of an articulated program. He is shown working with a group of Pierre Vo-Ag students on a range management tour. (Photo from Larry G. Nelson, State Supervisor, South Dakota)

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Editorials

From Your Editor . . .

TOO ARTICULATED?



Martin B. McMillion

When all the jobs have been analyzed, all the performance objectives have been catalogued, and a bank of test questions are on the states' computers, we can have the perfectly articulated agriculture curriculum. Every student can have a complete progress chart that has been checked off by the numbers. Should that happen, we will have primarily a skills training program for manipulative jobs that produces workers who are strangers to creativity and problem solving. The approach has many points in its favor; but the amount of emphasis on the approach, if the literature is an indication of what is going on in the classroom, is excessive if we are going to continue to prepare persons who have a capacity to think, to feel, and to act.

The call for accountability and the need for articulation associated with it led the profession towards skills training programs and so did our lack of knowledge of the off-farm occupations. We did not know much about the occupational clusters; so the easiest way to start a program was to go out and observe the person in the occupational cluster whose job was the most standardized and perhaps who had to think the least, then return to school to train students to perform the steps and procedures without question by either teacher or student of the appropriateness of the steps and procedures. Employers contributed to our focus on these entry-level workers because they identified the most job openings at that level.

Guest Editorial . . .

Allan L. Utech, *Consultant Applied Biological and Agricultural Occupations State of Illinois*



Allan L. Utech

The secondary area vocational center has a place, but finding its place in agricultural education has created concerns and problems. In some situations, those involved at the area center see their role as providing all of the vocational education programs. This would eliminate all of the 11th and 12th grade programs in the participating area center districts. This creates problems. In other cases, an area vocational center employs a teacher who takes what has been a good participating school program and moves it intact to the area vocational center. This is a situation that can cause problems also. No one can fault a teacher who wants to upgrade himself in a new position, but problems arise when the teacher teaches the same course at the area center as was taught in the participating school district. The other agriculture teachers

Vertical articulation as it is exemplified in the article by Nelson and Ingvalson in this issue is almost foolproof. The organization of the curriculum is such that a student can move efficiently through the list of competencies from high school, post-high school, and adult education with neither gaps nor overlaps in the series of competencies attained. The program and the article are commendable; however, they did prompt this cautionary editorial.

Motivation of a student to follow a curriculum in which the student has so little input appears to be heavily dependent upon the dollar that can be earned after all the competencies are mastered and on what is called closure — or completion, in this case, of the list of competencies. The demands of business and industry take precedence over the demands of human nature. Hopefully, the highly structured curriculum is only a core beyond which freedom and encouragement to pursue related interests during school time are provided.

Articulation of a state-wide agricultural curriculum could be facilitated by a rather fixed course of study agreed to by representatives from the various educational levels. For years, it was difficult to name a state that had a state-wide curriculum in agriculture that was intended to be more than a curriculum guide. As educational programs become more specialized, the trend seems to be toward agreement concerning what the specialized curriculums should be.

I feel there is more agreement upon what should be taught than on the level at which it should be taught. It seems unwise to make a decision to postpone a particular

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THE SECONDARY AREA VOCATIONAL CENTER HAS A PLACE IF - -

in the area center participating districts will look on the area center program as direct competition for students and programs, which it is. The area vocational center will make many enemies when dwindling student members in the local cooperating district dwindle some more. Problems! Problems!

Up to this point I have painted a rather bleak picture of the area vocational center involvement in agriculture. The opposite can be true if the correct concepts can be understood by all concerned. The following procedures can lead to improved understandings. The results will show in improved relations among the participating area center districts and the area vocational center. There will be a large number of new programs developed, with a great increase in total student enrollment. Neither teachers nor programs will be phased out. Most important of all would be the improved quality of training provided the students.

1. Participating school district programs (including

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From Your Editor . . .

part of education or training to the 13th or 14th year and try to standardize it across the state. Every student cannot or will not remain in school through fourteen years. Some high schools can attract the more able students and teachers and provide better facilities than the post-secondary institutions. Most of us know of a high school teacher who has been hired by a post-secondary institution to practically move his superior program in agriculture to a

Guest Editorial . . .

the home district of the area vocational center)

- a. The 9th and 10th grade agriculture program in the several participating districts should consist of a survey-type program that orients students to the broad scope of agricultural occupations. It would have in it elements of what has been considered as agriculture in the past, but the major focus would be to introduce "the wide world of agriculture" to thousands of students, both boys and girls, who may not have viewed themselves as agriculturalists, but rather as being oriented to a "science career." It would not be unusual to find future florists, landscapers, farriers, zoo keepers, poodle clippers, plant breeders, farmers, agricultural mechanics, foresters, feed salesmen etc., in a class of this type.

- b. The 11th and 12th grade program

All areas of agricultural occupations should be available to these students, except specialty areas of agriculture developed as area vocational center programs.

Participating district programs in agricultural occupations at this level would probably be on a yearly or on a special subject-matter semester basis.

- 2. Area center program responsibilities

- a. Special areas of study at the 11th and 12th grade levels that are not feasible at the participating school district.
- b. Special facilities.
- c. Cooperative education when and if applicable.

- 3. Identifying characteristics of a successful area center program in agricultural occupations

- a. Specialty courses that do not compete.
- b. Specially qualified teachers who have expertise in specialty subject matter. They are recognized specialists by students, parents, faculty, advisory

post-secondary school. I do not feel it is wise to try to bring one level of instruction back to standardize what takes place at various levels.

It is necessary that the level of instruction and the subject matter being taught at various institutions be widely known. The wording of the course of study might not convey the desired information. Some standardization of the agricultural curriculum is necessary; however, much freedom and a liberal amount of communication is the desired route, at least for curriculums beyond the tenth year.

—MBM

Center school instructors should be recognized specialists by students, parents, faculty, advisory council members and most important of all, fellow agriculture teachers in participating school districts.

council members and, most important of all fellow agriculture teachers in participating school districts.

- c. If cooperative placement is involved, there is a need for specialty subject matter courses available at the area center. Cooperative education is by no means essential to a successful area center program. It can, however, complement the total program offering.

- d. Laboratory involvement (class, shop, field, laboratory, greenhouse, etc.).

- e. Cooperative placement training to complement the center program.

- f. Advisory councils for all specialty areas.

- g. A mutual understanding of the role and function of the area center and its participating districts. A beginning toward this understanding could be developed if the area center teacher asked the participating district agricultural occupations instructors the following questions: What areas of agriculture would you like to offer in your local department if — the specialized equipment were available? The specialized facilities were available? You had the specialized training that you would like to have?

Area vocational centers do have a place, an important place. It's too bad that there is so much confusion as to what it is.

Themes For Future Issues

October — Instructional Technology

November — Improving the Profession — the Job and the Teacher

December — Better Teaching and Learning

January — Urban Agricultural Programs

February — Programs in Natural Resources

March — Utilizing Resources in Teaching

April — Informing the Public

May — Teaching the Disadvantaged and Handicapped

June — Women in Agricultural Education

Problems of Changing From a Local School Program to an Area School Program

James F. Pew, Director
Conway Area Career Center
Conway, Arkansas



James F. Pew

Local schools have for many years enjoyed much success in vocational agriculture programs. Accomplishments by individual schools, departments or local chapters could be attributed to the dedication, guidance and cooperation of many people including dedicated students, interested parents, a cooperative faculty and community support through both civic groups and individuals interested in becoming involved.

Conway High School is a public institution located in Faulkner County, Arkansas. The total enrollment in grades 10-12 is approximately 900 students. There are five other local schools in our county within a 20-mile radius. Each of these schools has a very active vocational agriculture program. The membership of Conway's local chapter was approximately 114 last year. They enjoyed much success and displayed tremendous pride in their accomplishments. They received the National Silver Emblem award for 3 consecutive years, '69, '70 and '71 and the National Gold Emblem in '72-'73.

Because vocational agriculture programs are a combination of classroom work, shop work and individual projects, much interest has been shown in the program. Increased interest in shop work made us aware of the need to change our program of instruction. We are making an effort to meet the needs of all students and the growing need by our industrial community for skilled workmen.

Following an extensive study of the needs of our area and the interest and needs of our students, we decided that a new approach to vocational education was needed.

A new building was erected on the

Conway High School campus to house all vocational courses including five complete shops. We converted from a local type program to the area concept. Under the area program we are able to serve not only our students but interested students from the five other local schools in Faulkner County. Our new facility is known as The Conway Area Careers Center.

As a result of our expanded facility and the area concept, we are now able to offer 13 vocational courses in addition to agriculture. Students may choose their individual areas of interest from these course offerings: Health Occupations, Welding, Office Practice, Typing and Dictation, Foods Lab, Clothing Lab, Construction, Comprehensive Home Economics, Mechanical Drawing, Refrigeration and Air Conditioning, Electronics, TV and Radio, and Auto Mechanics.

Vocational agriculture enrollment has decreased from 114 last year to only 56 members this year.

Vocational agriculture for years had incorporated many of these areas into their overall program, but with the new career concept focusing on specialization, our vocational agriculture enrollment has decreased from 114 last year to only 46 members this year. Students, both boys and girls, who previously would have been enrolled in the general agriculture program have chosen in their 10th grade year to go into vocational exploration. These students are allowed to choose four areas of interest from the thirteen vocational courses offered. During their 10th grade year they spend nine weeks in each of their four chosen areas. At the end of this first year, students should be able to decide which of the four areas they are interested in pursuing. They are

then scheduled into their one area of interest for a two-hour block for the entire school year. Eleventh and twelfth grade students are allowed to take the two hour block courses. Any student may choose after a full year in one course to go into an advanced course during their senior year. The advanced courses are all work-study programs and students may become skilled in their chosen trade.

We are experiencing a decrease in enrollment in our vocational agriculture program as a result of our expanded area program. In an effort to create new interest in vocational agriculture we are implementing a new approach to this course. Students may now choose their area of interest in vocational agriculture, either animal science, landscaping, horticulture, or plant science. Animal science will be approached more by individual projects off campus combined with classroom work. The Landscape, Horticulture, Plant Science courses will be classroom work combined with both on- and off-campus projects.

A tremendous amount of interest has been generated this year in the area of plant science using artificial lighting in a portion of the regular classroom. This small scale greenhouse work will be expanded during our next school year. Plans are being formulated for a 24' x 48' greenhouse to be constructed on campus. This project will involve students from mechanical drawing, construction and vocational agriculture working as a combined crew to plan, purchase materials and construct a greenhouse. This will allow vocational agriculture students a work-study program which hopefully will increase interest and thereby increase our enrollment in these courses.

We are looking forward to much more participation by students as a result of our changes in the vocational agriculture program.

