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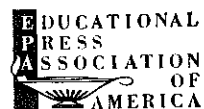
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Editorials

What Adult Education for Whom?

We have always said that adult education should be a part of a program in vocational agriculture. In fact, many have said that no program is "complete" without adult education. Put positively, we have gone on the assumption that adult education in agriculture is needed anywhere there is a Department of Vocational Agriculture. This is what we have said.

Whether our actions have been equal to our words with regards to adult education in vocational agriculture through the years, is a matter of judgment. Perhaps the more specific evaluation of programs in the years ahead will give us more information for basing judgment. Certainly, the obvious evidence of numbers enrolled, publicity given, and other similar criteria would raise considerable question whether we do in reality support our praise of adult education with our time and effort. For example, when enrollments by states were readily available, the annual Federal Reports revealed that we frequently enrolled twice as many boys as adults in vocational agriculture. If we took seriously the long-held view that the controlling purpose was "proficiency in farming," it would seem that these enrollments would have been reversed.

Now that we are entering a new era of "Agriculture Is More Than Farming," will we do any better by adult education? Will adult education receive higher priority on the teacher's time than in past years? We cannot answer this question, but we can do some projecting, as the economists do, by assuming certain "givens." These include whether we confine our efforts in adult education to farmers or broaden the base of clientele as we have tried to do with high school programs. Apparently there are more farmers in any community where there is a department of vocational agriculture than will be "reached," if we cared to concentrate on adult farmer education.

Another "given" is the extent to which the post-secondary institutions rapidly developing in most parts of the country, will include adult education in agriculture as part of their program. An important decision is whether these institutions on an area basis, and the local vo ag program on a community basis will be partners in developing adult education programs in agriculture.

Another "given" is to what extent the local high school will "see" adult education in agriculture as an essential part of its modern public education program. As we move to larger schools covering larger geographic areas, adult education can easily fall by the wayside unless given high priority by the school administration as well as the teachers of vocational agriculture.

One other "given" will be mentioned, although there are many others. That is, the ability of the teacher of vocational agriculture to become a modern adult education leader. This may be the most important. To become a leader in adult education now demands much more than the ability to teach a series of lessons on the latest recommendations from the agricultural college.

It is suggested that we can see what adult education will look like in the years ahead if we examine the position that we take on the "givens." For example, look at the last one listed. If the teacher of vocational agriculture continues to limit his adult education efforts to teaching a few farmers in a commodity course each year, then adult education will slide further down the priority list. On the other hand, if the teacher can become a coordinator of adult education programs where specialists are employed to teach in the areas of special needs of those in modern agriculture, while he studies "the bigger picture," so that all efforts may be most valuable, adult education can become the most important phase of vocational agriculture in the future. The bigger picture will include an understanding of the socio-economic conditions and trends affecting agriculture. For example, the population status and trends may be the key to all agricultural problems in the community.

Finally, it is suggested that the teacher and all others who are promoting adult education must also be participants in adult education, for themselves. The teacher or other leader who fails to see the need of further education for himself will likely fail to see the educational needs for today's adults.

—Cayce Scarborough



Cayce Scarborough

Theory and Practice

Someone said that no one in Agricultural Education was for adult education except a few teacher educators here and there. Is this the case? Don't we really believe in adult education as an essential, high priority phase of any program in vocational agriculture? Or is adult education an "after-hours" activity to be done by the teacher if he cares to stretch his day a few hours longer? How do we answer such questions, if we do. Individual? State staff? U.S. Office? Maybe we are schizophrenic. At a state meeting of home economics teachers a few years ago, the state supervisor explained that all teachers were required to conduct one or more adult classes. At the same conference one of the assistant supervisors gave a report showing that a sizable number of the teachers held no adult classes during the year.

Only complaint among the favorable responses to the changed look for the magazine beginning with the new volume in July was for the return of the 3-hole punch. Since many prefer the magazine without the holes, maybe we can all be happy if those wanting the 3 holes for use in a loose-leaf notebook will punch their own. You must have a punch around there some place!

The certificate for "Teacher of Teachers" to recognize those teachers influencing students to also become teachers of vocational agriculture is an interesting development. Why do some teachers have such a strong influence in this direction, while others have none, or possibly a negative influence. I understand that a study of the teachers in Ohio influencing a number of boys to study Agricultural Education has been made. Maybe the findings would make an interesting article in this magazine. Have other states made similar studies?

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Theory and Practice

(Continued from page 75)

The Space Age has come to the farm in the form of **Space Conditioning**. This term refers to modifying the environment on a somewhat permanent basis, such as Space Conditioning a broiler house. It is predicted that we will be hearing much of this term in the years ahead.

This is the day of **Ad-Hoc Committees**. I heard that we had one on terminology. Have they reported? Maybe we need to follow the example of one group that I know. They have a "Committee on Committees" to help keep all the committee work coordinated and that the membership will know what committees are at work on what problems.

Notice in **News and Views** that a large number of changes have taken place among us. More since this was gathered by M. G. McCreight. Perhaps these changes, particularly across state lines, and sections of the country, will benefit not only the individuals but our profession as well. When ideas are exchanged new ideas may develop. Gone are the days when a state manned the entire program with its own sons, untainted by contact with programs and universities outside of its borders.

Lt. Gov. Robert Scott told the North Carolina Teachers of Vocational Agriculture at their state conference that it was a poor person who would not stand up for his profession. Agree. But how can a person stand up for his profession when he does not belong or not active in his professional organization, does not read his professional magazine, and therefore knows very little about his profession?

Thanks again for your communications. They make editing your magazine a pleasure. See you next month.

Cayce Scarborough

Cover Page Story

As a result of adult farmer class instruction Mr. Glen Zimmerman and wife Ruth have established a herd of 85 purebred Holsteins and developed a system of marketing 75% of his milk production through bulk container direct sales. Ruth utilized adult class instruction to become efficient in the keeping of all of the records including the D.H.I.A. operations. L. to R: Ray Dutrow, Vo Ag Teacher, Western High School, Mifflinburg, Pa.; adult class member Glen Zimmerman and his wife Ruth; Bill Williams, Vo Ag Teacher at Western High School.

NEWS AND VIEWS

M. G. McCreight, University of Nebraska

Ralph P. Barwick, Head Teacher Trainer, Uni. of Delaware received his Doctor of Education Degree at the Pennsylvania State University.

Paul J. Foster was recently appointed State Director of Agricultural Education in Colorado. For nine years prior to this appointment he was an assistant supervisor and section head of Agricultural Mechanics and Adult Education in Colorado.

