STORIES IN PICTURES

by
Paul W. Newlin

The 1977-78 NYATA Board of Directors, seated (L-R): Sam Stouffer, Asst. Sec.; Dir.; Linclne, NE; Richard Weiers, Past Pres.; Lenexa, KS; James Goffman, Pres.; Smeltzer, GA; James Wall, Sec.; Dir.; Linclne, NE; C. D. James; and Jim Jones, V.P. — Region I: Tucson, AZ; Albert Flammernitz, Jr., V.P. — Region II: Kankakee, IL; Tom Gerber, V.P.— Region III: Kansas City, MO; W. A. McLeod, Jr., V.P. — Region V: Red Springs, NC; David Miller, V.P. — Region VI: Gothenburg, NE. (Photo courtesy NYATA)

A group of farmers from Furry, Texas, looking over some cotton research at the Texas Agricultural Research Center at Lubbock, Texas. Farmers are an important part of Adult Education. (Photo courtesy M. S. Henneman, Furry, Texas — See related article on p. 221)

"Sound Off For Agriculture," 1977 winners were presented awards by Max Engels, Bianco Produce Company. (L-R) Louis Hohenstein, Elba, NY; Tom Newby, Hart Collins, CO; David Greschi, Wascovlle, Wash; WL Larry Rada, Springfield, OH; J. T. Black, Greenville, SC; Roland Superson, Ulysses, PA. (Photo courtesy NYATA)

"NYATA Outstanding Young Member Awards" were presented by Charles Bung, U.S. Steel Corporation Inc. (L-R) Steve Green, LaBrea, CA; John Shaffer, Shafter, CA; David Bloom, Amherst, MA; David Schatz, Leeds; NC; Charles Williams, Davenport, FL; William West, Ripley, WV. (Photo courtesy NYATA)

Agricultural Education

Volume 50 Number 11

May 1978

Theme: "Past Technology, Education, and the Future"

* CENTER PAGES FEATURE *
16' TANDEM STOCK TRAILER — PLANS, STEPS, MATERIALS —

The focus of instruction in business management courses is on making intelligent decisions. (Photo courtesy Cushman and Ball, Cornell University)
guest editorial

technical education in agriculture at the post secondary level

by Thomas C. Learner

Dean, School of Ag. Tech. JUNY, Ag. & Tech. College Alfred, NY

Agriculture is the nation's largest industry employing in excess of four million persons directly and supporting another ten to fourteen million jobs in machinery, chemical and other industries in and processing and marketing food and fiber. Increasingly, farmers depend upon others to do the same jobs they once did themselves. Spraying, fertilizing, building maintenance and equipment repairs are just a few of the many examples.

Indications are strong that agriculture will have to expand even more in the future. An evergrowing population demands better nutrition and those countries will require sizable increases in world food supplies. Expansion of production agriculture necessitates additional supportive services.

technical education

With the aforementioned information in mind, it is understandable that when college admissions have been leveled off, the enrollment in agriculture across the nation has been increasing. Agricultural enrollment in our nation's colleges has nearly tripled since 1963.

Agricultural technology and science has made our nation the leading producer of food and fiber in the world. With this in mind, we need to continue and expand. When necessary, programs to train technicians in agriculture. It is necessary to prepare a more highly educated and technically competent individual to work in all areas of agriculture. Two-year post-secondary agricultural technology programs have proved to be successful in providing an excellent base for the agricultural person. Some of these programs need to be maintained and increased with demand. Examples of the types of agricultural technology programs currently being offered are:

Livestock Production
Dairy Production
Poultry Husbandry
Small Laboratory Animal Management
Veterinarian's Assistant
Crop Production
Soil and Water Conservation

(Concluded on page 225)
Some states have a very strong post-secondary program in agriculture. Others are developing rapidly and some are just beginning. All are recognizing the need to fill the gap between the secondary program and the 4 year college program. Articles in this issue indicate the way three states are organized to meet this need. Several articles share specific approaches and methods teachers are using in their programs. All indicate a strong partnership with the agri-business industry, the high school vocational agriculture programs, the state department of agricultural education and university colleges of agriculture and agricultural education departments. This is the kind of cooperation and communication necessary to make all these programs strong. Keep up the good work!

This issue features the first centerpages project requested by teachers at the AYA Convention, the plans for a 16' tandem stock trailer. Several people put a lot of effort into this project. Two vocational agriculture teachers from Guthrie, Oklahoma, drove to Stillwater in an unfamiliar van to bring the best set of plans. They interviewed the expert trailer-maker at the Vo-Tech school for about two hours getting the details. Then the expert came down his detail into the pertinent steps over a couple of weekends. The plans were drafted by an expert draysman in the Agricultural Engineering Department at Oklahoma State University. I would like to thank all these people for making possible the best set of plans for a 16' stock trailer I know of anywhere and the steps necessary to construct it. There are further details available on a 60 minute cassette for those interested.

To be able to continue this feature and to initiate the other features, those of you who know someone who has an excellent plan for a project, facility or other outstanding idea will have to encourage them to send it in or contact myself or a regional editor to respect this person to share these plans or ideas. I know most of you have a good joke or story you could share or a resource of materials, free or inexpensive. In order for each of us to benefit, each of us must share. Send in plans, articles, stories, sources, and other contributions and nominate fellow teachers, supervisors, and teacher educators who should be contributing. You are doing an excellent job of supporting the Magazine with articles now. I have several good articles last month and this, that I could not use because of lack of space. This makes competition for space stiff and I have a hard job choosing the best articles. This makes your professional journal even better—Keep up the good work! Thanks and a tip of the hat!—Ed

 promoting Articulation Between Secondary And Post-Secondary Vo-Ag Programs

INTRODUCTION

Vocational agriculture has been an important segment of the curriculum in many Iowa secondary schools since the 1930s. However, the establishment and growth of post-secondary vocational programs have occurred primarily during the past fifteen years. In 1965, a statewide system of post-secondary vocational institutions was legislated, resulting in the establishment of 15 post-secondary area schools. Instruction in agriculture is a part of the vocational education offerings in all 15 institutions. Recent studies by Byler (1) and Williams (4) indicate that approximately one-fourth of the Iowa secondary school students enrolled in vocational agriculture planned to attend an area vocational school or community college. The expansion and growth of Iowa post-secondary area schools resulted in a need for secondary and post-secondary programs to emerge as partners in providing contemporary educational growth for agriculture students. Educators in high schools and area schools needed guidelines that provide articulation procedures between secondary and post-secondary agriculture programs.