ARTICULATION—A MUST BETWEEN JUNIOR AND SENIOR HIGH SCHOOLS

Daniel A. Shenk*



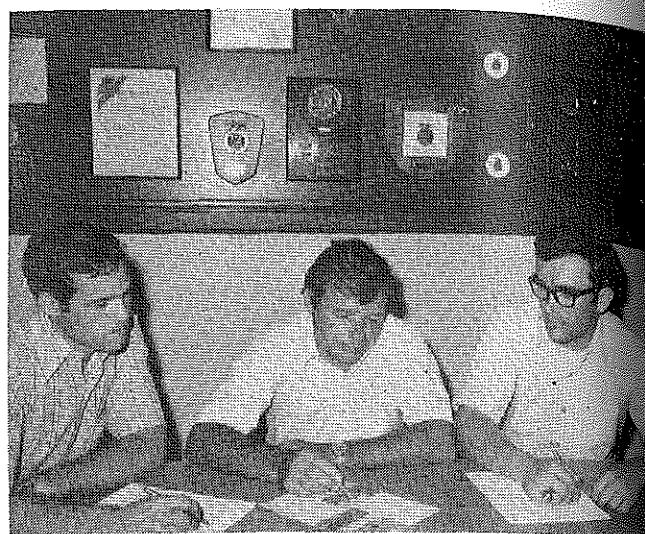
D. A. Shenk

The trend in recent years toward the expansion of agricultural education programs into the secondary, middle schools has created an urgent need for more effective articulation between these schools and the high schools to which the intermediate students are promoted. A multitude of problems can be avoided if procedures are established which facilitate communications between the schools offering agricultural education within the same school division. Benefits derived from effective articulation might be:

1. Programs of instruction, when carefully planned and administered, will insure minimum repetition of subject matter on the various levels of the agricultural curriculum;
2. Guidance and career counseling of students will be significantly improved;
3. Coordinated programs achieve more liberal support of the administration and the board of education;
4. Joint public relations programs provide a means of gathering the support of the total patronage of the school division;
5. Programs of FFA activities will reflect enthusiasm without extreme rivalry between the schools;
6. Well articulated programs create a feeling of contribution to the total program on the part of all instructors involved in the planning;
7. The decision making process is facilitated when a clear-cut channel of communications exists between the schools conducting programs;
8. Accountability and evaluation of programs become a team effort, thereby reinforcing both of these important aspects with sound, unbiased opinions;
9. Adult programs can be planned and conducted more efficiently;
10. Occupational experience programs can be made more meaningful for the students.

The benefits to be derived from well coordinated programs of agricultural education are limited only to the cooperative attitude of the instructors. Each individual involved in the planning and conducting of a joint-effort program must be willing to make contributions without seeming to be overbearing; and be prepared to accept constructive criticism without being oversensitive. The educational welfare of the students must be the basis of the decision making process. Personal likes and dislikes, other than those which pertain to genuine concerns for the total program, must be eliminated from the coordination effort. Only when each instruc-

*Daniel Shenk is a former instructor of agriculture at one of the intermediate schools in Frederick County, Virginia, an assistant principal of the same school and presently the principal of the Dowell J. Howard Vocational School (Center School) for the City of Winchester, Clark and Frederick Counties.



Instructors of Agricultural Education for the Frederick County School System in Winchester, Virginia deliberate over an important phase of their joint programs. Left to right are: Wayne P. McAllister, department chairman of Robert E. Aylor Jr. High, A. Hyton Clark Jr., department chairman of James Wood High School, and Roger Crosen, department chairman of Frederick County Jr. High.

tor is willing to accept this challenge of cooperative planning procedures will any effort in cooperative planning be truly successful.

The methodology utilized for conducting a joint-effort program of agricultural education will vary with the program structure and objectives within each school system. An excellent example of a program in Virginia which has been most productive is one being carried out by the Frederick County School System in Winchester, Virginia. This program involves two intermediate feeder schools and one high school within the school division. The intermediate feeder schools, Frederick County Junior High School and Robert E. Aylor Jr. High, provide basic programs of Agricultural Science and Mechanics to students in grades 7, 8, and 9; while James Wood High School provides optional programs in Production Agriculture, Agricultural Machinery Service and Ornamental Horticulture to students in grades 10, 11 and 12. Each school has an active bonified chapter of the Future Farmers of America; and also provides adult programs for the patrons in their school service area. Eight full-time instructors are employed to conduct the extensive programs being offered in the three schools. Each intermediate school has two instructors, with one in each building designated as the department chairman. The high school has a staff of four instructors responsible for teaching and conducting the three agricultural options, and one teacher who doubles as department chairman and as coordinator of the total county program.

(Concluded on next page)

School Organization and Articulation

Marlyn Hahn
Vocational Agriculture Instructor
Franklin, Wisconsin



Marlyn Hahn cannot.

The question is asked, "How do I begin?" The following are suggestions which may keep you from "spinning your wheels."

Personal Contacts

Whatever you do, do not sit in your school office all day! Travel the roads of the community and visit with farmers, businessmen, etc. The purpose of this visit is to introduce yourself as the new agriculture instructor and to get some insight into problems in the agriculture program. Take an information sheet along and fill in data on each person visited; this information may prove helpful when you are looking for people to serve as resource persons, cooperative training stations, etc.

Short and Long Range Program Objectives

The joint program in Frederick County is carried out by the use of several techniques which would be feasible where coordinated programs are deemed necessary:

1. Professional meetings of all instructors are conducted during division workshop days and on other appropriate occasions;
2. Group purchasing of instructional supplies is practiced when discount rates are offered for large purchase orders;
3. Schedules are exchanged for FFA activities and adult programs in order to prevent conflicts and duplication of effort;
4. Joint FFA activities are sponsored by each chapter to include FFA executive planning sessions, field trips, training sessions for judging teams, and social activities;
5. The intermediate schools maintain a folder which includes valuable information about the student, and the folder is passed on to the high school when the individual is promoted;

The most difficult problem faced by new agriculture instructors is the organization of an agriculture department. It would be ideal if we could gaze into a crystal ball and make our decisions, but we

A policy statement by your board of education outlines the framework for agriculture education in the community. Every school should have adequate policies. The new agriculture instructor should plan a program which meets the needs of students of the community. In this age of accountability, a written plan helps the instructor conduct his program in accordance with what the community expects of him.

Advisory Committee Recommendations

Every agriculture program should have an active advisory committee. The advisory committee can serve an instructor in many ways. The advisory committee members support the program and the teacher. The main purpose of the advisory committee is to give advice. The new instructor should read the minutes of previous meetings, weigh their recommendations and make plans for his program.

Summer Program Activities

During the summer months, a new agriculture instructor may mistakenly think he will have a long vacation. The list of summer activities is long. The bulk of the summer program deals with teaching and supervision of students at the farm, home, or job. A copy of your summer program plans should be on

file with your administrator, state supervisor, etc. The summer program plays a key role in the success of the agriculture program.

Public Relations Program

Keep the public informed of the activities and accomplishments of the agriculture program. The public must be made aware of what is happening.

Curriculum Planning

The real "meat" of the agriculture program is the curriculum outline. The new agriculture instructor should keep in mind the policies of the short and long range plan and the needs of the student when designing his curriculum. Herbert Thelen, who has also presented some models for new organizational patterns in schools, states this value thus: "... changes, through education and action, are actually brought about by somebody doing something different... We change the world by acting differently and encouraging others to act differently; this is what we mean by change... change anywhere may lead to further changes in other parts of a system."

It is important to evaluate the agricultural program in terms of objectives to see where you began, where you are now, and where you are going. ◆◆◆

6. Curriculum materials are exchanged and teaching calendars are closely coordinated to coincide at the intermediate level;
7. Student recruitment is a well-planned activity which involves all instructors;
8. News releases to public media are jointly planned;
9. A unified assessment is established for all dues and fees charged to students and adults; and
10. The telephone offers a means of "spur of the moment" type of coordination, and is used most advantageously.

A program that is administered jointly by two or more schools can produce results that will gain public support, improve student and teacher morale, and most importantly, increase the quality of the learning experiences for all students who enroll. This is not to assume that coordination of agricultural programs will become a panacea to all existing problems; but that the sharing of the responsibilities will certainly increase the effectiveness of the total program in the school division.

A Link in Vocational Education



Gerald Iverson

Instructors of Vocational Agriculture see themselves and their curriculum as an independent and often as a separate program. The Ag-man's position and tasks are quite involved; his activities and responsibilities are far removed from those of other instructors within the school system. Our responsibilities are great and the programs are continually changing. New emphasis and appreciations given to agriculture within our economy have made the task of keeping abreast of new technology increasingly difficult. Therefore, we often forget that even though our programs have their own special character and serve a specialized need, we are not alone. We are a part or link in an ever-growing chain of vocational education.

Department Independence

Because of the nature of occupations related to each of the vocational areas, the departments must be specialized, focusing on the goals of the students and the needs of the community. We find duplications within the teaching of basic skills, those skills necessary to learn new and more important ones. Instruction related to the skills of parallel vocational areas must be handled by qualified instructors who can develop the attitudes and provide the guidance needed to make a department truly vocational. Program continuity can only be maintained when qualified vocational instructors teach the appreciations, principles, and basic skills necessary to realize an occupational goal. Organized and effective cooperative arrangements and enterprises for our student's supervised occupational experience programs depend upon the rapport and understanding that an instructor establishes while supervising and advising his students. In order for such diversification of introductory programs to co-exist in a true symbiotic relationship, an honest and open line of communications must

Gerald Iverson
Agriculture Instructor
Minot, North Dakota

Initial course offerings must remain somewhat basic and exploratory.

exist among everyone involved. We must all have the same basic objective — to enhance the employability of our students.

Inter-Cooperation

Our state and national vocational organization, the American Vocational Association is designed to strengthen the bonds between all vocational areas; yet few schools have a structured local organization. Such a local organization serves foremost as a sounding board and is the first step towards unity within a school's vocational plan.

Many of the vocational disciplines are faced with similar problems. Although often structured differently, these difficulties can usually be best resolved through a combined effort.

Cooperative efforts of vocational youth groups can serve to strengthen individual clubs and improve the effectiveness of their community service projects. Leadership, self-confidence, brotherhood, and community affairs are all priority areas of vocational youth groups and will best be implemented by working together. Contests such as public speaking, parliamentary procedure, recreation, and demonstration activities can be held between the various clubs. Local programs should use inter-club competition as an incentive to attain more and better skills from their students.

Update and Enhance

Individual student's occupational goals must be given first consideration when developing a curriculum outline. Granted, not every student upon enrolling in vocational agriculture has established a realistic or a meaningful set of goals. That's where the instructor comes in. We must do one of two

things for our students; we either assist them in maintaining and enhancing their career objectives or present new and more realistic goals to them for their consideration and selection.

Initial course offerings must remain somewhat basic and exploratory, allowing students opportunities to discover, make changes, and "find themselves." Updating and enhancement include more than curriculum outlines and course offerings; it includes a plan for continuing education for those who staff the vocational programs. Conferences, in-service training and special-topic workshops are important disseminators of new ideas and techniques. Many of these sessions provide the necessary information needed by the man in the field. Unfortunately, too many of these training programs offer theory and trimmings and not enough hard facts and sound principles. Often those sponsoring these special programs lose sight of the fundamental and necessary foundations which hold our individual programs intact.