Harold Anderson returned to Colorado to fill the position vacated by Paul Foster. Mr. Anderson had been on leave for one year working toward a Ph.D. in Ag. Education at Ohio State University. Prior to his leave he was a member of the Teacher Education staff at Fort Collins.

Stan Lancaster is the newly appointed head for Agricultural Science and FFA Education. He is also executive secretary of the Colorado FFA Association. Prior to this new assignment, Mr. Lancaster was teacher-coordinator of the Pilot Program in Off-farm Agriculture developed at Greeley, Colorado.

Lloyd Lawson, former FFA Executive Secretary, is now Director of Manpower and Technical Education programs in Colorado.

Dr. James T. Horner was promoted from Associate Professor to Professor of Agricultural Education and to the Graduate Faculty. He is Chairman of the Department of Agricultural Education at the University of Nebraska, and has just returned from a year's leave for post doctoral study at Michigan.

U. E. Wendorff specialist in farm mechanics at the University of Nebraska was promoted from Assistant Professor to Associate Professor.

Alan Kahler joined the Agricultural Education at the University of Nebraska in February 1966. He received his Master's degree at Iowa State University and has nearly completed work for the Ph.D. at the same institution. He taught Vo. Ag. at Pierce, Nebraska for five years.

Roland Peterson, Department of Agricultural Education, University of Ne-

braska, has a change of title from instructor to research associate.

Robert Mason, Department of Agricultural Education, has been promoted from graduate assistant to instructor. He received his master's degree in June 1966. Mr. Mason will be coordinator of the Farm and Ranch Operators short course. This program is now a part of the department of Agricultural Education.

Tom Lyons, research assistant in Agricultural Education at the University of Nebraska, will have a similar position at Colorado State University in 1966-67.

Dr. John K. Coster, Professor of Agricultural Education and School Administration at the University of Nebraska since 1964 has been appointed effective July 1, 1966, Director of the Center for Occupational Education at North Carolina State University at Raleigh.

M. G. McCreight, Assistant Professor of Vocational Education at the University of Nebraska, has been promoted to Associate Professor.

In Washington

Agricultural Education staff in the State Vocational Services Branch, (Messrs. Neville Hunsicker, John Lacey, Paul Gray and John Farrar), met with Agricultural Field Representatives, Mr. Jesse Taft, Boston (I); Dr. M. C. Gaar, Atlanta (IV); Mr. Homer Edwards, Chicago (V); Mr. Bryan Rawls, Kansas City (VI); and Dr. Joseph K. Bailey, Denver (VII). The chief purposes of the meeting were to develop a projected program of activities of the National staff in agricultural education. The program included specific objectives and ways and means for further developing such items as: technician training in agriculture; adult education; persons with special needs; teacher education; evaluation; research; FFA; high school program; improvement of supervision; manpower training and facilities. Dr. Walter M. Arnold, Assistant Commissioner, and Dr. Edwin Rumpf, Director of the State Vocational Services Branch, also met with the staff and discussed new and emerging programs and common problems.

"With the 'New Look' in Vocational Agriculture Do We Have Anything To Offer Adult and Young Farmers?"

HARRY E. FRANK, Instructor, Agri. Educ., Oklahoma State University

Is there still a real need for adult and young farmer classes to be offered by local vocational agriculture departments?

This question is often in the mind of prospective and beginning vocational agriculture teachers. If the answer to the question is not in the affirmative, perhaps it would be better to discontinue the adult program and intensify our efforts with other phases of vocational agriculture.

Teachers who have conducted well planned programs with adult and young farmer groups contend that the efforts expended with this phase of the total vocational agriculture program have been educationally effective. Numerous studies have shown that the success or failure of adult and young farmer programs has been greatly influenced by cognitions held by the local vocational agriculture teacher as to self-held concepts of his role in providing adult educational activities through the local department. If the attitude of the teacher is favorable, it seems reasonable that some type of program could be carried out to accomplish and advance the agricultural education of adults in any community where vocational agriculture is included in the public school curriculum.

Some Principles

If we consider the principles of adult learning most appropriate for achieving optimum effectiveness we may find the local setting to be the most favorable location for the implementation of educational activities. Jack R. Gibb, Director of Research, National Training Laboratories in the **Handbook of Adult Education in the United States**, has listed the following principles for adult learning to obtain optimum effectiveness:

Learning for adults must be experimental and problem centered with meaningful experiences that the learner is free to examine. The goals must be set and the search organized and initiated by the learner who must then have feedback about progress made toward goal accomplishment. Let us keep these principles in mind as we consider what we have to offer adults and young farmers.

Local Vocational Departments Can Offer:

1. Programs based on local needs.
2. Opportunity for participation in planning and conducting educational activities.
3. Close acquaintance with participants.
4. Attention to individual problems. Meaningful learning.
5. Education without excessive costs.
6. Advantages of small group instruction. Discussion by members.
7. Opportunities for social contact in educational setting.
8. Ego satisfying experiences through contributions to class.
9. Leadership development opportunities.
10. Presentations by local and other resource persons.
11. Recognition of individual innovations.
12. Opportunities to learn from experiences of others.
13. Opportunity to utilize educational facilities more fully.
14. Conveniently located educational opportunities.
15. Supervised visits including feedback on progress.
16. Opportunities for group action on common problems.
17. Opportunity to keep abreast of technological developments.
18. Opportunity to be acquainted with current developments.
19. Social activities to promote community solidarity.
20. Opportunities to encourage youth to continue their education by example.

Although this is not an exhaustive list, it does bring to mind many of the things that have made the adult portion of the vocational agriculture programs educationally effective in the past.

A Dilemma

A recent announcement in the NVATA Newsletter about an attractive position which a successful teacher of vocational agriculture might fill, illustrates a very interesting dilemma facing our profession. Jim Wall summed it up in his note to the announcement when he said "We need to keep all of our personnel in Vocational Agricultural Education. However, if you believe you may be able to be of even greater service to our profession in a closely related area, you are urged to contact"

This "out-migration at the top" has been overlooked in the concern about a general shortage of teachers. In some states this is a major factor in the shortage, rather than a smaller supply of new teachers. An additional loss is that the out-migration is usually of the teacher considered more successful. Frequently he is also the teacher who chose to secure his master's degree. We frequently take pride in these men, while frantically searching for replacements as local teachers of vocational agriculture.

Another modern dilemma facing the profession as well as the individual teachers involved.