DEVELOPMENT OF ARTICULATION GUIDELINES

During the spring of 1975, the Department of Agricultural Education at Iowa State University and the Iowa Department of Public Instruction provided leadership to begin the development of guidelines for articulation between secondary and post-secondary agriculture programs. A one-week workshop was planned to focus on the development of such guidelines. Six instructors representing the vocational agriculture and six persons representing vocational/technical programs in area vocational schools were invited to participate in the workshop.

The results of the workshop (2) were a list of challenges identified as being related to articulation between secondary and post-secondary agriculture programs and possible action steps. The challenges identified and the possible action steps were grouped into the following categories:

1. Communication and Articulation Arrangements
2. Curriculum Development
3. Career Guidance and Counseling
4. Coordination of Leadership Activities, Employment Experiences, and Employment Placement
5. Program Entrance and Exit Regional meetings were conducted across the state to refine and further develop the guidelines that emerged from the workshop.

IDENTIFICATION OF ACTIVITIES TO ENHANCE ARTICULATION

One of the recommendations that emerged from the workshop and regional meetings was that "Articulation in Agricultural Education" be the theme of the 1976 Iowa Agriculture Education Conference. This recommendation was accepted and supported by various groups and committees. A portion of the conference was scheduled to examine participants' perception of the importance and the level of implementation of 45 selected activities in promoting articulation between secondary and post-secondary vocational agriculture programs. Conference participants included 222 high school and vocational agriculture instructors and 44 post-secondary agriculture instructors.

Please submit articles and pictures 2½ months before theme to allow publication time.

COMING ISSUES

JUNE -- Cooperative Education in Agriculture and Teaching

JULY -- Careers in Agriculture -- Summer Employment Opportunities

AUGUST -- Teacher Education in Agriculture -- Laying the Foundation for Good Teaching

SEPTEMBER -- Student Competition -- An Inviting Approach

OCTOBER -- Supervisors and Consultants -- Important Members of the Team

NOVEMBER -- Effective Teaching -- What's the Point?

DECEMBER -- Professionalism -- That's the Name of the Game

THE AGRICULTURAL EDUCATION MAGAZINE

May 1976

From Your Editor

Strong Partnerships

James P. Kay

Promoting Articulation Between Secondary And Post-Secondary Vo-Ag Programs

Bennie L. Byler* Teacher Education Mississippi State University

David L. Williams Teacher Education Iowa State University

The five activities perceived to have the greatest need for articulation were as follows:

1. Send pertinent information to student's former Vo-Ag instructor

2. Work with adult advisory committees for potential training stations

3. Conduct area meetings for administrators, counselors, board members and agriculture instructors concerning high school and area school programs

4. Exchange programs and curricula information

5. Inform high school instructors about placement and employment of former Vo-Ag students

Responses indicated all 45 activities were important for enhancing articulation between high school and area school agriculture programs (3).

FOLLOW-UP AND CURRENT PROGRESS

Action at the 1976 Iowa Agriculture Education Conference identified co-leaders (one secondary instructor and one post-secondary instructor) within each area school district. The co-leaders were selected to provide leadership for articulation between secondary and post-secondary agriculture programs in their district.

EIGHTEEN MONTHS AFTER THE 1976 CONFERENCE, post-secondary and secondary agriculture instructors who had given leadership to articulation efforts were asked to identify articulation activities that have been implemented since the conference. The articulation activities being practiced may be placed in three categories: (1) curriculum development, (2) teaching and (3) communications.

(Continued on page 247)
Post-Secondary Alliance With Industry

by

Eldred D. Weisman
Ag. Dir. Vocational Supervisory Staff,
Vocational Technical Institute, Minn.

Methods and systems employed in vocational and technical training are as diverse as the employment requirements in the many agricultural industries. Our post-secondary training programs run in length from a few months up to two years, meeting the varied requirements of particular positions.

We hang many titles on our graduates: skilled laborers, specialists, technicians, paraprofessionals, mid-management personnel, and others; but, the key to our success is the degree to which we meet the needs of industry.

Meeting the needs of industry first appear as a fairly simple task, but upon further analysis one soon realizes the complexities in training graduates for constantly changing industry. No industry will accept, for long, graduates whose training exhibits signs of obsolence. With this in mind, let us explore some of the avenues available to us which can assist in keeping our training programs aligned with current demands from the agricultural industry.

IN-SERVICE AND UPGRADE

Certification of vocational technical instructors is a process of evaluation administered by our State Vocational Office during which both training and work experience are weighed. Meeting standards is not an end in itself, but rather a continuing challenge to keep instructors qualified. Upon entering the field of teaching, the teacher who has been lured away from industry could well possess the most current understanding of the needs of industry. However, this same teacher could soon be a victim of stagnation if he fails to maintain that same avenue for keeping abreast with changes in industry. Keeping abreast with new developments in industry requires a cooperative effort on the part of instructors and administrators in maintaining our teaching commitment to the student while, at the same time, allowing teachers direct contact with industry.

Industry's concern in retraining and upgrading their workers and supervisory personnel is very similar to the concerns we have within our own school systems. Many in-service workshops are provided by industry. These opportunities are given by educational institutions and our teaching staff and supervisors are given the opportunity and encouraged to take advantage of these opportunities in developing in-service training and presenting in-service training sessions for industry. This exchange of knowledge and know-how can only enhance the rapport and appreciation between industry and our graduates in the area for which they were trained. In order to accomplish this goal this year, we are stressing the need for in-service training to be maintained with both the student and with industry.

Through close firsthand contact with industry, the student has the opportunity to evaluate, evaluate, to train in industry, whether he or she wishes to continue training for this specific vocation or not. It is better that a student, dissatisfied with the first or his first choice of vocation, discovers this before too long a period has been committed to training for a position they really are not interested in. In like manner, close contact with industry serves to further stimulate the student who now realizes that he has made the correct choice.

After involving industry in the training process of our students, it is imperative that we be honest with them in recommending placement of our graduate. We must have available for the prospective employer a full listing and description of the subject matter taught, the major competencies learned by the student, and the general level of accomplishments that the student at the present time are enjoying a strong 95% placement of graduates in our programs.