Administrative

The organization of departments, units, and schedules, are different at each school. Much depends on the size, the diversification, and of course the personal expertise of the staff. Smaller schools will find it more conducive to utilize an existing member of the staff as a director. A larger school, supporting several vocational programs and wishing to make its departments truly occupational, with meaningful youth programs, will need a full-time coordinator. A director of vocational education programs should promote improved lines of communications through the proper application of area advisory councils. Local advisory committees that fully understand the needs of the community can best promote program changes and innovations which insure acceptance by the community.

The time has come to unite our vocational efforts in a comprehensive effort — united with all of the vocational disciplines, working together for a common end to make the youth of today employable citizens. ♦♦♦

CURRICULUM ORGANIZATION AND ARTICULATION IN VOCATIONAL EDUCATION



C. L. Nelson

Curtis L. Nelson
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Vocational Education is the process of training a person to perform the tasks and master the competencies that are necessary to obtain, hold and progress in a specified career or occupational job. Educators have long sought various methods of accomplishing this training. Some methods have been heralded as successful and others have been condemned as failures. Suburban Hennepin Technical Center of Minneapolis, Minnesota has perhaps challenged vocational instruction and curriculum preparation methods to its fullest extent and has launched a program of occupational, task-orientated, individualized instruction. Instructors having industry experience, with the aid of our active advisory committee as consultants, are perhaps the key to this success.

Let's take a close look at the steps that are taken in preparing a course curriculum:

I. Job/Occupation Description

In preparing a curriculum it is necessary that all persons involved have the same mental description of the job for which training is to be provided. It is necessary therefore to accurately describe the job or occupation in writing for complete clarification.

II. Student Characteristics

It is as important to have a common understanding of the type of student to be trained as it is to understand the occupation for which he is being trained. At Suburban Hennepin Technical Center, we have a high percentage of suburban people. The methods of training in agribusiness are different for these persons than for those from a rural area. The course is often planned to meet the needs of both. In writing the student characteristics, we include the physical and mental characteristics, educational background, and work experience as a general description of the student.

III. Course Blocking — (Competency listing)

With the occupation description in mind, we make a list of the competencies a person must possess for employment. The following is a course competency blocking for agribusiness:

- 1 ADVISE ON CROP PRODUCTION PROGRAMMING
 - 1-01 Identify principles of soil, fertilizer, and water in agriculture.

- 1-02 Identify plant science processes in plant growth.
 - 1-03 Provide advice on approved corn production practices.
 - 1-04 Provide advice on approved soybean production practices.
 - 1-05 Provide advice on approved grain production practices.
 - 1-06 Provide advice on approved forage production practices.
 - 1-07 Identify approved specialty crops production practices.
 - 1-08 Identify, operate, calibrate and maintain crop equipment.
 - 1-09 Provide advice on approved grain grading and merchandising practices.
 - 1-10 Provide advice on approved agricultural forest production practices.
 - 1-11 Identify, classify and advise control of agriculturally important insects.
 - 1-12 Identify seeds and advise their analysis and merchandising.
- 2 ADVISE ON LIVESTOCK PRODUCTION PROGRAMMING
- 2-01 Provide advice on approved dairy production practices.
 - 2-02 Provide advice on approved swine production practices.
 - 2-03 Provide advice on approved beef production practices.
 - 2-04 Provide advice on approved poultry production practices.
 - 2-05 Provide advice on approved sheep production practices.
 - 2-06 Provide advice on approved horsemanship practices.
 - 2-07 Identify approved practices in small animal production.
 - 2-08 Provide advice on livestock breeding.
 - 2-09 Provide advice on livestock nutrition.
- 3 APPLY BUSINESS PRINCIPLES
- 3-01 Identify and select a career in agribusiness.
 - 3-02 Apply approved business operation principles.
 - 3-03 Interpret accounting systems.
 - 3-04 Operate business machines.
 - 3-05 Apply correct business communication principles.
 - 3-06 Apply human relations principles.



Ken Ingvalson

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(Concluded on next page)

(Nelson—from page 57)

- 3-07 Identify practices and processes of domestic and international trade.
- 3-08 Apply practices of State and Federal agricultural product laws.
- 3-09 Perform business mathematical functions.
- 3-10 Perform practices of farm accounting.
- 3-11 Identify practices and processes of sales and merchandising.

4 PERFORM MISCELLANEOUS OPERATIONS

- 4-01 Operate basic gas and electric welder.
- 4-02 Operate and maintain a simple gasoline engine.
- 4-03 Understand basic principles of a standard electrical service.
- 4-04 Read blueprints and lay out simple draft of given agricultural building or equipment programs.
- 4-05 Perform functions of land measurement and surveying.

A. Task Listing

After the course competency blocking is done, it is necessary to make a list of the tasks an employee will perform under each competency.

B. Task Detailing

After listing the tasks, it is now necessary to do a task analysis. Under each task is listed the steps in performing the task in terms of "doing" and "knowing" that which must be done in performing the task.

C. Performance Objectives

General performance objectives are written for each of the blocks (competencies). A specific performance objective is written for each of the tasks.

IV. Pre-testing

Pre-testing is necessary to evaluate a student before beginning the "study pak." If the student is competent in an area, it is senseless for him to repeat the learning process. This is only repetitive and a time waster. An instrument is prepared to pre-test a student's skills before he is given the "study pak" or is exempt if he already possesses the competency.

V. Preparation of the individual "learning pak."

Upon completion of the preliminary course blocking, task listing, task analysis, and performance objectives writing; the preparation of the "learning pak" becomes relatively simple. Each unit block may become a "learning pak" with each task a separate segment. Each "doing" and "knowing" listing must then have a learning activity. It is necessary to have all types of media possible in teaching the skill.

Types of media might be any one of the following:

1. Actual performance of the task. (shop, internship as on-the-job training)
2. Simulation — an activity that is as close to the actual job as possible.
3. Observation — field trips, demonstrations, films, slides, sound-on-slide, video tape or other types of audio-visual media.
4. Lecture — discussion seminars, speakers or consultants.
5. Reading.
6. Job sheets and other learning exercises.

These activities are defined with detailed planning and clarity. A student who loses direction loses

motivation. "Learning paks" can be prepared with variable content, a basic unit plus in-depth learning activities for the student who prefers to delve deeper into the subject.

Individualized Instruction

Complete individualized instruction involves variable content of "learning paks," variable time for students to complete each "learning pak," variable time of entry into the course and variable time of exit. It should be obvious that to involve the class in complete individualized study before complete course preparation is done, can be chaos. Until all units are written, media prepared, resources and references available, lab activities ready, and all other learning activities prepared and available for the student; it is wise to hold the class together using the "learning pak" with variable content per student and constant time.

Reporting and evaluation

With this system of vocational instruction, all work is evaluated and graded. Some students may require more time to master a measurable objective than others. The so-called report card is a list of competencies. The student is signed-off as certified as he meets the requirements of each competency. He is also given a grade to indicate the degree of skill obtained. This is listed on his certificate or diploma of work completed.

Articulation

A vocational course may be offered as a secondary, post-secondary or an adult course, using the same "learning paks." Articulation is thus accomplished by completion of tasks, competencies or performance objectives, as they are listed on the certificate or diploma and signed-off or certified by an instructor's initials. When the task is completed, it is not necessary to repeat it in an organized system of job oriented, individualized vocational instruction for career training.

Thus, a student may attend our school as a secondary student and complete a portion of each PAK (Unit) or may complete specific units in their entirety. When this is accomplished, he is issued his certificate of accomplishment for that particular competency. He may then choose not to attend the post-secondary course, but return one to five or even more years later. He can return with his certificate, show this to his instructor, and continue his educational experience from the point or degree he previously attained.

He may also attend secondary agribusiness, choose to attend post-secondary after completing the secondary course, and come in at an advanced level, thus completing the curriculum in a much shorter period of time; or he may desire to go in depth in each area of his choice.

Should a student drop out of school for any reasons before completing his post-secondary curriculum, he may return as an adult education evening student and continue where he left off, or even up-date himself by in-depth study in specific areas. We are striving to assist each and every student to attain the degree of competency he set as his goal.

An Extra Dimension

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an attitude of "constructive discontent" towards situations as they exist — a constant desire to improve.

An increase in abilities associated with creativity, especially the ability to produce quality ideas and original ideas as leads to solutions of problems.

The person (student or teacher) who fails to use his or her creative potential can become highly frustrated, perhaps without even knowing why. In extreme cases, this frustration can cause the individual to become mentally ill. For total physical, mental, and emotional health it is necessary for any man or woman to at least come reasonably close to reaching his or her creative potential. Creative problem-solving can be a powerful tool for doing so.

According to the noted British scientist Fred Hoyle, "The nation that neglects creative thought today will assuredly have its nose ground into the dust of tomorrow." The same probably could be said of any profession, including agricultural education.

Dr. E. Paul Torrance has listed the following guiding principles for teachers to use in developing creative thinking:³

Value creative thinking. Make students more sensitive to environmental stimuli. Encourage manipulation of objects and ideas. Teach how to test each idea systematically.

Develop tolerance of new ideas. Beware of forcing a set pattern. Develop a creative classroom atmosphere. Teach the student to value his or her creative thinking. Teach skills for avoiding peer sanctions.

Give information about the creative process. Dispel the sense of awe of masterpieces. Encourage and evaluate self-initiated learning.

Create "thorns in the flesh." Create necessities for creative thinking.

Make available the resources for working out ideas. Encourage the habit of working out the full implication of ideas. Develop constructive criticism — not just criticism. Encourage acquisition of knowledge in a variety of fields. Develop adventurous-spirit — both teachers and students.

Effective creative problem-solving emphasizes practical actions. Anyone who wishes to become proficient in creative problem-solving, or simply to investigate it further, may decide to consider one or more of the following actions:

1. Write the author of this article for additional information. Ask for answers to specific questions. Share creative experiences. If you have not already done so, answer the following question: "What is the most creative thing you've ever done?"
2. Read the references listed for this article and think about what they might have to offer for your life. Try out some of the ideas which seem promising and see what happens.
3. Determine if your local library is subscribing to *The Journal of Creative Behavior*. If it is, read the articles of greatest interest to you. If the library is not subscribing to this quarterly publication, request that a subscription be started. A one year subscription costs \$9.00. A single copy is \$3.00. Address all communications to the Managing Editor, *Journal of Creative Behavior*, State University College at Buffalo, 1300 Elmwood Avenue, Buffalo, New York 14222.
4. Send for Volume 8, Number 1, First Quarter 1974 issue of *The*

(Concluded on page 70)

The difficult problems all of us encounter from time to time often are not readily solved by conventional approaches. Creative problem-solving can provide the extra dimension needed for attaining satisfactory solutions to "impossible problems." Completion of a good creative problem-solving course can help an individual develop attitudes and abilities that will enable him or her to have a good chance of meeting any future challenge successfully.¹

Change is more rapid now than ever. No person can foresee exactly what specific knowledge he or she will need five or ten years from now to meet life's problems. The techniques, processes, and related activities of creative problem-solving should enable anyone to apply present and future knowledge and experience in the new ways needed to solve problems caused by rapid change.