Cayce Scarborough

Teacher Competency

It seems that concern has developed among some vocational agriculture teachers about teacher competency in this era of rapidly changing technology. Farmers and stockmen who attend adult classes have not in the past and do not now expect the local teacher to be an authority in all phases of agriculture. They do expect him to be able to help plan programs and assist in securing persons who are knowledgeable in special areas and to assist in presenting the specialized learning for which they feel a need. Numerous teaching aids and resource persons are available if the local teacher does not feel competent to provide leadership in all learning experiences indicated.

Another major concern of teachers, according to a recent survey, is class attendance. When teaching vocational courses for all-day students most teachers agree that small classes are desirable for learning experiences. Should this not also hold true for adults? The numbers of persons attending adult and young farmer classes should not be the sole criterion for evaluating adult educational activities. They should be evaluated on the basis of the effective learning that occurs.

Summary

The adult phase of vocational agriculture can continue to serve an important function in providing education for those engaged in all areas of agriculture, traditional and new. Effective learning can be accomplished by utilizing the inherent advantages provided through the local departments; namely—teacher competency, resource persons, and the extensive involvement of participants in adult educational activities.

The Instructor of Adults As Coordinator of Informational Resources

PHILIP L. EDGECOMB, Assistant Professor of Education,
Vocational-Technical Education Department, Graduate School of Education,
Rutgers-The State University.



Philip L. Edgecomb

The instructor of adults has a role in agriculture similar to that of the general practitioner in medicine. The medical general practitioner has continuous contact with his patients and a general understanding of their entire medical history; he refers the more complex technical problems to a specialist. It should be noted that he often sends his patients to the specialist for observation; some cases require active participation by the medical specialist. The general practitioner and the specialist establish a consulting relationship for the ultimate maximum benefit of their patients. The instructor of adults must also maintain continuous contact with his students. He must have a sound understanding of their problems, goals, and capabilities. His contribution depends on his ability to coordinate the available agricultural information resources with practical farm problems. Moreover, he must know when to seek out information and when to involve the agricultural specialist in the analysis of specific farm problems.

Agricultural Specialists

It has been advocated by some that an instructor of adults should become a subject matter specialist. However, he is needed by farmers as an educator who can interpret research findings and coordinate the resources of specialists; his role should not be confused with the subject matter specialist who devotes his energies to depth within a specific technical area. It should be noted that instructors who specialize in horticulture, dairy, farm management or farm mechanics are not subject matter specialists; they are the agricultural general practitioners of a new era in agricultural education. They must be complimented by numerous specialists who have a depth of technical knowledge within specific contributing areas. If a status seeking title is needed, the instructor could be called a 'human engineering specialist' or a 'farm management consultant'. However, performance is more important than the title because superior performance enhances any title.

Teaching the basic fundamentals of problem solving is a primary goal of the instructor. He supplies information and specialists; then he assists the farmers with their problem solving activities. Individualized instructional visits on the farm may be the springboard to formal instruction in the classroom. The procedure is similar to the supervised study sessions within the program of vocational agriculture in the high school. It is from this valuable educational service that the farmer can reject or select and apply agricultural information resources to his management problems. The instructor devotes his energies to perceiving the total management problems and how the resources of various specialists contribute to the overall solution of John Jones' specific problem. The results attained from the coordination of agricultural information resources with the problem solving activities of farmers and other agricultural businessmen will determine the economic importance of agricultural education in the future.

Utilizing Specialists

The adult instructor must establish a meaningful dialogue between the farmer and the specialist. An understanding of the role and contributions of each will improve effective communications. Specialists rely on farmers for their reactions to the practical application of research. Farmers depend on specialists for the latest technical information. The specialist must recognize the problems involved in applying his technical information to specific situations. It could also be a waste of time and money for a farmer to indicate that he was planning for a \$20,000 innovation when the management plan couldn't exceed \$1,000. If the farmer is not realistic while talking with the consulting specialist, then it is possible that the recommendations will be impractical. During the specialist's first visit, the adult instructor may have to tactfully contribute questions or divert the conversation to provide a meaningful dialogue. The adult instructor may have to be the catalyst between the farmer and the specialist.

Three groups of specialists are available to instructors and farmers. They are (1) public sponsored research and extension specialists, (2) commercially sponsored specialists and/or salesmen, and (3) farmer specialists. The research specialist provides information that is too new to have been accepted by farmer innovators; he will usually follow through with applied research on a pilot basis. Demonstration trials will be conducted by his co-worker in agricultural extension. The commercial specialist often relies on the public institutions for the basic research; he applies the basic research information in trial programs for their advertising value and for added information to improve his services. The farmer specialist is usually an innovator. He tries a new idea several years before it is accepted by the average farmer in his area; his experience with the innovation under local conditions is invaluable. The researcher may develop a new variety of corn. After the variety has been tentatively accepted, the commercial specialist and the extension specialist may perform trial tests with the new variety. The farmer innovator often provides the practical conditions for the trial tests; he is among the first to modify, adopt, or reject new practices. The resources of all three groups of specialists can increase the effectiveness of the adult program.

Interpreter of Information

Interpretation and presentation is vital to the rapid expansion of technological knowledge which has reduced the 'half-life' of agricultural information to approximately ten years. The advances and changes in agricultural chemicals within any one year period are staggering; and the use of an outdated chemical, that was on the recommended list two weeks ago, could result in the condemnation of a farmer's production for an entire year.

An annual report had very little impact when the plant nutrient deficiencies of commercial fertilizers were reported in statistical percentages. However, the information was meaningful when the deficiencies were converted to

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How To Get 'Em Out And Keep 'Em Coming

GENE CLAVER, Vocational Agric. Inst., Bayard, Nebraska



Gene Claver

How many meetings should an adult class have? How often should they meet? Can adult classes compete with other activities in the community? Does the vocational agriculture instructor have time to conduct adult classes? Is it difficult to get members to attend? The answer to these questions and many others often times stop the adult class before it gets started.

If we are going to successfully conduct adult classes we will be competing with every other organization, social event, recreational activities, business meetings and other adult education classes provided in the school and community. Do these activities recruit their membership in every imaginable manner only to give them a short introduction to a subject and then drop them at the end of a minimum ten week period?

If we eventually get a program started and have convinced the members of giving up one night per week of their time to the class, wouldn't it seem logical that they would continue to attend the meetings if they are run for 30 weeks instead of the minimum of 10 weeks?

Philip Edgecomb

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dollar values. It indicated that some farmers could have lost as much as \$14.63 on each ton of fertilizer because certain fertilizer companies failed to provide the guaranteed amounts of plant nutrients in their fertilizers. The instructor's role as an interpreter was meaningful.