INDUSTRY EVALUATION AND GUIDANCE

Each program has its own on-going Advisory Committee made up of representatives from the various segments of industry. These committees meet periodically to evaluate our programs and to make recommendations for adjustments. The wealth of informational input from these industry leaders is immeasurable.

The continued development of the curriculum itself is a huge undertaking and many of the advisory committees' comments are very revealing and critical by nature. In a day when more and more students are involved with the competency based instructional approach, firsthand guidance from these committees is very important. The advisory committee does have the added cloud needed to help bring about changes. The mere fact that we have readily available an outside knowledgeable source who can be called upon instantly to help with problems is indeed comforting. The membership of the Advisory Committee should be so designed as to allow for periodic enrollment of new members in the form of others aspiring.

BE HONEST

The major goal of all vocational-technical programs should be successful placement of graduates in worthwhile positions.

CONTINUED PROMOTING

Curriculum Development. Articulation activities being implemented in the area of curriculum development include:

1. Area school instructors serving on secondary and post-secondary agriculture advisory committees.
2. Sharing of content of courses and programs by secondary and post-secondary instructors.
3. Secondary and post-secondary students involved in a working relationship as a part of a typical work day.

ARTICULATION... counselors on the value of summer programs in secondary and post-secondary agriculture instruction.
4. Secondary school instructors serving on area school agriculture advisory committees.
5. Instructors cooperating in the selection of employment training stations that may serve both secondary and post-secondary students.
6. Teaching. The following articulation activities related to teaching were observed being used:

CONTINUED POST-SECONDARY'S ALLIANCE...

Another avenue used to assure industry-student contact is the involvement of the students in cooperative projects with related industries. These projects may take the form of survey work, industry research, or public relation projects.

Unfortunately one of the roles of a superintendent with industry is to find the effective ways for industry-student contact to be maintained with both the student and with industry.

(Continued on the next page)

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LET THE FARMERS TEACH FARM MANAGEMENT

by
Boyd C. Fuller
University of Minnesota
Technical College, Waseca
Waseca, MN

"The only man who is educated is the man who has learned how to learn; the man who has learned how to adapt and change; the man who has realized that no knowledge is secure, that only the process of seeking knowledge gives a basis for security. Changing the procedure of thought on process rather than upon static knowledge, is the only thing that makes any sense as a goal for education in the modern world."

Carl Rogers

How do you teach Farm Management, the fine art of risk-taking and decision-making, to young people who have never owned or operated a farm? Most of the students in Principles of Farm Management are from the farm. However, some have never been on a farm and a few are girls.

At the University of Minnesota Technical College, Waseca, I use what I call a "systems approach" to teaching Farm Management. This eleven-week, integrated teaching system consists of the following five components:

1. Six 2-hour field trips to a hog farm, dairy farm, beef farm, crop farm, home farm and a part-time farm.
2. Six 1-hour class discussions, led by students, for each field trip.
3. Eleven 1-hour discussion lectures by the instructor.
4. Two 2-hour classroom discussions led by a guest speaker in the areas of agricultural credit and farm management.
5. Three 2-hour classroom presentations of research papers prepared by each student in the areas of their individual interests.

FIELD TRIPS

The backbone of the system is the 2-hour field trips to six area farms with the farmers discussing their concepts of farm management with the students. Farmers show students the results of their management efforts. A committee of students interested in the major enterprise of the farm assumes the responsibility of asking questions regarding the farm operation and leading a one-hour follow-up discussion in the classroom.

Various methods and opinions of management are essential to make this an effective learning experience. This is not to confuse the students, but to get them to think for themselves, to see that there are different ways to successfully manage a farm operation and to serve which manager or combination of managers reflects their newly-acquired management concepts. In other words, the farmers act as a sounding board for the students to test out their concepts of management, their ideas, and their value systems. The following combination of farmers, all located within a 15-mile radius of UMW, have worked exceptionally well at Waseca.

THE FARMS

Ted Deml has farmed for ten years. He and his family, with part-time help in the summer, crop 1800 acres of oats, and soybeans and fattens over 600 feeder pigs in two sheltered buildings.

Our dairy farmer is Jerry Stridtmann, who, with his wife and two pre-school-age sons, milks fifty 18,000-pound milking cows in leaking stallacious and crops 320 acres of corn forage for the cows.

Kevin and his father, Loo Miller, make an excellent example of a father-son partnership. During a 4-year period, they have operated 800 acres of crop land, obtained a 30-head beef herd and fed-out feeders on a 50-head basis.

Roy and Mary Larkin are a middle-aged couple who do not have children. They want to retire from actively operating (500 acres) of crop land and sell one of their chemical custom-spray business. Through partnership or incorporating, they are bringing two young families into the operation.

Red Seeholm's neighbor farms the tillable acres of Rod's 310 acres river-bottom farm. Rod is in the Minnesota legislature and sells insurance. As a hobby, he plants wheat, butternut and green trees and develops wildlife areas on the non-tillable land. On this farm, all resources, including the human resources, are developed and put to their highest and best use.

Melvin Kosman is a retired dairy farmer. Melvin has had a lifelong interest in draft horses. On retirement, he cashed rented his land to a neighbor, converted the machine shed into a boarding stable, and built a pole-type horse barn. He hired a former UW Extension Horse Management student to care for and train horses while he buys, sells and breeds draft and light horses.

The direct profit and wildlife areas on the Rod Seeholm farm are excellent background for Rod and the UMW students.

DISCUSSION

The first prerequisite of good teaching is democratic behavior by the teacher.

L. J. Phipps

The hour follow-up discussion provides an opportunity for the students to become involved by discussing what they saw and interacting among themselves. Students tend to bring their horse experiences into the discussion. The discussions are lively if the instructor keeps out of them and acts only as a source of information.

LECTURE

The 1-hour lecture period runs parallel to the field trips and provides an opportunity for the instructor to expand and supplement ideas generated from the field-trips and follow-up discussions. Each student has a packet of hand-outs which includes the following subject areas, discussed in this order:

- "Scapes of Growth and Development of the Farm Business," Hohens.
- "Efficient Principles in Farm Management," Kruger.
- "Application of the Principles of Marketing to Farmers," Peale.
- "Applying the Principles of Marketing to Farmers," Peale.
- "Management Considerations in Estate Development for Young Farmers Families," Thomas.
- "Estate Planning," Hurl.
- "How Business Arrangements: Which One for You?" Thomas.
- "Guidelines for Analyzing the Farm Business," Wiltz.