Specific attitudes and abilities promoted by creative problem-solving courses are:²

An attitude of self-confidence in each participant's ability to be deliberately creative.

A strong motivation for the participant to utilize his or her creative potential.

An open-mindedness to the ideas of others.

A greater expansion of the participant's curiosity — an awareness of the excitement and challenges in life.

A consciousness of the vital importance of creative effort — in business, in the arts, in the professions, in scientific and technical pursuits, and in personal living.

A heightened sensitivity to the problems that surround us all —

¹Information about four creative problem-solving courses held each year can be obtained upon request from the Creative Education Foundation, State University College at Buffalo, Chase Hall, 1300 Elmwood Avenue, Buffalo, New York 14222.

²Torrance, Sidney J. *Creative Behavior Workbook*. New York: Charles Scribner's Sons, 1967. pp. 1 and

³Parnes, Sidney J., and Harding, Harold F. *A Source Book for Creative Thinking*. New York: Charles Scribner's Sons, 1962. pp. 17, 19, and 46.

Governance System of Spoon River College

Carl J. McCausland*



C. J. McCausland

Since World War II there has been an ever-increasing rate of erosion in the administration-faculty relationships in American educational institutions. Teachers have changed from submissiveness to various degrees of aggressiveness. The generally accepted view that the entire school community is working toward a goal of providing the best education possible with the resources available has been replaced with a view that each segment of the school community is "out to get" the other segment. This has been characterized by student uprisings, faculty strikes and administrative police action. The degree of this adversary relationship varies, of course, from one educational institution to another, but it exists in almost every school in the country.

In order to reverse the trend of distrust and ill will, it is necessary to break down the barrier called the "chain of command." School administration was operated on a governance system that could be likened to the military model. The school board hired the administrator and told him to run the school; he in turn gave orders to the faculty who were expected to give orders to the students. The line of communication was downward through the chain of command. It was not ethical and often it was dangerous for

the person at the lower end of the command to try to circumvent his superior and to communicate back to the top. This governance system operated on the precept that a person was motivated for the most part by force.

In relation to this idea, McGregor suggests two views of human behavior; Theory X and Theory Y.¹ The view that fits the organization based on the military model or chain of command is called Theory X and is exemplified by five motivational characteristics which can be summarized in such a way as to describe the individual as a highly materialistic person who has to be driven to his work. He must be thoroughly supervised and motivated by a system of punishment and rewards in order to get from him a minimum performance.

It is obvious that this attitude toward employees by management causes friction and has created an adversary relationship that is detrimental to the institution. Theory Y, on the other hand, lists five characteristics of human behavior almost opposite to Theory X. If we are to adopt Theory Y, then we believe that the individual is not primarily materialistic, but that after his basic material needs are met, he is motivated by a sense of achievement and self-worth. He will seek to maximize his efforts if given the assurance by management that he is valued as an individual and given a method of self-evaluation.

If we subscribe to this theory for ourselves, then we must also be willing to adopt a compatible attitude toward

others whether they be students, faculty, classified personnel, administrators, school-board members or citizens in the community who support the school system. If enough people in these groups are willing to adopt this attitudinal change, then the school system is ready to begin moving in the direction of "participatory governance."

The Theory Y concept of the human behavior and human worth is in keeping with the Agricultural Teachers' Creed and that part of the FFA ceremony that states that we are "here" to practice brotherhood, honor rural opportunities and develop those qualities of leadership which a Future Farmer should possess." Agricultural teachers have been teaching this response for many years and that philosophy is firmly entrenched in each teacher and student who has become familiar with it. People with this kind of philosophy can and should become instrumental in improving the governance structure in their own educational institutions.

Spoon River College became aware of a participatory governance system through a summer seminar conducted by Dr. Richard D. Richardson, Jr. and Dr. Louis W. Bender, who outlined a governance structure that would work on the basis of Theory Y. After the seminar a symposium of students, faculty, administrators and a board member began a study using Richardson, Blocker and Bender's text *Governance for the Two Year College* as a guide.²

During the planning discussions, the following functional characteristics began to surface as desirable traits of the new governance system:

1. McGregor, Douglas. *The Human Side of Enterprise*. New York: McGraw-Hill, 1960, pp33-53.

2. Richard C. Richardson, Jr., Clyde E. Blocker, Louis W. Bender *Governance for the Two Year College* Prentice Hall, Inc. New Jersey 1972.

(McCausland—from page 60)

1. There must be open and honest communication among all segments of the college community.

2. Citizens' groups need to be involved in the process.

3. A definite representation must be established for all segments of the college community. The segments are defined as a) students, b) faculty, c) administration, d) classified personnel, and e) citizens' advisory council.

4. All administrators should be members in order that they would better understand the rationale behind any proposals and would better be able to implement new ideas.

5. All other representatives must be chosen from their own groups. For example, student representatives would be selected by the student body in any manner that the students desired; faculty representatives would be selected by the faculty association; classified personnel, which includes all college employees other than faculty and administrators, would be selected by their organization. The Citizens' Advisory Council, made up of representatives within the college district, would make their own selections.

6. The above groups might withdraw and replace representatives, and the governance body might reject certain members for good cause and request replacements.

7. An individual needs assurance that there will be no retaliation because of the presentation of an unpopular proposal or strong opposition to a popular proposal.

8. Evaluative discussion must be centered on ideas and proposals, not on personalities.

9. The board must be kept informed of all proceedings by printed minutes of all meetings and by open invitations to attend all meetings. In addition, board members may have a voice in meetings but may not vote.

10. Proposals by the governance body must go to the chief administrator who, in turn, will present the proposals to the board. The chief administrator may or may not support the proposal. His presentation to the board may be accompanied by written or oral rationale for his particular stand.

11. If a proposal passes through the governance system with some opposition, the minority group has full right to present to the board a minority report.

12. All proposals which are acted on by the governance system must go to the board with the minority report unless the proposals are unanimously defeated by the system.

13. There needs to be a committee system to research problems and proposals for presentation to the governance body.

14. The Spoon River College Board of Trustees must be recognized as the only legally constituted body which may adopt or reject any and all proposals.

Four institutional committees have been established which hold monthly meetings and report to the All College Council prototype. Minutes of all meetings are distributed to the Board and are made available to anyone interested. These committees are as follows:

Curriculum Committee — to be chaired by a faculty member

Academic Affairs Committee — to be chaired by a faculty member

Instructional Resources Committee — to be chaired by a faculty member

Student and Cultural Affairs Committee — to be chaired by a student

A definite student, faculty and administrative representation is assigned to each committee and presidential appointments might include classified personnel or Advisory-Council members. Each committee elects its own chairperson. The chairperson of each committee serves on the All College Council. Other members assigned to the All College Council because of their offices are the President of the Student Senate and the President of the Faculty Organization. This then leaves six faculty members, eight students, two classified personnel and three advisory council members to be chosen by their respective organizations.

With all procedures written into a set of by-laws, the All College Council prototype presented to the board the entire participatory governance system and it was adopted unanimously. Some of the obvious advantages to the system are the following:

1. Anyone in the college community has the right to introduce policy or policy revision into the governance system. This may be accomplished by contacting a member of the appropriate committee or a member of the All College Council.

2. A proposal to the board, with less than unanimous support, must be accompanied by a minority report. Those in the minority are urged to prepare the report, and if they desire, may present that report at a board meeting.

3. The Chairman of the All College Council has been given the opportunity and responsibility of reporting progress at each board meeting. The chairman is also asked to make his own presentation of proposals for board adoption.

4. The chairman and other All College Council members have been urged to attend board committee meetings for the purpose of contributing to the discussion and thereby influencing board decisions.

5. There have been several student and faculty concerns given support by the administration and board that would not have been considered without the new governance system.

6. Those persons involved in the formation and functioning of the governance system have an improved relationship with each other and particularly with members of the board.

7. Members of the board have expressed appreciation for the opportunity to become better acquainted with college personnel and their concerns.

8. The attitude of condescension between various segments of college personnel is disappearing in meetings and in general conversation.

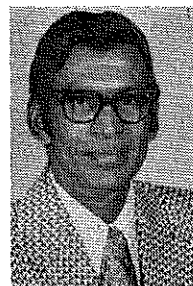
The new governance system has not, however, cured all the ills of governance at Spoon River College. There are faculty members and students who feel that the system has not accomplished anything significant up to this time. The process is slow and cumbersome and this frustrates some who believe that their concerns should be resolved immediately. There will always be some people who believe that unless the board grants their request, they have not been heard.

The participatory governance system is not "utopia," but it is a vehicle that can reverse a trend of adversary relationships that could eventually destroy all the good features of American public education. Under the new system it has been possible to use skills in parliamentary procedure and in discussion leadership to help formulate a governance document and to staff a governance body that is making obvious contributions toward the improvement of inter-personnel relationships.

AN ADDITIONAL FACILITY - -

An FFA Project

Mohamad W. Khan
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Every teacher wishes frequently for better or additional facilities. At no time will one's situation ever be adequate. The persistent teacher however, rather than brooding or complaining, may begin to compensate and, if possible, begin by expanding on his own. Today, with tight budgets, it is almost impossible to have local school boards sanction the building of new facilities. Because of the cost of materials and the exorbitant costs of labor, additional facilities often seem out of reach.

Yet, one alternative might be suggested in the example set by the Solon Community School. In this case, the school bond for new facilities had been defeated, causing a temporary closing down of the Vocational Agriculture Department. However, with definite plans for reconstruction of various curricula, the Vo-Ag program has been reinstated. The problem of additional facilities was not completely solved, but with careful planning, alternatives were developed that added to the present system without a major bond issue.

The first major change occurred when the board members, administrators, and the Vo-Ag instructor convened at a regular meeting to discuss the possibility of building a greenhouse. A greenhouse — typical reaction of "John Public." Of course, the big question is, how much will it cost? The cost can be from \$100 to \$10,000, depending on what the school can afford. Certainly, any proposals to a school board must be convincing. The proposal to the Solon School Board involved, not only the type of building and curriculum, but the cost of construction. The estimated cost of materials for the construction of a 25' x 48' fiberglass greenhouse was \$2,000



Mohamad W. Khan with students in the facility they constructed at Solon, Iowa. Khan is a native of the Republic of Guyana, formerly British Guiana, located on the northeast coast of South America.

with an additional \$1,400 for heating, plumbing and electricity. Needless to say, another \$1,500 would have to be paid for labor involved in actual construction.