During this technological explosion, the adult instructor must have more and better information resources. His library must be larger and his contact with specialists must be greater. He must lead the way in utilizing computerized methods of analyzing information. It is an understatement to say that his comprehension of all facets of practical farm management problems must be greater. He must provide the setting so that the great mass of informational resources can be utilized to the maximum possible degree.

With additional time we could attempt to develop skills to some degree of proficiency in the adult class, as we do in our day students. If we do not develop this proficiency to the satisfaction of the adult member through some form of supervision, he will leave dissatisfied with the course, and probably will be unlikely that we will get him to participate in such a waste of time again.

Recruiting members for an adult class.

1. *Put an article in the local newspaper.* Very few members are actually recruited this way unless they have attended previous adult classes and have been satisfied with the results. However, it puts the program before the community, indicating at least an attempt is being made to get an adult program started.

2. *Personal invitation.* This is more time consuming but in most cases the best method. When visiting with the individual, inquire about friends or neighbors that might be interested. Also indicate other members that are planning to attend or have attended in the past. If the individual knows someone

else attending he will feel much more at home and more likely to attend.

3. *Send out information letters.* Send a form letter to adults who have previously attended. These individuals already are familiar with you and know how you operate adult programs but still they need a reminder, generally more than the local newspaper. In the letter is also a good time to ask them to bring a friend or neighbor that might be interested.

4. *Send a letter to last year's vocational agriculture graduates.* Along with their interests in agriculture, many of these students will participate merely because you have indicated that they are now adults. In most cases they will be proud to be a part of an older group.

Although many other methods of recruiting could be mentioned these are probably a few of the most important ones.

Continuing the adult program

If you're at the point now where you have succeeded in getting the members to give up two hours of their time on a specific night of the week, they will continue to plan for this.

In most communities the program can be started about the middle of October and carried to the middle of May. The old idea that farmers are too busy except for a few weeks in the middle of the winter is false. It isn't any harder to get them to shut off the tractor or start chores a few minutes early as it is to pull them away from a warm fire and T.V. program during the winter, and attendance is just as good if not better in many cases.

If your starting time is a little early for most of them to meet in the fall and spring adjust it to fit them. The time they go home will be the same anyway—when the coffee pot's empty.

Speaking of refreshments, this is one of the best ways to assure you that they'll be back next week. This gives everyone a chance to talk over their problems, tell how they would do it, and generally get better acquainted with the rest of the class members.

Summary

Instructors of adults should coordinate all of the valuable resources of agricultural information. They help the farmer analyze biased and unbiased information, so that he can select and apply the best solution to his specific management problems. The educational service may require a review of publications, a telephone call to a specialist, active specialist involvement, discussions with other farmers, and problem solving sessions with the student. The adult instructor must lead the way to the expanding volume of information before it is published, while it is being published, and after it is published. The adult instructor of the late 1960's must devote full-time to the adult program if he is going to be a partner in agricultural progress during the 1970's.

An Agricultural Supply Curriculum At the Post-High School Level

GERALD R. FULLER
Assistant Professor, Agricultural Education
University of Illinois



Gerald R. Fuller

The rapidly increasing demands of production agriculture upon industry are making formal education beyond high school a prerequisite for entry into and advancement in nonfarm occupations where a knowledge of and skill in agriculture is required. Appropriate vocationally oriented post-secondary education of less than a baccalaureate level can meet the needs of many young men and women who wish to enter the field of agricultural supply technology.

Teaching

The suitable content of basic disciplines such as biology, botany, physics and chemistry need to be identified and taught as it relates to production agriculture. This teaching must apply the content to the specific techniques associated with occupations in the agricultural supply function of industry. The product of an educational program of this type should be men and women who can (1) apply basic principles of science to their field of specialization, (2) understand the materials and processes commonly used in their field of specialization, and (3) effectively communicate facts and ideas within their field of specialization.

An effective agricultural supply technology curriculum will contain courses that must be taught by certified teachers who are agricultural specialists. Supporting courses in the curriculum should be taught by certified teachers who are specialists in their areas and who possess the knowledge and understanding of agriculture needed to apply the subject matter content to agriculture. Until certified teachers who possess the necessary knowledge of agriculture are available to teach supporting courses, certified teachers who are agricultural specialists and possess competency in the subject area should provide the instruction.

Courses

An effective agricultural supply technology curriculum will provide students with an opportunity to specialize in either plant science agricultural supply technology, animal science agricultural supply technology, or both. In addition, specialization should be possible at the occupational level of manager and supervisor, salesman, skilled worker or clerk.

Figure 2.—Agricultural Supply Technology Curriculum

	Quarter offered	Quarter-hours credit
Core (all students)		
Basic agricultural communications	1	3
Livestock production science	1	4
Agricultural business operations	1	3
Office procedures	1	3
Advanced agricultural communications	2	3
Basic agricultural computations	2	3
Crop production science	2	4
Agricultural products marketing	2	3
Advanced agricultural computations	3	3
Rural living	3	3
Basic agricultural salesmanship	3	4
Practicum	summer	5
Seminar	summer	5
Plant health	4	4
Agricultural business law	4	3
Farm management	4	3
Animal health	5	4
Agricultural personnel relations	5	3
Agricultural business management	5	3
Advanced seminar	6	3
Agricultural research procedures	6	3
Total		72
Animal Science Specialization (students select one area)		
Agricultural mechanics	1	5*
Agricultural buildings and conveniences	2	5*
Financing farm businesses	3	3*
Agricultural facilities maintenance	3	5*
Chemistry of feeds	4	4*
Animal nutrition	5	4
Animal breeding	6	4
Livestock chemicals	6	4*
Total		34
Plant Science Specialization		
Agricultural mechanics	1	5*
Agricultural buildings and conveniences	2	5*
Financing farm businesses	3	3*
Agricultural facilities maintenance	3	5*
Plant nutrition	4	4
Plant and soil chemicals	5	4*
Chemistry of fertilizers	6	4*
Plant breeding	6	4
Total		34

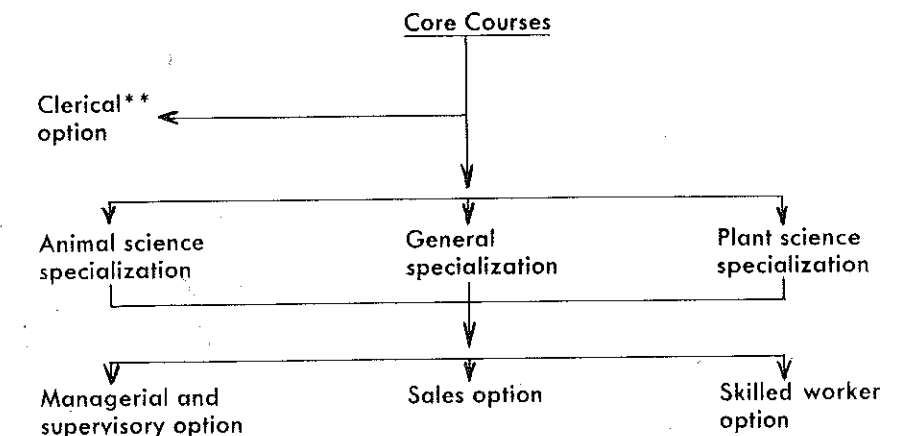
* Courses common to two or more specializations or options.