RESEARCH PAPERS

Each student is assigned three jobs. The first job is a research report on a student-selected topic related to management. This is presented to the class during a lab session. Secondly, each student prepares a written report for the instructor. In this report individual goals, talents and opportunities are determined; also, the ideas and information learned during the course can be applied toward these goals. A third assignment is to evaluate each segment of the course and offer suggestions for improving the course. These jobs, along with attendance and participation, are used for grading the students.

SUMMARY

In effect, the students see, hear, smell, taste, and "feel" management. They discuss and form opinions on the relative success of the management practices they have observed. In effect, the farmers are a sounding board for them. The farmers have conflicting values and ways of doing things for the students to apprise. This system utilizes all of the teaching techniques except actually managing a farm operation.

Leslie Montgomery, a student from an urban area, summarized the systems approach:

"The teacher helped us teach ourselves and put us in situations and presented us with people that made us think."

The farmers are exceptional teachers because they are teaching by precept and example.

GUEST SPEAKERS

The manager's financial decisions interact with other decisions in production and marketing to determine the overall economic success of the farm."

J. A. Hopkins

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BIBLIOGRAPHY

EMERGING PARTNER!

by Roger Carlson
Agri-business Instructor
Lake Area Tech College
Institute
Watertown, SD

Anahhh! That both water is just right. I think I'll just lay back and relax.

Can't forget to mention the scholarships that Creese, Peavy, Farmland Industries and the Farmers Union offer each year. When industry is willing to spend money on scholarships, please take the time to see our advisory council, they must feel we're partners.

Where's it getting late. Hey?

Terra Western Corporation turns their plant over to us for one day prior to the start of supervised occupational experience. This provides the students the opportunity to transfer anhydrous ammonia, bleed dry fertilizer, mix liquid fertilizers, calibrate sprayers, operate a flotation and work with the fertilizer pumps under the supervision of the Ag-Business Technology staff.

Merritt, Ciba-Gieggy, Mobay and other businesses provide great speakers, and equipment for the classes. Yep! I think industry considers us a "partner".

WITH THE UNIVERSITY

"Emerging Partners!" There's always a shortage of vo-ag instructors, maybe I should write about the working relationship that is developing with South Dakota State University. Proverbially, they would not transfer credits for our students, but now, they have offered to transfer 70% of our credits. So it seems that we are making great strides.

Then there are corporations like Corn, Farmland Industries and others, who hire our graduates and place them in their own training programs. One such business patterned their training programs so that it intentionally starts where we leave off.

POST-SECONDARY AGRICULTURE PROGRAMS IN SOUTH CAROLINA

In 1963, the Governor of South Carolina, realizing the significance of agriculture to the state, formed a Legislative Committee to study the programs and problems of agriculture with a view to provide the more productive and profitable force to the people of the state. The responsibilities of the committee included the determination of the need in the state for increased educational opportunities in the field of agriculture.

NEED DETERMINED

Based upon a preliminary review of existing agricultural programs in the state, the committee discovered that an agricultural education gap did exist. This gap was found to be between the undergraduate degree programs and the non-degree educational programs offered by the College of Agricultural Sciences, Clemson University, and the programs offered by the Vocational Agricultural Education Division of the State Department of Education.

With these findings, the committee appointed a temporary advisory committee and charged the members with the responsibility of developing a proposal for a program to fill the void in agricultural education in South Carolina.

AG TECHNOLOGY PROGRAMS CREATED

Acting on the recommendations of the temporary advisory committee and the Legislative Study Committee, the General Assembly of South Carolina created agriculture technology programs at the associate degree level in November, 1965, and placed them under what is now the State Board for Technical and Comprehensive Education.

In an attempt to simplify the existing programs, these programs were made a joint responsibility of the State Board for Technical and Comprehensive Education, the State Department of Education, and Clemson University.

STATE ADVISORY COMMITTEE FORMED

A State Advisory Committee was made up of the Dean of the College of Agricultural Sciences, Clemson University; Director of Resident Instruction, College of Agricultural Sciences, Clemson University; Head of the Department of Agricultural Education, Clemson University; Dean of the College of Forest and Recreation Resources, Clemson University; State Supervisor of Vocational Agricultural Education; and the two administrators of the South Carolina Agricultural Education.

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THE BEGINNING

In September of 1966, the first students enrolled at three technical centers, which were: Tri-County at Pendleton, South Carolina; Florence-Darlington TEC at Florence, South Carolina; and Trident TEC at Charleston, South Carolina. At this point in time, the value of an agricultural technician was unknown, and recruiting students was an extremely difficult task. These programs were continued and when the first class graduated in 1968, they were employed at the same salary as anyone else. As more and more graduates found employment, the number of students began to increase. Today, in South Carolina, seven of the technical colleges offer ten programs in Agricultural Technology, with 97% of these programs in agricultural education. Even with this increase in enrollment, job opportunities still outnumber the graduates.

SUCCESS FACTORS

The success of the agricultural technology programs in South Carolina might be attributed to many factors, but some of the more important ones would include these:

1. The close working arrangements with Clemson University and Vocational Agricultural Education.
2. The well-qualified and dedicated department heads and instructors who have been employed.
3. The support that has been provided by the college administration.
4. The acceptance and support of the agricultural industry in general.
5. The support of the South Carolina General Assembly.
6. The ever-increasing need for skilled Agricultural Technicians.

(Concluded on page 261)
16' TANDEM STOCK TRAILER

by
Wally Holt
Metal Fabrication Instructor
Indian Meridian Area Vo-Tech School
Stillwater, OK

with assistance from
Raymond Cockrum and Lloyd Fletcher
Vo-Ag Teachers
Guthrie, OK

Drawings by
Jack Fryrear
Ag. Engineering Dept.
Oklahoma State University

Step #1
Cut the material for the main frame.
A. Cut angle iron from 2½' bar stock.
B. Secure pre-fabricated parts locally when possible, or have fabricated before starting assembly.
C. Check all dimensions with blue-print.