These were the facts, and with the facts in mind, knowing that the school board would not sanction a \$4,500-\$5,000 greenhouse for a new teacher, I began my alternative. I quickly volunteered the Solon FFA Chapter to construct the building as a school project. This project not only saved the school approximately \$1,500, but also publicized the FFA, and most of all, brought the community closer to the school. Construction began in the fall of 1972 with pick-axes, shovels, and spades. Despite public opinion, boredom, calluses, and wretched weather conditions, progress began slowly. It was not until after Christmas vacation that the building was near completion. By the second semester, as things began to take shape, construction encountered

a slow down because of materials. Funds were almost exhausted and so was the supply of lumber for the construction of benches, flats, and other indoor facilities. Determined to have a completed project, the FFA members began salvaging lumber from old dairy barns, and electrical light poles. Soon enough, lumber was available to complete the interior of the new Vo-Ag facility.

Still other problems arose. But with a membership of 33, the FFA Chapter had a solution. Soil for instance, was difficult to acquire in the middle of winter. This problem also was easily solved when the soil was obtained after a grave was dug at the cemetery — (an even happier situation for the grave-diggers). Plant materials, pots, flats and similar types of materials were obtained by donations from students, members of the community or local institutions.

(Concluded on page 70)

A STRATEGY FOR ESTABLISHING A SCHOOL-BASED JOB PLACEMENT PROGRAM

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J. G. Cheek

Most vocational teachers agree that one of the primary goals of vocational education is training students for employment. Many school districts, however, do not provide a formally organized job placement program for vocational students leaving school and seeking employment. What if you, the vocational agriculture teacher, assumed the role of change agent and sought to introduce the innovation of a school-based job placement program into your school district? How could you accomplish this change? What would be your strategy? The following is a step-by-step description of a strategy that you could use in bringing about this change in your school district.

Step 1. Contacting the School Administrators. The initial phase of the change strategy involves contacting the school administrators to present a rationale for a job placement program for vocational education students and to seek approval to investigate the need for a job placement program in the school district. Using this approach, school administrators would be informed from the very beginning of the program. Doing so also gives the administrators a stake in the outcome.

It would not be appropriate to have all of the data establishing a need for a job placement program gathered at this time because the change process should be collaborative in nature, with you the change agent forming a partnership with the school system and the community in planning the change.

Step 2. Creating Awareness. Next, create an awareness of the potential benefits of a school-based job placement program among the faculty and the community. One method of creating awareness involves scheduling a person, already directly involved with a school-based job placement program, to speak on the topic of job placement for vocational education students at a faculty meeting, in-service training program, or similar event. This technique would produce a general awareness of the job placement concept and would stimulate thought concerning the implications of such a program in the school district.

A special effort should be made to allow all vocational education teachers in the district and the speaker an opportunity to visit together informally. This technique would provide the vocational teachers additional information and clarification concerning this innovation. Additionally, it should aid in convincing the vocational teachers that a school-based job placement program for vocational education students would help each of their programs.

Further support for this kind of program can be developed by having representatives of the local mass media interview this speaker and other persons already involved in job placement programs concerning the concept of job placement. This technique could create an awareness of the innovation among businesses, employers, industries, parents, and students. The mass media coverage should also reinforce the concept in the minds of the school district's personnel.

Step 3. Determining the Impact of the Innovation. This may be done by organizing a committee to determine the potential impact of such a job placement program on vocational education students and the community. Committee membership should include vocational teachers, school counselors, school administrators, representatives of the vocational education advisory committees, state employment agency personnel, businessmen, vocational education students and others. Bice¹ cautioned that involving only opinion leaders in the change process should be practiced with caution. Therefore, this committee should be composed of opinion leaders as well as non-opinion leaders.

This committee should study the potential impact of a school-based job placement program by:

(Concluded on next page)

(Cheek—from previous page)

1. Studying vocational education follow-up reports to determine the percentage of students placed in employment commensurate with their vocational training.
2. Interviewing former vocational education students concerning their reactions to the job placement program concept and to determine if such a program would have been beneficial to them.
3. Interviewing present vocational education students concerning their reactions to a job placement program.
4. Interviewing state employment commission personnel and employers concerning their willingness to participate in a job placement program.
5. Collecting other data deemed necessary.

At the conclusion of the committee's work, arrange a formal meeting for vocational education personnel, school counselors, and school administrators. The committee should present its findings and recommendations at this meeting.

Real life examples, using local persons, should be used to dramatize the need for a school-based job placement program and to help persuade the school personnel that the need is real. Another technique to illustrate the potential impact of a job placement program would involve describing the discrepancies between the present situation and what it could be.

The committee's work could also serve further to convince the vocational teachers, counselors, and administrators of their capability of implementing this change. One way of doing this would involve describing the experiences of a similar school district that has successfully adopted a school-based job placement program.

Step 4. *Developing a School-Based Job Placement Program and Gaining Its Acceptance.* A committee, similar in composition to the one described in step three, can be the vehicle by which a model for the school-based job placement program can be developed. Using this approach, a program oriented toward the needs of the school, the vocational education students, and the community would result. This local orientation is vital when we consider that Rogers and Shoemaker² concluded

that the success of a change agent in introducing an innovation is positively related to the degree to which the innovation is client oriented and compatible with the client's needs.

Various models for school-based job placement programs are available in the literature, such as the ones described by Allen³, Gingerich⁴, and Buckingham⁵. This latter article describes a school-based job placement program in the Baltimore Public Schools which began as an outgrowth of guidance and counseling in 1928. These models and others are guides around which the school-based job placement program could be developed.

After the tentative job placement program has been developed it should then be presented to all vocational teachers, school counselors, and school administrators for their comments and suggestions. Considering these recommendations, then develop and present the final model to the superintendent and board of education for final action. If board action is favorable, the task still remains of insuring school and community acceptance of the job placement program.

The major emphasis at this stage of the change strategy is persuading vocational teachers, vocational students, and the community that the job placement program is workable. Strategies to be employed by the change agent and the job placement coordinator to help persuade the client system to adopt the innovation would include:

1. Contacting each vocational teacher to provide clarification and additional information concerning the job placement program.
2. Persuading each vocational teacher to discuss the potential benefits of the job placement program with his classes.
3. Contacting the state employment commission to solicit assistance with the job placement program.
4. Contacting employers concerning the job placement program and securing assurances of their willingness to participate in the program.
5. Contacting each vocational education advisory committee concerning the job placement program and securing their active participation.

Do not be surprised if everyone does not participate in the program initially because different adoptor categories, ranging from innovator and early

adoptor to laggard, will probably exist in the school district. However, it may be your responsibility or that of the person given responsibility for the job placement program to attempt to get people in the adoptor categories to accept the program as rapidly as possible in order to achieve its adoption.

Step 5. *Continuing the Job Placement Program Once Initiated.* The person responsible for the program's operation needs to provide evidence concerning the effectiveness of the job placement program to the vocational teachers, school administration, employers, and the community. Evidence concerning the number of students placed on jobs, type of employment received, and present job openings should provide reinforcement to those who have adopted the innovation and would stimulate continued participation. Similar information should be provided to non-adoptors to aid in persuading them to adopt the innovation.

For example, one activity prior to the close of school might be to arrange a meeting of vocational teachers, school administrators, representatives of the vocational education advisory committees, state employment agency personnel, businessmen, and others. The purposes of this meeting would be to present an interim report concerning the success of the job placement program and to receive recommendations for improving and modifying the program. After this meeting, you should become less involved in the job placement program and the job placement coordinator should assume the major role for the program.

In the subsequent years the job placement coordinator should continually seek information concerning changes needed in the job placement program and change the program to meet these needs. Also he should continue to provide evidence indicating the effectiveness of the program.

Footnotes

¹G. R. Bice, *Working With Opinion Leaders to Accelerate Change in Vocational-Technical Education*, (Columbus, Ohio: The Center for Vocational-Technical Education, The Ohio State University, 1970).

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³T. R. Allen, Jr., *Job Placement Coordinator's Handbook*, (Huntington, West Virginia: Department of Vocational Technical Education, 1972).

⁴G. E. Gingerich, *School-Based Job Placement Service Model: Phase I Planning*, (Harrisburg, Pennsylvania Research Coordination Unit for Vocational Education).

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Reviving Interest in Adult Education



J. C. Atherton

J. C. Atherton
Teacher Educator, Louisiana

and

J. C. Simmons
Supervisor, Louisiana



J. C. Simmons

One of the purposes of the school is to develop mature, civic-minded individuals who are able to fit into modern society and contribute to its ongoing. It seems essential that youth and adults be led to understand the workings of our social system and to actively participate in present day events which affect one's life and ultimately the nation. Solving of current problems, material and social, is essential to the maturation of the individual. One prepares for tomorrow by involvement successfully in today's activities.

Out-of-school classes for young and adult farmers have been traditionally a part of the community program of the teachers of vocational agriculture in Louisiana. For many years this instruction was related directly to farming in its broad application. Later it expanded to include problems and issues of many types which the residents of the community face.

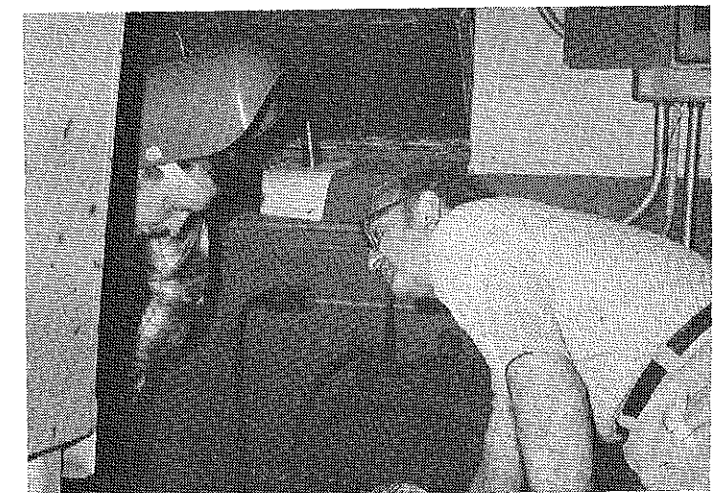
In recent years there had been a steady decline in the number of adult classes with a corresponding decrease in enrollments. It appeared that this phase of the educational program was ailing. There was no evidence of an acute attack of any kind, but still the out-of-school program seemed lethargic and listless. This was an indication that remedial measures were needed. Many reasons were put forth for the decline in enrollments and interest in this phase of the program.

A detailed examination of the situation revealed that the causes for decreasing emphasis on adult education stemmed from a variety of things. Prominent among these was a lack of understanding of what comprised a complete educational program in agriculture on the part of the school administration. Consequently there was little encouragement from this source given to the teacher to expend time, effort, and resources in this area. It follows naturally that where interest lags the activity becomes neglected. There is a proverb which says that the crying child is the one who receives attention.