A suggested comprehensive, rigorous agricultural supply technology curriculum has been outlined based upon the findings of the Technical Education In and For Rural Areas study conducted in Illinois. This curriculum contains a common core of instruction appropriate for four occupational levels and three areas of specialization as illustrated in Figure 1. Specialization is provided in the areas of plant science, animal science or a combination of both beginning in the fourth quarter. Each of these options contains 118 to 120 quarter hours of course work depending upon the occupational level. Options for the managerial and supervisory, sales, and skilled worker occupational levels also begin in the fourth quarter. Specialization for the clerical occupational level begins in the first quarter. This one-year option contains a total of 64 quarter hours of instruction. The technical agriculture

Figure 2, Continued

	Quarter offered	Quarter-hours credit	**one-year option
General Specialization			
Agricultural mechanics	1	5*	
Agricultural buildings and conveniences	2	5*	
Financing farm businesses	3	3*	
Agricultural facilities maintenance	3	5*	
Chemistry of feeds	4	4*	
Plant and soil chemicals	5	4*	
Chemistry of fertilizers	6	4*	
Livestock chemicals	6	4*	
Total		34	
Clerical Occupational Option			
Business typing	1	5	
Bookkeeping	1	5	
Business machines	1	4	
Accounting	1	4*	
Total		18	
Managerial and Supervisory Occupational Option (students in each specialization select one option)			
Agricultural advertising	4	4*	
Agricultural business administration	5	4	
Agricultural personnel management	6	4	
Total		12	
Sales Occupational Option			
Agricultural advertising	4	4*	
Advanced agricultural salesmanship	5	4	
Accounting	6	4*	
Total		12	
Skilled Worker Occupational Option			
Agricultural electrification	4	5	
Agricultural machinery	5	5	
Agricultural power	6	5	
Total		15	

Figure 1.—Schematic Outline of Suggested Agricultural Supply Curriculum



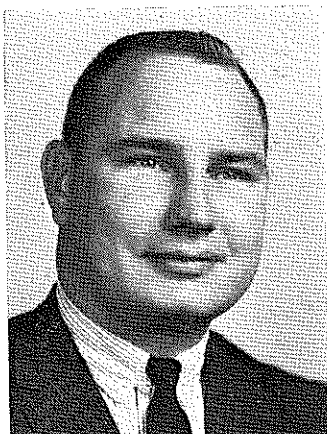
courses account for nearly 70 percent of the instruction with appropriate supporting courses in businesses, communications, mathematics and rural sociology accounting for the remainder as shown by Figure 2.

Conclusion

The purpose of an agricultural supply technology curriculum is to educate young men and women so they will be able to apply a knowledge of agriculture, a knowledge of physical and biological science as applicable to agriculture, an understanding of the sociological makeup of rural areas and an understanding of the operation of agriculturally oriented firms to the job of furnishing farmers with the appropriate supplies and services made available by industry. The results of the Illinois study indicate the task of preparing people for employment in the agricultural supply functions of industry is not a simple one. Few, if any institutions can start with a curriculum as all-embracing as the one which research indicates to be appropriate. It is hoped that the suggested curriculum and teaching approach will serve as a guide for long term planning to those developing either a specialized or a comprehensive agricultural supply technology program.

* Based upon: Fuller, Gerald R. *Agricultural Supply Curriculum, Post-Secondary Level, Technical Education In and For Rural Areas Study Preliminary Report No. 3*. May 1965, Agricultural Education Division, University of Illinois, Urbana, Illinois, 61801 (50¢).

National FFA Fellows Grad Students at Maryland



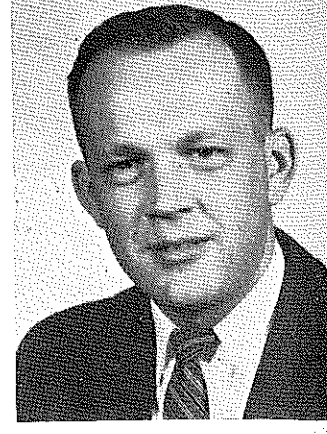
George White



Charles Reed



Robert Hearne, Jr.



Robert Seefeldt

Four outstanding teachers of vocational agriculture have been awarded National F. F. A. Fellowships for study at the University of Maryland during 1966-67. They are Robert B. Hearne, Waverly, Tenn.; Charles W. Reed, Gordo, Ala.; Robert A. Seefeldt of Ivanhoe, Minn.; and George L. White, Goodwater, Ala.

The fellowships are provided by Massey-Ferguson, Inc. of Detroit to make it possible for present and prospective leaders in the Future Farmers of America organization to prepare themselves for positions as state executive secretary and other leadership positions in the F.F.A.

The training program includes graduate study in agricultural education at the University of Maryland and part-time observation and participation in the activities of the national F. F. A. office. They also will interview officials in the national headquarters of various farm organizations, educational associations, other youth programs, the Congress, and other governmental agencies. They will also attend the national F. F. A. convention in Kansas City, Mo., in October, and at least one state F. F. A. convention.

Each of the four fellowship recipients has had experience as a teacher of vocational agriculture. During the past year Hearne taught at Waverly, Tenn. After graduation from the University of Tennessee he taught at three different high schools in west Tennessee. During his five years of teaching at Grove High School, he was elected the state president of the Tennessee Vocational Agriculture Teachers Association and represented that group at several meetings including two AVA and NVATA con-

ventions. His chapters received superior ratings, won the State Cooperative Institute award twice, won second in Sears livestock program in Tennessee, and placed in most of the other contests available in Tennessee. Last year, besides operating a chapter farm of 65 acres and teaching 88 boys, he held four courses for adults, a total of 144 hours of adult instruction. He is married and has five children.