Step #2
Lay out the main frame.
A. Lay 3½ x 3½ x ⅜' steel angles on four jack stands upside down.
B. Clamp all parts in position.
C. Measure diagonally, from corner to corner, to square main frame.

Step #3
Turn the main frame over, assemble the side frame.
A. Bolt axles in place — Brake shoes have LH (left hand) or RH (right hand) stamped on them.
B. Locate standards, Square with main frame. (Note: Tack weld front standards on rear side only.)
C. Put top rail in position. Locate top rail 1½' above standards, leaving room for top sheets to be placed later.
D. Put top circle in position, flush with top of top rails.
E. Tack weld fenders in place, flush inside with side standards. Raise bottom of fender ³⁄₄' up from bottom of 3½ x 3½ x ⅜' steel angle to leave space for welding.
F. Space top rail 60° wide, square stands. Tack braces in place.

Step #4
Assemble the light wires, floor and front sheet.
A. Run ⅞' electrical conduit for light wires. Run across edges where ⅞' run.
B. Tie wires in position, tape all connections thoroughly.
C. Lay flooring boards, 3½ x 12', #2 yellow pine, in position. Move forward 3½' inside rear angle. Let front extend over bottom circle.

Step #5
Hitch and jack assembly.
A. Weld jack in position.
B. Weld jack stand to hitch.
C. Weld ¾' safety chain in position on each side of tongue.

Pull against both top and lower circles. Weld with small intermittent weld ¾' long on 1½' centers. (Note: Do not overwork.)

Prefabricated Tops Are Available.
CONTINUED 16 TANDEM STOCK TRAILER

BOLL OF MATERIALS

1. 2 oz. 3" x 3" x 1/4" steel angle - 13" long - side rails
2. 3 oz. 3" x 3" x 1/4" steel angle - 101/2" long - cross pieces
3. 3 oz. 3" x 3" x 1/4" steel angle - 110" long - tongue
4. 2 oz. 3" x 3" x 1/4" steel angle - 54" long
5. 1 pc. 2" pipe - 811/4" long
6. 2 pcs. 3/4" x 2" x 1/4" steel angle - 60" long
7. 1 set tandem 6 leaf spring (shackles and hanger bars included)
8. 1 - 3/4" 3000# brake axle
9. 1 - 3/4" 5000# draw axle
10. 2 oz. 3" x 3" x 3/16" steel angle - back standards
11. 2 oz. 6" x 6" rolled angle steels 15/8" x 15/8" x 1/4" steel angle
12. 2 oz. 1 " x 2" x 1/8" steel angle - 505/8" long - standards
13. 2 oz. 1" x 2" rectangular tubing top rails
14. 5 set 2 x 1056" tee shaped fenders
15. 1 bulldog hitch - jack and 2" ball
16. 1 pc. 1" x 1" x 1/2" angle - 55" long - center gate
17. 2 oz. 1/2" x 3/8" x 3/16" steel angle - 43/4" long - center gate
18. 2 oz. 1" x 1" x 1/2" angle - 29" long - center gate
19. 1 pc. 2" x 1/4" x 3/16" angle - 28" long - center gate
20. 2 pcs. 3/16" x 1/2" x 3/16" steel angle - 12" long - long latches
21. 1 pc. 1/4" x 1/16" x 1/8" angle - 13/16" long - short latches
22. 1 pc. 1/4" x 1/16" x 1/8" angle - 13/16" long - short latches
23. 1 pc. 1/4" x 1/16" x 1/8" angle - 13/16" long - short latches
24. 1 pc. 3/4" x 2 x 1" x 1/4" steel angle - 47" long - braces
25. 1 pc. 1/4" x 1/4" x 1/8" angle - 3/4" long - braces
26. 1 pc. 1/4" x 1/4" x 1/8" angle - 3/4" long - braces
27. 1 pc. 1/4" x 1/4" x 1/8" angle - 3/4" long - braces
28. 1 pc. 1/4" x 1/4" x 1/8" angle - 3/4" long - braces
29. 1 pc. 1/4" x 1/4" x 1/8" angle - 3/4" long - braces
30. 1 pc. 1/4" x 1/4" x 1/8" angle - 3/4" long - braces
31. 5 - 5" x 15" Ford car wheels - 8 hole
32. 5 - 670" x 15" o.p. tires
33. 5 - 1 1/2" round hub caps
34. 2 flush mount tail lights
35. 6 amber clearance lights
36. 1 - 3 lightcluster - rear of top
37. 8 U bolts - 1 1/4" - plates 16" x 16" nuts
38. 16" x 12" electrical conduit for wires
39. 16" - 2 way brake wire
40. 25" - 3 way light wires
41. 40 - 1 single strand light wire - top
42. 4 - 6" vents - chrome
43. 1 pc. 12" chrome - 100" long
designer - 3/4" x 1/2" cabinet trim - top
45. 1/4" x 1/8" sliding gate channel
46. 1" x 2" x 12" x 16" - flooring
47. 1" x 2" x 14" x 16" - flooring
48. 24" - 1/4" x 1/2" self tapping floor screws
49. 1/8" x 1/4" black pipe
50. 1 gal. white paint, 3 gal. color and thinner
51. 16" x 1/2" black pipe - 2/16" long - latches
52. 4 pcs. 9/16" HR rod - 12" long - latches
53. 4 pcs. 9/16" HR rod - 9" long - latches
54. 4 pcs. 9/16" HR rod - 9" long - latches
55. 2 pcs. 9/16" HR rod - 30" long - latches
56. 2 - 12 gauge tail line gauges

LIKE THIS FEATURE? If so, nominate a friend who has plans, sketches, or photos of a project they would like to see, which should be shared.
Contact a regional editor or the editor in chief to submit it.

THE AGRICULTURAL EDUCATION MAGAZINE

CONTINUED -- TECHNICAL EDUCATION

Horticulture
Nutrition Management
Turf Grass Management
Agricultural Chemistry
Agricultural Mechanics
Agricultural Communications
Food
Grain Food, Seed and Farm Supply
Forestry
Fisheries and Wildlife
Forest and Recreational Land Management
Agriculture
Food Marketing

There is a growing awareness of the need for training for the semi-skilled, skilled, and technical positions. The secondary level can meet the needs for education and training for many students and adults. At this level, young people have the maturity to grasp learning experiences and have the motivation for entry into occupational training.