It was felt that the work of the teacher is much more satisfying when it is shared by others of the community. Usually it is much more comprehensive in scope also than when the instructor tries to do it all by himself. All persons are limited in time, vision, and talent. The combining of the thoughts and actions of several individuals makes it possible for more work to be accomplished and for the varied talents of different ones to be put to use in the fulfillment of the broad task of adult education. The variety of activities which may be carried out are multiplied and the like-



Billy Ray Crain, Vocational Agriculture teacher at Thomas High School (La.) demonstrates a skill in electricity to one of his adult class students.



Charles Knight, Vocational Agriculture teacher at Franklinton High School (La.), assists one of his adult students in welding.

(Concluded on page 67)



Jerry W. Berg
FBPA Teacher
Dalton, Ohio

Jerry W. Berg

THE COMPUTER IS FARM MACHINERY

The computer should be considered to be a piece of agricultural equipment the same as a tractor, plow or combine. It definitely has a place in the operation of the commercial farm business. Many states now have a farm records program which includes a computerized year-end analysis. This is a good place to begin when introducing a farmer to the many uses of computers. Most farmers need some improvement in their record keeping. If you can give them some help on the records then it becomes easier to get them to use a computer for an analysis. In Ohio, the records program is called Farm Business Planning and Analysis or F.B.P.A. In 1971, Dalton High School added the FBPA program to the Vo-Ag department as a full-time adult unit.

I've found that we have four areas of responsibility when involving a farmer in a computer program. First, we need to determine the need to use a computer. Second, we need to find a computer program which will solve the problem. Third, we need to assist the farmer with the input information, and fourth, we need to interpret the output. Those of us who work with computer print-outs in our speciality area become very familiar with them while most farmers find themselves lost in the many pages and calculations. To solve this problem, we have been using charts to illustrate and explain the information contained in the printout sheet.

Figure 1 is an example of the financial analysis chart that I will use

in group meetings and in talking with farmers individually. Each column of figures represents the values of 22 dairy farms in the Dalton FBPA program. In each column the figures are arranged with the most desirable at the top of the column and the least desirable at the bottom. I draw in the line which represents the group average before using the charts. Any figure above this line is above average and below is below average. At a group meeting I give each farmer his print-out sheet. With the use of an overhead projector, I show the farmers where each value is found on the print-out. Each farmer is given a copy of the financial chart and is asked to plot his values on the chart. When he is finished he will have a line drawn on

FIGURE 1
FINANCIAL ANALYSIS 1973

NET FARM INCOME	NET MARGIN	GROSS FARM INCOME	TOTAL CAPITAL INVESTMENT	RETURN TO CAPITAL	GROSS RATIO	OPERATING RATIO	OVERHEAD RATIO	GROSS INCOME PER MAN	OVERHEAD PER DAY	OPERATING EXPENSE PER DAY	RECEIPT - EXPENSE RATIO
58989	55.0	241557	394237	40.8	211.4	22.6	17.1	59684	27.48	33.70	2.36
45354	50.1	165856	368554	39.2	123.0	26.2	20.2	49703	27.54	43.81	2.26
40355	44.3	106598	296216	37.6	121.8	28.2	22.4	42830	28.40	49.35	2.16
39664	37.2	106238	281460	28.1	104.4	30.8	23.0	40402	30.45	52.31	2.05
38337	36.4	103843	259598	20.7	101.5	33.2	23.3	38185	30.59	54.13	1.78
36246	30.9	101901	190428	13.5	83.7	36.6	23.3	34955	35.88	58.04	1.67
33145	30.6	87692	171510	12.5	67.8	40.6	23.6	33874	38.72	67.13	1.60
27019	30.2	75107	165427	12.0	67.2	42.2	23.7	32585	39.20	74.69	1.44
26345	29.7	65102	159842	11.5	58.9	45.2	24.9	31856	39.27	75.11	1.43
25697	28.7	63006	150149	10.2	46.1	45.9	24.9	29998	39.83	75.71	1.38
25106	27.9	58376	144483	9.7	42.1	46.1	25.9	29739	40.87	77.51	1.38
24090	24.2	57350	130483	7.5	41.0	46.2	27.1	29077	45.45	77.67	1.33
21963	24.1	56159	124058	4.9	39.6	46.4	29.2	28606	47.86	83.39	1.32
20751	22.8	47188	121069	4.8	39.4	47.7	29.5	27114	48.97	94.83	1.29
14822	18.9	46815	111369	4.5	37.9	50.1	30.3	24117	58.70	136.48	1.28
13897	15.5	45053	98283	3.5	35.8	50.8	33.2	23659	65.63	152.91	1.25
13368	15.3	44311	95219	2.1	34.4	52.0	33.6	22370	71.33	155.44	1.24
12208	12.6	43798	62035	2.0	33.9	53.6	34.6	21407	85.55	159.66	1.20
10999	12.0	38731	47906	2.0	30.0	58.8	36.8	19994	91.22	168.00	1.18
10769	5.5	34070	38045	1.2	27.2	61.4	38.9	16749	97.97	265.04	1.18
1094	4.8	33693	37071	-6.1	23.7	61.5	48.6	15808	116.83	278.82	1.17
-748	-8.7	28640	20709	-14.2	21.0	68.1	63.5	15315	154.26	483.50	1.08

DALTON HIGH SCHOOL FARM BUSINESS PLANNING AND ANALYSIS DAIRY RECORDS

Berg—(from previous page)

the chart and will be able to see the relationship of his values to the average of the group. A farmer can look at his chart and make the following comparisons: 1. He can compare his farm to the average of the group, 2. Farmers that have been in the program for more than one year will have other years records to compare to, 3. By having the range of values on the chart, a farmer can see where he is in relation to all others in the group, 4. By using state summaries, farmers can compare their values to state-wide values. Although all the figures for the 22 farms are on the chart, the charts are still confidential. Other than their own figures, farmers are never quite sure who the other figures belong to. This is very important.

In addition to the financial chart we prepare a dairy analysis chart from the dairy enterprise analysis on the print-out. Many times an explanation can be found while reviewing the dairy

charts for weaknesses or problems suspected in the financial end of the business. For example: In reviewing the financial chart we find that operating expenses are high. Then we discover on the dairy chart that the dairyman's feed costs are one of the highest in the group. We further discover that his purchased feed for 100 pounds of milk is high. Although feed may not be the only contributing factor in the high expenses, but it is a place to start making some changes.

As I spend more time with a farmer on an individual basis, other uses for the computer become evident. When reviewing the dairy chart, I check the ration of dairymen with low milk production. If there is a possibility of producing more milk by changing feeds, I will take forage and grain samples for testing. Then the test results are fed into the computer for evaluation and ration balancing. This service is available through Ohio State University's Ration Evaluation program. If the cost of producing milk is

higher than the dairyman feels it should be, we can submit his choice of feeds for the computer to calculate a least cost ration.

When a farmer accepts the computer as a piece of farm equipment the uses and value to him are unlimited. As teachers, our responsibility is learning of the farmers problems and then determining if a computer program will help. It is not enough, however, to simply rely on a computer for all the answers. We must know the farmer and his operation. An understanding of the farmer's attitude and goals for his business is important. I feel we should know the operational history of the farm. We need to know the situation before advising a farmer about a computer program. Computers are here to stay and are a growing part of agriculture. We need to use them to the fullest, most intelligent use. Today's farmer must be thinking ten or fifteen years in the future. Management is the key and an indispensable management tool is the computer. ♦♦♦

(Atherton & Simmons—from page 65)

likelihood of important elements of it being passed over by design or lack of foresight are lessened. More careful attention can be given to each aspect of the program.

Common interest and support of the program are secured and maintained through the involvement of others in its ongoing at the various levels of planning, implementation, evaluation, and replanning. Through utilization of the varied abilities of all, talent far beyond the capacity of one person is brought to bear on the problems at hand.

Community acceptance is at least partially the results of understanding and involvement. There is a tendency to be against things one does not comprehend. Likewise it is natural for one to support that of which he is a part.

It was felt also that as a teacher of agriculture, one has been honored by the community in that he was chosen to lead the youth and some adults in the development of skills and knowledge that will be useful to them in securing employment and advancing in their chosen profession.

In carrying the above thoughts to a logical conclusion the teacher, trainers, state supervisory personnel and a representation of the teachers of agriculture from throughout the state concluded that in-service training offered a solution. This approach is not new by any means, however in this instance it had one unique feature. Administrative personnel on the local level were included in the class along with teachers of agriculture. They included assistant parish (county) superintendents of schools, parish supervisors and high school principals. Opportunity was provided for these school administrators to familiarize themselves with not only the out-of-school instructional program, but with the total community program of agricultural education.

Activities of the students included:

1. Conducting a community survey in the individual teacher's school community.
 - a. Development of the data gathering instrument in class.
 - b. Survey of the school community. In this activity the school administrators paired with the local teacher of agriculture and both made the personal visits to secure the information.
 - c. Compilation of the data and interpretation.
2. Compiling a list of resource persons who may be used in an adult instruction program.
3. Identifying prospective class members.
4. Determining the training needs in agriculture of the community.
5. Arranging agricultural problems into units of instruction.
6. Developing instructional units.
7. Developing a course calendar.
8. Determining instructional resources that were available.
9. Planning for the organization and conducting of out-of-school classes.

Several class members were amazed that the training needs and opportunities were so great. One high school principal at the end of the year, commented that there had been no adult classes in his school community for years but there would be at least two classes the following year.

In the area where this class was held, there has been a marked increase in the number of adult classes held and also in student enrollment. ♦♦♦

Donald D. Dilgard
Ag. Supervisor
Lorain Co. Voc. Center
Oberlin, Ohio

Agricultural-Industrial Equipment Course



D. D. Dilgard

Many agricultural-industrial equipment and service shops in vocational schools have been and are presently geared to production-type shops. In production orientated shops, one cannot teach the needed skills to meet the requirements of gainful employment.

The instructors at the Lorain County Vocational Center have worked closely with their advisory committee and other competent personnel in the area of agricultural mechanics. Together they have produced evidence of a need for change in the Agricultural-Industrial Equipment and Service Instruction System.

Lorain County Vocational Center has two units of Agricultural-Industrial Equipment and Service. The program provides high school juniors and seniors, sixteen years of age or older, with a two-year program (12 months each year) of technical and technically related instruction, laboratory experience, and cooperative work placement as preparation to gain entry-level employment.

The instructional system includes a study of the unique aspects of the agricultural-industrial equipment service industry, shop tool fundamentals, equipment assembly, engine and equipment mechanics, sales training areas, business management, human relations and citizenship traits essential to successfully seek employment and advance in the Agricultural-Industrial Equipment and Service Industry.

The FFA and related leadership training is a highly significant integral part of the program activities which aids agricultural education in making contributions to the guidance and total general educational development of pupils. The FFA and related leadership training permeates every aspect of the instructional program in agriculture.

The Junior Year Course

The Lorain County Vocational Center provided the Agricultural-Industrial Equipment and Service junior class adequate money to purchase used tractors of the same model. The student-tractor ratio is two students to one tractor. This allows for individualized, programmed instruction. Upon the completion of the instructional program, the tractors are returned to the local dealer to be sold.