Reed graduated from Auburn University (Ala.) in 1960 and after serving in the Army from 1960 until 1962 began teaching vocational agriculture at Gordo, Alabama. In 1965 he received the honorary state farmer degree. His chapter has won first place in the state forestry contest for two years, second place in the state poultry contest, has had one state officer and five state farmers. Besides having an active F. F. A. chapter, he has worked with Boy Scouts and has been a Sunday school teacher.

Seefeldt was graduated from the University of Minnesota in 1959. He began teaching vocational agriculture at Ivanhoe (Minn.), where he has taught during the past five years. Besides being an active teacher he has been busy in community life and activities. He has served as president of his systems education association and also president of the Ivanhoe Community Club. He is married and has an eight month old child.

White received the B.S. in agricultural education from Auburn University in 1959 and M.A. in education in 1964. Since 1960 he has taught agriculture at Goodwater, Ala. His chapter has constantly placed high in public speaking, livestock judging, land judging and dairy judging as well as being active in numerous other activities. The vocational

agriculture program has been broadened by including an agri-business course in forestry, sales, services and mechanics. His civic activities have included scout master, teacher of Sunday school class, and the school's junior class sponsor for the past five years. He is married.

Vocational Education

The concept of vocational education has been bombarded with a variety of definitions. In general, most educators agree that vocational education is concerned with learning to work. However, there are many divergent opinions about (1) the types of learning experiences which should be included in vocational education, (2) the occupational areas in which vocational education should be provided, (3) the administration and financing of vocational education, and (4) who should be allowed to take vocational education.

Vocational Education can be defined in a broad theoretical framework as organized preparation provided by qualified instructional means; intended primarily to contribute directly to the acquisition of such attitudes, understanding, and skills as are necessary for choice, competence, and advancement in a particular occupation or a group of related occupations.

A vocational education teacher is one who plans, directs, and supervises the selected learning experiences and activities which can be encompassed under the term vocational education.

—Harold Rose,
Florida State University

Is Farm Business Analysis Appropriate Adult Education?

HAROLD DEAN KNEWTSON, Vo Ag Instructor
Southeast Kansas Area Vocation-Technical School,
Columbus Division, Columbus, Kansas



Harold Knewtson

Is farm business analysis instruction meeting a need in our communities? Is the farmer's time involved in the keeping of detailed enterprise records and the instructor's time in completing the analysis paying off in terms of increased net farm income? Should I try to keep this program alive as part of my vocational agriculture department's offering to the community?

These were some of the questions I had in mind when setting up the study of the Farm Business Analysis Program in Kansas.¹

One hundred and seven young farmers from Kansas were given instruction in farm business analysis in 1963 and 1964. The problem was to determine if the rate of change in farm income of young farmers in Kansas was accelerated during the time they received instruction.

Three Groups

Three groups of farmers were selected for the study. A random sample technique was used to select fifty young farmers that had received instruction in farm business analysis. An interview was used to determine net farm income for the years of 1960 through 1964. Net farm income figures for the same period from the Kansas Farm Management Summary² were used for one comparison group and the realized net farm income per farm for the state of Kansas was taken from the Kansas State Board of Agriculture Reports³ for a third group.

Findings

The findings of the study are summarized in figure 1. During the years 1960 through 1962, average gain per year was \$693, \$309, and \$722 respectively. It was predicted that net farm income would continue to increase at these rates or that variation would be at constant rates for each group. The predicted income level is shown by the broken line.

For the years 1963 and 1964 the net farm income increased at the rate of \$164 per year for the farm business analysis group. A reduction of \$1799 and \$541 per year was found for the farm management group and the state average

group respectively during the same two years.

The variance in farm income and in the rate of change were tested at the .05 level of confidence by analysis of variance and the t Test. No significant difference was found between the state average group and the farm business analysis group for either the amount of change in net farm income or the variance from the predicted rate of increase.

The farm management group was found to have a significantly higher net farm income during the first three years when compared with either of the other groups. The variance from the predicted rate of change for the farm management group was significant when compared with the farm business analysis group and not significant when compared with the state average group.

Conclusion

From the results of the study, it was concluded that since the net farm income of the farm management group

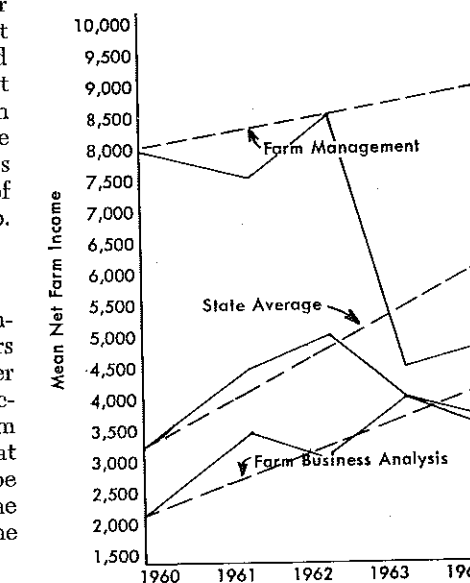


FIGURE 1
ACTUAL NET FARM INCOME AND
PREDICTED NET FARM INCOME FOR 1963
AND 1964 BASED ON 1960 THROUGH
1962 ACTUAL NET FARM INCOMES.

varied significantly from the other groups for the years 1960 through 1962 it should not be compared with the other groups during the last two years.⁴

Although some variance did occur in favor of the farm business analysis group, it was concluded that no significant differences had occurred in the rate of change of farm income after farm business analysis instruction was offered.

During the study a general improvement in methods of record keeping was noted. Most of the farmers were using an organized system with metal filing cabinets rather than the "shoe box" approach which had often been the case before enrolling in the farm business analysis class. The farmers enrolled in classes seemed to have an increased knowledge of the financial status of their farm business and a favorable and cooperative attitude towards the vocational agriculture program in their school system.

I feel that the Farm Business Analysis Program is fulfilling a need that is not being met by any other group. I have had ten families enrolled in the course and hope to be able to continue offering the training to other families.

To make the program more effective, some means of financing to give the instructor more daylight time for the program needs to be developed. I feel one instructor could work at least half days on the program in many communities.

¹Harold Dean Knewtson, "Farm Income of Young Farmers Enrolled in Farm Business Analysis" (Unpublished Master's Thesis, Kansas State University, Manhattan, 1965.)

²J. H. Coolidge, "Farm Management Summary and Analysis Report," (Extension Service: Kansas State University, Manhattan, Kansas, 1963.)