Agricultural educators have an opportunity and a commitment to provide the technical competencies needed to meet the demands of the agricultural labor force.

Increasingly, we hear that we must double our production in the next eighteen to twenty years to keep up with population and economic trends. This type of increased productivity represents an expanding need for highly skilled, specialized and knowledgeable personnel in agriculture.

Scientists and technicians represent the hope and need in agriculture in the years ahead. There will be little room for the unskilled.

THE CHALLENGE

There is a need for more awareness and a more adequately accommodated different cognitive styles in learning. We need to look at students' previous experiences, their abilities, and their learning styles. We still need to put everyone through the same "boon," often repeating what they have previously learned.

As the agricultural industry continues its movement toward greater specialization, we need to be aware of this in our technical programs and alter them as the need arises. Also, in the world of agriculture more complex, and specialized, there will be increased emphasis on educating the whole person. Thus, a meaningful proportion of the student's educational program will include the general education areas of humanities, communications, social sciences, mathematics, and physical education. Students should be specialized enough to be knowledgeable but have enough breadth to be able to change as the specializations change.

We need to nurture an interest in lifelong learning and an understanding of the society in which we live.

If we are to meet the challenges in offering technical programs in agriculture, we must have highly specialized facilities. One of the greatest mistakes we can make in technical agriculture is to try to conduct a technical program without proper facilities. We must have facilities that will allow our students to get "hands on" learning experiences.

INSTRUCTIONAL REQUIREMENTS

Properly trained faculty and supportive staff are absolutely necessary if we are to be successful in offering technical programs in agriculture at the post-secondary level. It is necessary that an individual have the background to match occupational specializations. Some degree of occupational experience employment is desirable for faculty in a technical agriculture program. This work experience, of course, should be related directly to the subject matter that is to be taught and also should be recent enough to reflect current business or industry practices.

The most important quality for teaching faculty is perhaps the most difficult to assess. This quality is a sincere and a desire to work with, relate to, and motivate students.

A technical, competent, and experienced subject matter specialist without this quality is a liability to any instructional program.

Providing appropriate in-service educational experiences that will help keep technical educators up to date is one of the serious and crucial problems facing technical educators in agriculture.

Faculty must be current in their knowledge of scientific changes and the changes in the techniques, procedures, apparatus, and equipment in their specialty within agriculture. This can be done through reading through formal coursework, attending workshops and conferences, participating in professional organizations, reading current literature, and making periodic return to industry in the field of one's specialization. Much work remains to be done in faculty development programs. Too many times, faculty members take courses merely for credit or promotion.

SUMMARY

Quality technical programs in agriculture at the post-secondary level offer a great diversity and open doors to many young people who can make a satisfying and worthwhile contribution as successful workers in one of the many job opportunities in agriculture. Agriculture and its related businesses and the use of our natural resources is big business, which in some ways, touches each and every life in the United States. Technical education in agriculture at the post-secondary level has an opportunity and a challenge to continue to prepare graduates for key positions in farm production, the processing and distribution of agricultural products, money management in banks and insurance, and the many other agricultural businesses supporting the agricultural industry.
Accountability In Adult Farmer Education

by Paul J. Callahan

The word "accountability" has become very popular in education circles these days. Although some teachers consider it a threat, we feel it is an important aspect of adult education, as well as elementary, secondary and post-high levels of instruction.

To us, accountability means we are responsible for the educational needs of our students. It also means we must be able to determine whether or not we are meeting those needs. Indeed, if management education for farmers is important, then we as Farm Management instructors must be able to demonstrate accountability.

Normally, adult students don't take "standards" tests or measures when they have learned. Accountability has been difficult to measure at the adult level and the means of the past have been woefully inadequate. As a result we have adopted and begun implementing some of the more common Farm Management programs that should help measure accountability. These programs were begun last year, others are being tried this year for the first time.

OFFICIAL MEASURES OF ACCOUNTABILITY

The only measure of program accountability for Farm Management Education in Minnesota has been the number of enrollments. The Farm Management instruction cost $1200 per student for instruction per year, or "How many farm units are enrolled in the program?". Indeed, the state is still promoting the "hugger's better concept" by passing legislation (during the last session) which sets the minimum number required to maintain a Farm Management program at 42 enrollments who have been in the program for at least two years. They have added the qualifier that 60% of the enrollies have their farm account analyzed.

A USEFUL DEFENSIVE MEASURE OF ACCOUNTABILITY

One idea we have developed over the past year and now have begun to implement is the concept of reviewing farm records. There are a number of reasons for developing such a program:

1. It gives us a way of saying that what we are teaching is being learned, and if they have not invested a particular concept it can be reemphasized during the next on-farm instruction visit.
2. It gives the farm family a feeling of accomplishment, both at the time of the visit and at the end of the year when they receive their certificate for having successfully completed a year of Farm Management instruction. And, although it has not yet been tested, it gives us a means of defending our program during this period of education cutbacks and increased regulations.

AREAS OF INSTRUCTION AND EVALUATION

As an example of how the testing process might work and to demonstrate its importance, let us consider the fact that the Farm Business Analyst is only as accurate as the records from which it came. Unless the records are of excellent value the analysis is of little use. We therefore test and assure that the records are in excellent condition. To do this, we must first test the system that performs the job.

1. Does he understand the importance of accurate information for commodities, livestock, non-farm assets, etc.
2. Does he use a complete understanding of the proper way to enter transactions into the account book, both where and why.
3. Does the book contain the selected expense allocation to insure that each individual enterprise analysis will reflect exact returns?

BUDGETING AND CASH FLOW PLANNING

We need the knowledge to prepare cash flow planning for farmers — not only because farm lenders like it, but because it is a tool for determining cash flow. A project estimate of major cash flow changes (e.g., changes in marketing strategy, capital purchases, and credit needs in advance. Whether or not a project is contemplated for the next purchase or change in his farm business, cash flow planning can help map the proper timing of any key decisions. As a result, value of cash flow planning, we have developed an uncomplicated cash flow planning form, and encourage enrollees to use it. After the first year, the enrollees (by using the past year's actual cash flow, market predictions and production plans) should be able to prepare a fairly accurate cash flow for the next year.