To assure success of the Agricultural-Industrial Equipment and Service Instructional System, it is necessary to provide a curriculum which will provide each trainee with those competencies (knowledge, skills, attitudes) he will need while working in the dealership. During the junior year, each student is required to complete 540 hours in technical training and 270 hours in related courses. Math and science as it relates to Agricultural-Industrial Equipment and Service is

Advisory personnel recommend that competencies be taught to students in a programmed sequence rather than when the problems arise.

taught as an integral part of the instructional system. Each student spends 4½ hours per day, 5 days a week in the shop and classroom. The student earns 4 credits toward a high school diploma and a vocational certificate.

Technical courses include:

1. Laboratory Guidelines	5 hrs.
2. Laboratory Safety Instruction	15 hrs.
3. Basic Shop Skills	75 hrs.
4. Small Gas Engines	75 hrs.
5. Large Gas Engines (external systems)	220 hrs.
6. Equipment Assembly—Machine principles	60 hrs.
7. Production work	90 hrs.

During the summer between the 11th and 12th year, the incoming 12th grade students are placed in situations enabling them to gain experience with the field operational and functional processes of all agricultural equipment common to the area.

The Senior Year Course

The instructional system for the senior year focuses on the maintenance and repair of the modern tractor. Math and science as it relates to Agricultural-Industrial Equipment and Service is taught as an integral part of the instructional system. Each student spends 4½ hours per day, 5 days a week, in the shop and classroom. The student earns 4 credits toward a high school diploma and a vocational certificate.

Technical courses (540) hours include:

1. Engines (internal parts)	165 hrs.
2. Diesel Fuel Systems	35 hrs.
3. Hydraulic Basics	25 hrs.
4. Brakes	25 hrs.
5. Power Train Transmission	40 hrs.
6. Axles	30 hrs.
7. Rear Ends	35 hrs.
8. Job Opportunities	10 hrs.
9. Driving (tractor, truck, and loading)	25 hrs.
10. Leadership Training (as it relates to future employment)	15 hrs.
11. On-the-Job Placement (minimum)	135 hrs.

The related course instruction corresponds directly to the competencies planned in the laboratory activities, and account for 270 hours of additional training.

During the last 9 weeks of their senior program, students receive cooperative on-the-job experience in local agricultural equipment and service dealerships, with contractors, or on corporate farms for continuation in the "world of work."

Conclusion:

The Agricultural-Industrial Mechanics and Service Instructional System allows the instructors to change from a conventional curriculum to a more individualized programmed instruction. Advisory personnel recommended that competencies be taught to students in a programmed sequence rather than when the problems arise. In the senior instructional system, students apply the competencies learned in the junior year and begin to test, trouble shoot, and replace the defective parts.

The Lorain County Vocational Center Agricultural-Industrial Equipment and Service Instructional System is in progress and within a working reality.



H. R. Bradley

are some of the questions which teacher educators in Kansas have continued to ask.

To discuss the improvement of the Vocational Agriculture Student Teacher-Cooperative Teacher program in Kansas, the State Director of Agricultural Education and his staff joined together with the teacher education staff.

The result of these discussions was the developing of a funded project for the Identification and Development of the Role of Kansas Vocational Agriculture Cooperative Teachers in the Pre-service Student Teacher Program. The project was to be a one-week seminar for twenty vocational agriculture teachers who would receive a stipend which covered partial mileage, room, and board.

Objectives for the seminar were:

1. To improve the cooperative vocational agriculture teacher's skills in the agriculture education pre-service student teacher program.
2. To develop a cadre of outstanding cooperative teachers capable of developing and promoting innovative student teacher programs.
3. To assist and encourage the cooperative teacher in setting standards of attainment for his department, to act as a model department to the student teachers.
4. To develop a realistic plan for

A SEMINAR FOR COOPERATING TEACHERS IN KANSAS

Howard R. Bradley
Teacher Educator
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off-campus student teaching.

5. To prepare an instructional guide to be used by cooperative teachers.

Dr. Bennie Byler, teacher educator, Iowa State University, was invited to be a consultant for the first two days of the seminar. Specialists from the state staff, the Kansas State University teacher educator staff and other selected persons from the College of Education participated in the activities for the week.

Dr. Byler expressed to the future cooperating teachers that an opportunity to work with student teachers in agricultural education was a challenging and rewarding endeavor. He said that each young person who entered into student teaching would be asking himself—Can I do it? Will I be a good teacher? Can I conduct a good vo-ag program? Will I be a good FFA advisor? He emphasized that their experiences with cooperative teachers would help them establish a solid foundation that would help them chart a course for becoming competent teachers.

Participation from the group was obtained through the use of panels, group discussion, visual aids, and formal presentations by the specialists. Eleven topics received major emphasis. They were: (1) the school and the student teacher; (2) the instructional responsibilities of the cooperating teacher; (3) the student teacher and his relationship to the community; (4) a code of ethics for student teachers to follow; (5) student behavior and classroom management; (6) supervised work experience program; (7) the student teacher and the FFA program; (8) involvement of the student teacher in the out-of-school program; (9) the University Coordinator of Student Teaching and the relationship with

cooperating teachers and school districts; (10) the cooperating role of the university supervisor and the cooperative teacher; and (11) the question of reciprocal evaluation between student teachers and cooperating teachers.

The topics which were discussed became the nucleus for the guide which is in preparation as this article is being written. It will be in use by the cooperative teachers in the Fall of 1974.

There were additional recommendations made by the participants which tend to meet the objectives of the seminar.

1. It was expressed that a desirable policy for the selection of cooperative teaching centers would be those in which some of the qualified teachers had received their preparation from states other than Kansas.

2. In order to replenish and increase the cooperative teacher supply, young teachers entering the profession should be encouraged to prepare for the time when they would be eligible to supervise a student teacher (three years successful teaching experiences).

3. Consideration for cooperative teachers should be given to those exemplary teaching centers regardless of the distance from the university campus.

4. Participants generally agreed that the best of cooperative supervision could be maintained with supervision from both the Agricultural Education and Agricultural Mechanics staff members.

5. Our consultant (Dr. Byler) was of the opinion that small group evening meetings with the student teachers were highly desirable during their off-campus experiences.

This was the way Kansas cooperatively planned and proceeded to improve the preparation of cooperative teachers in vocational agriculture. ♦

Citrus -- The Money Fruit

J. Richard Franklin
Magruder High School
Montgomery County, Maryland

Has your FFA chapter ever been short of money? How many times have you tried selling flowers, candy, signs, or other items advertised to make your chapter wealthy? If your chapter is like mine, you probably have experienced these problems. I know this sounds like the beginning of a sales pitch and it is. My chapter and many other FFA Chapters in Maryland have found a solution to their problems. This solution is simply selling citrus fruit; oranges, tangelos, and grapefruits by the case.

How did we get started? How much money have we made? How hard is it to sell citrus fruit? How do we sell it? About four years ago, a representative from the Florida Citrus Commission visited the summer meeting of the Maryland Vocational Teachers' Association and gave us their sales pitch. They gave us facts on how chapters in Delaware and Ohio had sold the fruit and had made over \$1,000 at one time. They mentioned that we had to sell at least one truckload (about 950 cases — 4½ bushel each), but that this could be divided among three chapters if they were located close to each other. Well this scared us; we were afraid we might not sell all of it. Several of our chapters located close to each other tried selling the case lots of citrus during November with delivery the first week of December and it worked.

In the first year, our county sold one truckload and had many calls for more during the school year. Now four years later, we sold over 5,000 cases of citrus fruit before Christmas and now have started a Spring Citrus Sale because of the demand for fresh citrus fruit. We have the customers order the fruit and pay for it when it is picked up.



1974 Montgomery County, Maryland FFA citrus salespersons showing chapter accomplishments.

Nationally, FFA Chapters sold over 500,000 cases during 1973 and the Maryland FFA Chapters sold over 15,000 cases.

This past year another bonus came for us. The company we had been dealing with told us if we would coordinate the State through one order taken, they would give our State FFA Association five cents a case and would give each chapter selling at least one truckload a rebate of five cents a case. Because of our coordination this past year we presented our State FFA Association with a check of over \$500.00.

All of this sounds like roses, well we have had a few minor problems, but nothing of significance. One of our concerns has been that other groups such as service clubs, churches, etc. would affect our sales, but so far there has been no problem. We hope to increase our sales throughout the State and hope that others will find this fund raising activity successful. ◆◆◆

(Bristol—from page 59):

Journal of Creative Behavior, enclosing \$3.00. Read the following articles: "The Creative Personality and the Ideal Pupil Revisited," "1974-75 Calendar of Creative Problem-Solving Institutes and Graduate Courses," and "Creativity in Action: A Creative Problem-Solving Course." Decide how one or more of the ideas and/or facts presented can help you. Put it (them) into action in the best way you know how. Report the results to an appropriate person.

5. Locate and talk to someone who has attended a creative problem-solving institute or course, and find out what he or she thinks of the experience. If you are unable to find such a person, and are interested in carrying out this suggestion, write the author of this article and request the free mimeograph "One Major Effort — A Thousand Rewards — Diary."

6. Attend a creative problem-solving institute or course.

7. Become a member of the Creative Education Foundation.

Specialists believe that (to some degree) all individuals possess the abilities involved in being creative. They further agree that these abilities can be improved through education. It would seem to be the school's legitimate function to provide such training. The risks are minimal, and the rewards can be very great indeed. ◆◆◆

(Khan—from page 62)

The experiences gained from this project were rewarding and challenging. Rewarding because mistakes can be corrected in the future, and also the additional facility becomes not only an asset to the Vo-Ag program, but also an enhancement to progress in the entire community. Overcoming limited knowledge at the beginning, the high costs of labor and materials, and above all, inclement weather conditions, I found that the project was satisfying not only to myself, but to all the students who participated. Since the construction of this new facility, a brighter light shines on the Vo-Ag department at Solon Community School. ◆◆◆

BOOK REVIEWS

FARM FIELD MACHINERY by Marshall F. Finner, Madison, Wisconsin: American Printing and Publishing, Inc., 1973 Second Edition. 226 pages, Price \$5.15.

The second edition of *FARM FIELD MACHINERY* is an excellent reference and provides technical information in agricultural mechanics. The explanations, symbols, and formulas are well described and are used throughout the book. The illustrations and pictures are especially well done with vivid lines and photographic close-ups for the reader to envision the mechanical process. The text provides problem sets with answers at the end of each unit but is not designed as a workbook.

The format of each chapter is designed to provide information, adjustment details, functioning of parts, maintenance and safety, and problem sets. This format is well suited for teacher and student use.