³Statistical Division of the Kansas State Board of Agriculture, Kansas Agriculture: 1963 1964 47th Report (Topcka; State Printer, 1964), p. 89F.

⁴Knewtson, *op. cit.*

Research Studies Completed In 1965

GLENN Z. STEVENS, Pennsylvania State University



Glenn Stevens

Administration, instruction, and teacher education regularly have been the topics of large numbers of staff and thesis research studies in agricultural education. In the last four years many investigations have dealt with phases of guidance and with occupational opportunities and educational requirements (See also *Agricultural Education Magazine*, December 1964 and June 1965).

Publication of the list of authors, titles and institutions is a way to provide recognition for individuals and states. It gives members and graduate students access to current research. Microfilms of doctoral theses may be purchased from University Microfilms, Inc., Ann Arbor, Michigan. Copies of staff study reports often are furnished upon request without charge. Master's theses are available on inter-library loan.

The Office of Education, U. S. Department of Health, Education, and Welfare, in August 1965 published Supplement No. 16, Summaries of Studies in Agricultural Education. It contains 300-word abstracts of 144 studies completed in 1961-1963. The Research Committee of the Agricultural Division of the American Vocational Association, Gene M. Love, Chairman, has submitted similar manuscript copy for Supplement No. 17, to cover studies of national significance completed in 1964 and 1965. In addition to Dr. Love, the regional committee members who assist in assembling research study titles and abstracts from the states are Dr. Earl S. Webb, Texas A. & M. University, Dr. J. Robert Warmbrod, University of Illinois, and Professor Joel H. Magisos, Washington State University.

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(Continued, page 86)

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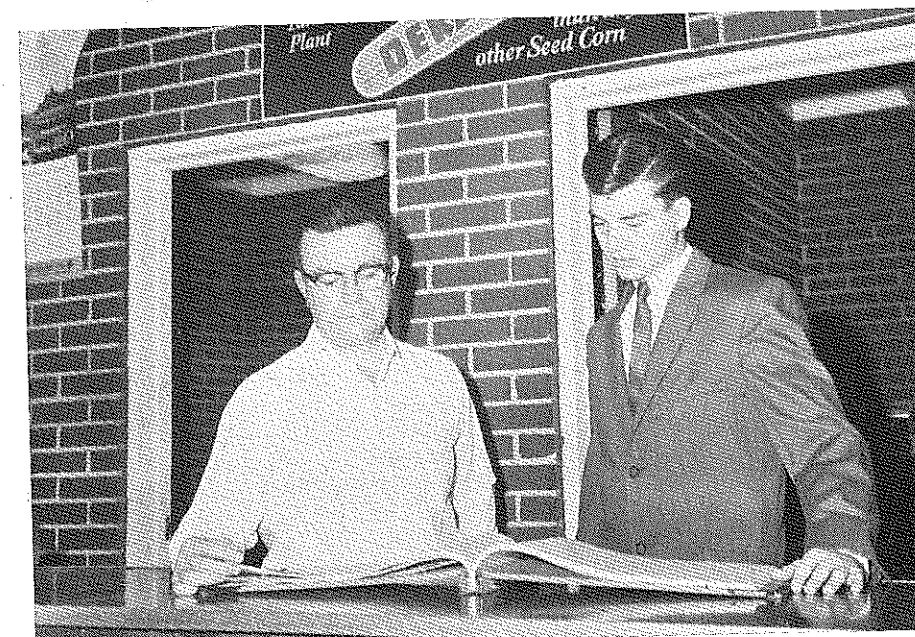
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Paul Fritschle (right) a student in the two-year Agri-Business Curriculum discussing the problems of business management with Mr. Garland Carpenter, Plant Manager, DeKalb Agricultural Association, Inc., Mt. Carmel, Illinois. This photograph was taken during the placement-employment phase of the student's educational program in agricultural supply technology. (Photograph Courtesy of Agricultural Technology Department, Wabash Valley College, Mt. Carmel, Illinois.)

(See Gerald Fuller Article, pages 80-81)

Book Review

Waters, Derek, *Forestry*, Pergamon Press Inc., 44-01 21st Street, Long Island City, New York, 11101, 1966. pp. 152, price \$3.95

This is a British publication, prepared to find out more about Britain's forests and the products derived from these forests. A rather elementary treatise of trees, the growing of trees, the forest scene, and timber. Factual, yet written in very simple layman's language.

Thirty assignments, each consisting of a number of activities that might be conducted by students, are detailed in the publication. These might furnish ideas that teachers might use to functionalize the subject matter.

A paperback, by no means the most outstanding among the publications available on the subject in the opinion of the reviewer, but could be a supplement to the resource library. The price seems a bit high for the type of publication, as compared to other available publications of a like nature.

No mention is made of who the author is, his professional status, and the like.

—Guy E. Timmons
Michigan State University

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Ober Anderson

What Competencies in Farm Credit Needed by Farmers?

Ober J. Anderson, Story County Extension Associate, Nevada, Iowa and Clarence E. Bundy, Teacher Education, Iowa State University.



Clarence Bundy

Farmers of Iowa possessed less competence than was needed in each of 43 competencies related to farm credit assumed to be needed by farmers. This finding was one of the results of a study recently completed at Iowa State University.

A basic list of 43 competencies needed for successful use of farm credit was compiled by consulting with a 16 member panel, composed of progressive

farmers, farm economists and representatives of several farm credit sources. Of the 43 competencies listed in Table 1, 17 were classified as abilities and 26 as understandings. These competencies were included in a questionnaire submitted to a random sample of 177 members of the Central Iowa Farm Business Association and 305 random sample farmers from the same 14 county area served by the association. These farmers

were asked to rate the degree of competency they needed and also the degree of competency possessed for each item listed. Ratings were on a five point scale with 5 meaning very much competency needed (or possessed) and 1 meaning no competency needed (or possessed).

An attempt was made to determine the relationships among the degree competencies were felt to be needed and possessed and certain characteristics of

Table 1. Degree that farm credit competencies were needed and possessed by Central Iowa Farm Bureau Association (CIFBA) members and by farmers in the random sample.