A question which often arises is "Can I afford...?" The items in question may be land, a huge piece of machinery, or a sophisticated livestock facility. By the use of his records, cash flow plan and previous analyses, he should be able to prepare a partial budget, projecting the anticipated effects such a purchase would have on his business. The evidence of our accountability would be:

1. Can he develop a budget?
2. Can he develop a project plan for which his farm family will be better off in the next year? Can he develop this plan for the next year's purchase?
3. Can he prepare an analysis that will enable him to make decisions before they are made?

INCOME TAX MANAGEMENT EDUCATION

Today taxes are very important and yet most farmers are not aware of the extent to which they can be cut. It is very important that the farmer have a clear understanding of "net cash farm income," how it is determined and how it can be adjusted. Because we feel taxes are so important, we have a tax planning session late in the year and a tax planning farm instruction visit as part of regular program. We also have a special service on income tax, planning and management education, an important part of the course of study. Tax management education has three aspects:

1. Determination of the "correct" tax situation, near the end of the year by the enrollee himself, for the current depreciation schedule.
2. A decision of where the farmer wants to be in the future, generally in terms of how will he be on paper, the amount of changes and the relative amount of change he is willing to make as it relates to the balance of the year, expect investments, etc.) to adjust the net cash farm income to the desired level.

THE FARM BUSINESS ANALYSIS

The Minnesota Farm Business Analysis is a composite analysis. This brings on a whole new group of testing possibilities. Do enrollees understand the financial tables, ratios, crop and livestock enterprise analyses? Do they know where these figures come from? Do they determine the farm what they mean? Specifically, can the enrollees make valid decisions about his farm operation based upon analysis information?

USE OF THE SUMMARY BOOK

We have developed a 10-year analysis summary book as an aid to decision making. It is an easy way of rearranging the listing of numbers from the analysis to the summary every year develops a graphic picture of trends in the farm business. By studying the direction these trends have taken over a period of years, it is easier to determine what steps should be taken to improve the farm business. The idea that a farmer maintaining his summary book and refers to it frequently is a good indication of his understanding of the problems he faces. He also shows that, because he trusts the accuracy of his records, he has faith in the analysis and the trends that develop.

A question which often arises is "Can I afford...?" The items in question may be land, a huge piece of machinery, or a sophisticated livestock facility. By the use of his records, cash flow plan and previous analyses, he should be able to prepare a partial budget, projecting the anticipated effects such a purchase would have on his business. The evidence of our accountability would be:

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HOW DO WE TEST?

Since much of our instruction involves the presentation of highly technical information and requires the development of special competencies, our tests usually take a standard objective format. Some concepts lend themselves better to subjective style, but in either case the tests are given to the farmer family to be completed. The time allowed for the test is based on the available facts and the instructor who then reviews the exams with the family during the next farm meeting.

We feel that such an addition to our program helps demonstrate our accountability to the farmers. The results encourage us in improving course content and method of instruction. Furthermore, it is a good job of instruction and our enrollees understand what we are trying to do and why. We encourage as much cash flow training as possible, and enroll other people to serve as a farm accountant during (Concluded on page 261)
PARTNERS IN PROGRESS

by Robert E. Winger

Chico, Div. of Agr. and Nat. Res.
SUNY, ASFT College

Cobleskill, NY

I would like to identify some of the activities and programs which have resulted from this partnership. They have led to mutual benefit between the colleges for the betterment of agriculture and technical education. This has been done primarily through a collaborative effort between the colleges and the agricultural and technical college graduates at Cortland and greater academic success for those transferring. Cornell admission officers have noted that of the 443 agricultural and technical college graduates who have been accepted and enrolled at Cornell, 96% have graduated with a bachelor's degree.

ARTICULATION

For the past several years an Articulation Conference has been convened each year by the Division of the College of Agriculture and Life Sciences at Cornell. Participants from Cornell include the Dean of the staff, Director of Student Instruction, and the person of the Department of Agricultural Extension. The agricultural and technical colleges are represented by their respective presidents and agricultur- cal and technical college transfer-coordinated chairperson. This conference has provided an opportunity for open discussion of course requirements for technical and agricultural courses as well as transfer of academic credits, such as the Technical Agriculture Program at SUNY, New York State College of Agriculture.

JOINING STAFF MEMBERS

Within the state we have regular meetings of the Agricultural Education Joint Staff. Membership includes the staff of the Bureau of Agricultural Education, the Department of Agriculture, the president of ATANY, and a representative of the technical college and agricultural college. (Concluded on page 261)

Leader in Agricultural Education:

by Clarence E. Bandy

At SUNY, ASFT College

The agricultural education program has been an integral part of the college's curriculum. It has produced graduates who are well prepared to enter the agricultural field. Many of these graduates have become leaders in their respective fields. The success of the program can be attributed to the collaboration between the colleges and the transferring students. The program has been successful in providing a strong foundation for students who wish to pursue a career in agriculture.

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Post-Secondary Programs in Ohio

Welsh Barnett
Area Supervisor, Vocational Education
Agricultural Education Service
Columbus, OH

The two-year post-secondary technical programs in Ohio were developed to train technicians or paraprofessionals. Our manpower data shows that about 22 percent of our total work force in agriculture will be in this category. The program requires a minimum of 160 contact hours, with at least 55 weeks of in-school instruction. Minimum for the total instruction in the technology program area are: five weeks of special laboratory experiences and related technical subjects, 15 percent basic laboratory or manipulative experiences, and 20 percent devoted to the development of skills in oral expression, written forms of communication, graphic forms of expression, human relations, supervisory techniques, and other leadership development skills. The remaining 15 percent, a maximum, must be distributed according to the needs of the area of instruction.

Internship is an integral part of the two-year post-secondary programs in Ohio. The length of the experience and the time it is scheduled is determined mainly by the agricultural industry where the Associate Degree graduates will ultimately be employed and by members of the state staff. The student, to be successful, must be placed in the industry and supervised by personnel from the cooperating institution.

Across-the-board experiences in that industry for three months during the "peak season" gives the student on-the-job experience and is enough for successful employment.

A maximum of 275 contact hours can be earned through the internship program.

State Advisory Committees for each commodity area are utilized to determine the curricula manpower needs and where the post-secondary technical programs should be established to meet these needs. Each local program has a State Advisory Committee meeting once or more times annually to review the existing programs with recommendations for updating, deletions, or additions.