Chapter titles are: Field Performance of Machines; Materials of Construction; Technical Mechanics; Power Transmission; Hydraulic Bearings; Moldboard Plows; Secondary Tillage; Row Crop Planters; Grain Drills and Grass Seeders; Field Sprayers; Calibration of Row Crop Planters, Grain Drills, and Fertilizer Spreaders; Mowers and Mower Conditioners; Forage Harvesters; Forage Blowers; Balers; Combines; and Corn Harvesting Equipment.

The technical nature of the book suggests an audience at the post-secondary level but wherever it is used, it provides long-needed information and materials that the curriculum organizer requires to fill his needs. All information is recent in terms of the rapid advancement of engineering technology in machinery design and production.

W. Edward Shipley
The Pennsylvania State University

DISEASES OF CROP PLANTS, by J. H. Western, Editor. New York: Halsted Press Division, John Wiley & Sons, Inc., 1971, 404 pp., \$33.00.

The increased production of food depends to a large extent on scientific advances and dissemination of this knowledge. One area of crop cultivation that deserves special attention is the study of plant diseases. In this book Professor Western has attempted to assemble the latest information on selected plant diseases and fungi through a team of plant pathologists.

In his first chapters, Mr. Western treats diseases in general, discussing disease assessment, seed pathology, chemical disease control, and breeding for resistance. In addition, one chapter is devoted to an overview of legislation and crop health. However, much of this chapter is irrelevant to United States pathologists because it deals with United Kingdom legislation.

The remaining chapters are concerned with diseases of specific crops. Diseases and viruses of the following crops are discussed: potatoes, sugar beets, cereals, herbage and forage legumes, grasses, vegetables, and hops.

Because this book comes to us from the British Isles, most of the information contained is centered on problems of greatest

economic importance and scientific interest in that area. Of course, many of the diseases and viruses are universal in their occurrence. In that lies the value of this book to the practicing plant pathologist. Moreover, in an appendix Professor Western provides an alphabetical list of the main pathogenic fungi. Diagnostic data will also enable one in rapid identification of pathogens and the comparison of related species.

Others who may find value in this book are agronomists and plant physiologists. The price of the book may preclude its use as a general plant pathology text. Many practitioners, however, will find this book to be a useful reference.

Gary E. Briers
Sweeny High School

RUSSIAN AGRICULTURE: A GEOGRAPHICAL APPROACH by Leslie Symons, New York, Halsted Press, A Division of John Wiley & Sons, Inc. 1972, 348p., \$13.50.

This book provides both an interesting and enlightening discussion of agriculture in the Soviet Union from the country's earliest inhabitancy through approximately 1970. Its aim according to the author is to supply the agricultural reader with a comprehensive "survey of the present pattern, both in terms of overall production and regional dispersion of agriculture in the Soviet Union as objectively as possible." Specifically, it discusses in detail the major components of Soviet agriculture, including climate and soil resources, work force, grain farming, industrial crops, the livestock industry, the specialization and conservation of natural resources, as well as the political factors of Russian agriculture. There is an abundance of tables, maps and diagrams as well as appendices, a thorough bibliography and a workable index.

Although ultimately successful in its purpose, the late explanation of abbreviations needed throughout the text and the trials facing anyone but an English audience, for whom the book is written, will seriously disappoint many readers. The book is not light reading, however non-technical and the writing is complicated and often even obscured by the lack of meaningful transitions. Nonetheless, Symons provides information and insight where little has previously been available and, aside from the faults mentioned, is recommended for use of college and graduate students, researchers and in academic and research libraries.

The author, a Senior Lecturer in the Geography of Russia, Department of Geography and Centre of Russian and East European Studies, University College of Swansea, is an authority on Russia. His research for this book developed as a result of his experience as a Simon Senior Research Fellowship at the University of Manchester in 1967-1968, which enabled him to travel in Siberia and Soviet Central Asia as well as in European Russia. Apart from these credentials, Symon is the author of another book, *Agricultural Geography*. In *Russian Agriculture* he makes a serious attempt at providing a comprehensive and timely book and the patient reader will learn much about Soviet agriculture albeit from the view point of a professional geographer.

M. Dean Trivette
University of Kentucky

HOW TO WRITE AND USE BEHAVIORAL OBJECTIVES IN VOCATIONAL EDUCATION PROGRAMS, by Paul E. Hemp, Danville, Illinois: The Interstate Printers and Publishers, 1973, 76 pp. Paperbound, \$2.50.

This book provides a thorough orientation to the field of behavioral objectives. The author provides a common orientation to writing behavioral objectives using the popular thinking of Mager, Bloom and Krathwohl. An introduction to the book preempts specific portions on behavioral objectives dealing with what they are, their characteristics, how to write them, types of objectives, using them in program planning and in teaching. The second section provides sample lists of objectives for horticulture, mechanics, supplies, production, and wildlife conservation options in Agricultural Education.

Dr. Paul E. Hemp, Professor, Vocational and Technical Education, University of Illinois, Urbana, is well known in the field of Agricultural Education. He has been professionally active and the high regard he maintains within the profession is reinforced by this fine effort.

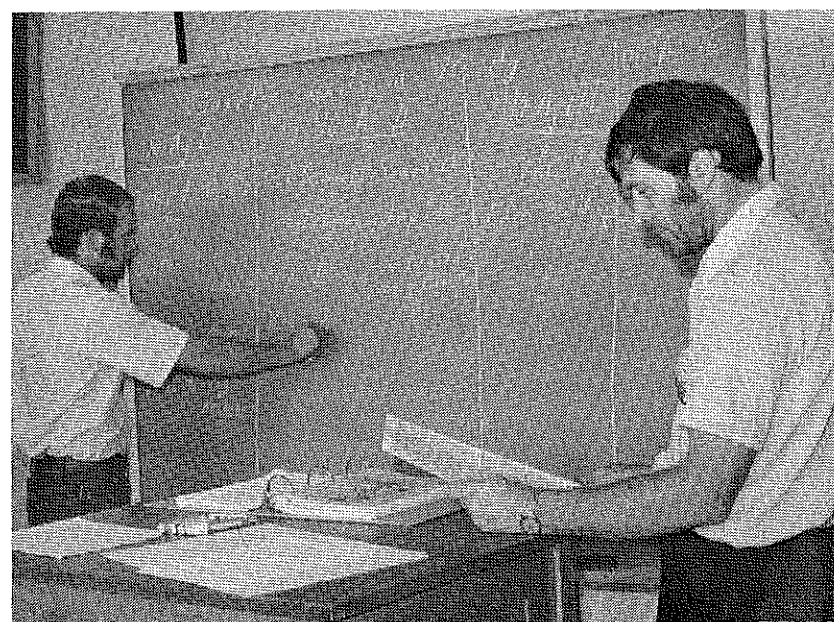
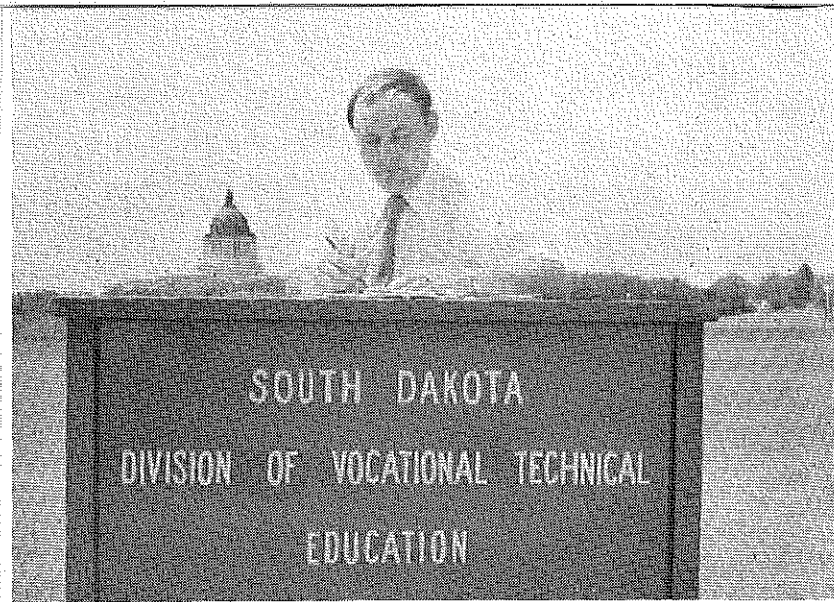
The book provides a pragmatic approach to the problem of writing behavioral objectives. It is unadorned with philosophical presentations of the subject — it tells you how to do it — and therein lies its ultimate value. It will be a tremendous asset to those concerned with criterion-related instruction, evaluation, accountability, and effective teaching. The text would be of particular benefit to those in teacher education and should be a recommended or required text for teachers-in-training. Furthermore, it should be on the shelf of every teacher educator for his use and also for instructional purposes. State staff members and vocational teachers in all areas should have and make use of a copy in order to be able to plot the route for their programs and ultimately be able to tell when they reach their destination.

Larry E. Miller
Virginia Polytechnic Institute & State University

THE SUN'S BIRTHDAY, by John Pearson. Garden City, New York: Doubleday and Company, Inc., 1973, 111 pages, \$5.95.

This is a book for those who see nature through the lens of a camera and feel that every picture tells a story. The pictures range from close-up to distant shots, from the flower to the sky, from the water to the desert. All the pictures were taken in relation to the amount of light from the sun and set in order to tell a story of nature. One extra item that could have been added to the pictures was speed of lens, lens opening, time of day, and filters used for each. This is a type of book worth having as a reference for those who like ideas for taking different pictures. Since this is primarily a book for pictures, it may have limited value to Vocational Agriculture Departments not greatly involved in photography.

Paul R. Aldrich
Natural Resource Department
Dover High School
Dover, New Hampshire



VOCATIONAL AGRICULTURE
PIERRE, So. Dak.

1st Period	Ag Mech. II	FARM Buildings	Livestock MEAT Evaluation	Rural Electricity
2nd Period	Soil Science	Small Engines	Crops II	BEEF Production
3rd Period	RANGE and Pasture Management	FARM Power	FARM & Stock Management	Livestock Improvement
4th Period	Swine Production	SHEEP Production	Horticulture	
5th Period	Introduction to Animal Science	Small Engines	Horse Production	Irrigation Systems
6th Period	Introduction to Vocational Education	Introduction to Crop Production	Introduction to Animal Science	Introduction to Ag Mechanics
7th Period	Agencies			



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Stories in Pictures

by Richard Douglass

COOPERATION IS NEEDED FOR QUALITY PROGRAM

Representing state level cooperation (upper left) is Larry G. Nelson, State Supervisor, Ag. Ed., South Dakota. A local administrator (left) is Mr. Gilbert Neiles, Principal of Riggs Senior High School, Pierre, S.D. Teachers of Vocational Agriculture (lower left) are Gary Grey, left and Larry Venner, right. Both are instrumental in fostering cooperation at Pierre, S.D. They are developing the schedule of quarter units to be taught this coming year at Riggs Senior High. The finished product is shown above. (Photos from Larry G. Nelson)

THEME—INSTRUCTIONAL TECHNOLOGY

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