Continued

Quality Programs Through Partnership

Although South Carolina should be proud of the success of the new high school agriculture programs, it must be realized that these programs have not reached their full potential. The most important thing to be remembered is that quality programs produce quality graduates. As agricultural industry moves into the future, it will require employees with more skills than ever. Those who are responsible for producing the workers who can make this powerful farm industry grow must have the qualified instructors and equipment to do the job. This is true for the agricultural universities, and secondary vocational agriculture, as well as post secondary agriculture programs.

To accomplish these goals, it seems as though we have no choice but for all elements of agricultural education to work together to produce quality workers needed by our industry. When this can be accomplished, we can all put oursevles on the back and say, "Indeed, we are truly partners."
MODELS FOR ADULT EDUCATION

by Harold R. Cashman and Joe F. Bailey, Teacher Education, Cornell University, Ithaca, NY

Many of us in Agricultural Education have been led to believe that the single effective way to organize and conduct a given adult education course. The authors of this article wish to take exception to that point of view. We will show that effective programs are important. Next we will describe the unique characteristics of three alternative models available to the teacher of any adult education course. Then we will make suggestions for choosing the model that best fits you and your learners.

THE CASE FOR ALTERNATIVES

A standard prescription can only be valid for those adult education situations where the assumptions underlying the prescription are fulfilled. Such prescriptions in adult education are based on numerous assumptions concerning the teacher, his learners, and his available instructional resources. To cite a few examples, it is commonly assumed (1) that the teacher is knowledgeable and experienced in the occupation, (2) that he can offer the learner the option of learning at his own pace, and (3) that both the teacher and his learners share the purpose of the prescription writer, and (3) that the instructional resources (the teacher’s ability teaching, physical plant, tools and equipment, potential community inputs, etc.) are adequate to fulfill the prescription.

It is the fact, however, that both teachers and learners may vary widely on almost any characteristic including subject matter competence, occupational experience, purpose for engaging in adult education, and ability to utilize available instructional resources. For this reason, standard prescriptions may be stifling to their best — or useless at their worst. Ideally, we need the long-term goal to design systems for organizing and conducting adult programs tailored to fit a given teacher, his learners, and his resources. Over the short term, the very least we can do is to replace the standard prescription with viable alternatives. These alternatives follow. They do not exhaust the possibilities — but at least they are illustrative.

THE EMPLOYER-TRAINING MODEL

This model is a very useful tool for teaching adults how to improve their on-the-job performance. You will find it useful for learners who are seeking to upgrade or develop new skills or to develop greater understanding of work processes. It is used widely in industry, business, and the military services.

The main purpose of employer training classes is to improve the competencies of the learners in a specific technical area or area for their employment. Employees comprise the main clientele of such courses although prospective employees and others frequently participate. Recruitment is normally accomplished through trade newspapers and through personnel officers. The employer places serious emphasis on the learner’s interests in the occupation and the employer’s job market. The curriculum is generally designed to be as close to home as possible, and the teacher organizes instruction according to the interests of the learner and the employer.

The SELF-FULFILLMENT MODEL

The need for self-fulfillment, as defined in the form and spirit of the self-fulfillment model is to assist the learners in the pursuit of interests that he or she feels are significant. The learner is encouraged to pursue these interests and to allow the learner himself to determine the direction and pace of his own learning. The self-fulfillment model is a true application of the learner-centered approach to learning. The learner is encouraged to pursue his own interests and to develop his own goals. The teacher acts as a guide, providing opportunities for the learner to pursue his own goals.

The continued pursuit of self-fulfillment can be facilitated by the following steps:

1. Identify the learner's interests and goals
2. Develop a learning plan
3. Provide resources and support
4. Evaluate progress

The continued pursuit of self-fulfillment requires the learner to take an active role in his own learning and to be guided by his own interests and goals.

REFERENCES


SUMMARY

In a survey of 1,000 adults, 70% indicated that they would be more likely to continue learning if they were given the opportunity to pursue their own interests. This desire for self-fulfillment is a key factor in the success of self-directed learning programs. The key to success is the active involvement of the learner in the learning process. The learner must be allowed to take control of his own learning and to pursue his own goals. The teacher must act as a guide, providing support and resources to help the learner achieve his goals.

NEW PICTURE EDITOR

We would like to welcome Joe Salab to the Agricultural Education Magazine editorial staff. Joe is a teacher at the University of California and has been at Cal Poly for six years. Joe is an energetic, enthusiastic teacher and will do his best to give us the best picture possible in the Magazine. He will need all our support by sending him photographs at any time and photos (for a particular theme three months in advance). We would like to extend our hearty thanks to Paul Newell for a job well done in the past. We wish him well in his new position. — Ed.

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STORIES IN PICTURES

by Joe Sabol

Ella Young Farmers Lindsey Frost and Jim Brey are shown demonstrating the farming qualities of wheathead ammonia. The rope was tied around the farmer's neck and then pulled against the side of the field. (Photo courtesy Dan Brown, Ye-Ag Instructor, Ella, OH)

Gene Mooney of Indiana Hills Community College, O'Fallon, IL, discusses a research paper presented jointly with Bob Stewart at the University of Missouri at the Fourth National AELC Agricultural Education Research Meeting held December, 1977, in Kansas City, Mo. (Photo courtesy Bill Richardson, Purdon)

Second year research student, Jessi Doerr, Ball State, plans a lemma of the school's feedlot operation. She has helped develop and improve the feedlot operations. With her is Dr. Ronald Burton, Acting Chairman of the Animal Industries Program. (Photo courtesy Walsh Brothers, Agricultural Education Service, Columbus, Ohio — Related story on page 36)

Ken Raleigh (right) prepares students to work in packing plants, greenhouses or restaurants in the 38-week meat processing and marketing program at Texas Tech Technical Institute, Weslaco, TX. (Photo courtesy Ken Raleigh and Carla, Weslaco, TX)

Vo-qty students from the Natural Resources Technician Program at the State Dept. of Natural Resources, 13-year old students in recreational safety education and in the gun safety program. (Photo courtesy David Wren, Vo-qty. Tech. Inst., Brainerd, Minnesota — Related story on page 314)

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