Rank ^a	Competencies—understandings Understandings needed (26 items)	Overall rank ^b (43 items)	Mean scores—understandings			
			Needed ^c CIFBA N=117	Possessed ^c N=117	Needed ^c Random sample N=94	Possessed ^c N=94
1	Importance of a good credit rating	1	4.6	4.3	4.4	4.2
2.5	Net farm income	6	4.3	3.7	4.1	3.7
2.5	Your repayment capacity	6	4.3	3.8	4.0	3.6
4.5	Importance of adequate operating reserves	13	4.2	3.4	4.0	3.5
4.5	Priority of claims on income	13	4.2	3.4	3.8	3.2
8	Capital and its relationship to other farming resources	22	4.1	3.3	4.0	3.3
8	Your own attitude towards "being in debt"	22	4.1	3.6	4.0	3.8
8	Risk and uncertainty of using credit	22	4.1	3.6	4.0	3.6
8	Methods of charging interest	22	4.1	3.8	4.0	3.6
8	Ratio of assets to liabilities	22	4.1	3.4	3.8	3.2
8	Relation of net cash income to liabilities	22	4.1	3.4	3.8	3.2
12.5	Procedures used in obtaining farm loans	28	4.0	3.5	3.9	3.5
12.5	Repayment terms and options	28	4.0	3.4	3.9	3.2
15.5	Need for consolidation of all loans	32.5	3.9	3.6	3.6	3.4
15.5	Loan security requirements	32.5	3.9	3.6	3.9	3.4
15.5	Legal terms used in notes, mortgages, etc.	32.5	3.9	3.0	3.6	2.9
15.5	Ratio of gross income to liabilities	32.5	3.9	3.2	3.6	3.2
15.5	A cash flow statement	32.5	3.9	3.0	3.5	2.6
20	Family living expenses	37	3.8	3.3	3.7	3.5
20	Purchase contracts for land, implements, etc.	37	3.8	3.1	3.7	3.2
20	Sales contracts for soybeans, beef, etc.	37	3.8	2.7	3.4	2.8
20	Rental and leasing arrangements	37	3.8	3.2	3.6	3.2
23	Relationship between farm and home credit	40	3.6	3.2	3.3	3.1
24	Credit life insurance	41	3.3	2.9	3.2	2.7
25.5	Availability of government emergency loans	42.5	3.1	2.3	3.0	2.4
25.5	Crop insurance as a means to reduce risk	42.5	3.1	2.9	3.2	2.9
	Overall mean score for understandings		3.9	3.3	3.7	3.3

^a Rank of understandings needed by association members (CIFBA)

^b Overall rank of understandings and abilities needed by association members (CIFBA)

^c 5=very much, 4=much, 3=some, 2=little, 1=no.

the respondents. These characteristics included age, areas of land operated, farming status (owner or renter), educational background, amount of 4-H and vocational agriculture experience, amount of credit used, gross farm income, net worth and participation in farm credit training.

Highest overall scores for degree of competence needed by both groups were found for the understandings of: importance of a good credit rating; net farm income; repayment capacity; and for the abilities to: keep complete and accurate farm records, analyze and interpret farm records and results; and distinguish between actual needs and mere desires. Respondents felt they possessed less competence than was needed in all of the 43 competencies.

Comparisons among groups indicated the following differences between total scores for competence needed and possessed; (1) association members had wider differences than random farmers; (2) farmers with fewer years of experience had nearly the same scores as those with more experience; (3) operators of larger acreages had wider differences than owners; (5) increased

years of education tended to decrease the difference; and (6) farmers with medium gross farm incomes had wider differences than farmers with low, or high gross farm incomes.

Several differences were also found among the background characteristics of the association members when compared to random sample farmers. For example, it was found that only 3 percent of the association farmers did not use any credit during 1964, whereas 12 percent of the random sample farmers indicated that they were debt free during that time. Association members were also found to have been more active in attending farm credit training programs, such as adult farmer schools and extension short courses. When it came to years of 4-H and vocational agriculture experience, again the association members were found to have considerable more years of experience, but yet no significant difference was found among competence scores.

Relationships between the following selected control variables—years of farming experience, educational attainment, farm size, amount of credit used and gross farm income and degree of

competence needed and possessed scores in seven selected competencies were studied using correlation analysis.

The seven competencies were among those with the largest differences between degree needed and possessed scores. Such differences indicate a need for further education in these areas.

Highest correlation coefficients were found (1) between the understanding possessed of capital and its relationship to other farming resources and the ability possessed to evaluate available credit sources (.54 for association members) and (2) the ability needed to analyze and interpret farm records and accounts and the ability needed to evaluate available credit sources (.59) for random farmers.

Significant correlations were found between years of farming experience and educational attainment (—), farm size and amount of credit used (+), farm size and gross farm income (+), and amount of credit used and gross farm income (+) for both association and random sample farmers.

(Continued, page 95)

Table 1. (continued)

Rank ^a	Competencies—abilities Abilities needed (17 items)	Overall rank ^b (43 items)	Mean scores—abilities			
			Needed ^c CIFBA N=117	Possessed ^c N=117	Needed ^c Random sample N=94	Possessed ^c N=94
1.5	Keep complete and accurate farm records	2.5	4.5	3.9	4.2	3.6
1.5	Analyze and interpret farm records and results	2.5	4.5	3.5	4.2	3.4
3	Distinguish between actual needs and mere desires	4	4.4	3.5	4.2	3.7
4.5	Compute management returns	6	4.3	3.3	4.0	3.2
4.5	Gain confidence of lenders	6	4.3	3.7	4.1	3.6
9	Determine own credit strengths and weaknesses	13	4.2	3.4	4.0	3.4
9	Compute true interest rate	13	4.2	3.8	4.0	3.5
9	Budget anticipated costs and returns	13	4.2	3.3	3.9	3.3
9	Prepare and interpret a new worth statement	13	4.2	3.5	4.0	3.4
9	Prepare an income (profit and loss) statement from current years operations	13	4.2	3.3	3.9	3.3
9	Plan repayment schedules to fit expected income	13	4.2	3.5	4.0	3.6
9	Effectively communicate with credit representatives	13	4.2	3.6	4.1	3.4
9	Determine total "least cost" credit sources for financing your farm business	13	4.2	3.5	3.9	3.3
14.5	Plant credit needs on an annual basis	22	4.1	3.3	3.9	3.2
14.5	Relate present credit plans to long term plans	22	4.1	3.2	3.9	3.2
16.5	Differentiate between short, intermediate and long term credit	28	4.0	3.6	3.8	3.5
16.5	Evaluate available credit sources	28	4.0	3.3	4.0	3.1
	Overall mean score for abilities		4.2	3.5	4.0	3.4
	Total overall mean scores for understandings and abilities		4.0	3.4	3.8	3.3

^a Rank of abilities needed by association members (CIFBA)

^b Overall rank of understandings and abilities needed by association members (CIFBA)

^c 5=very much, 4=much, 3=some, 2=little, 1=no.

Current Trends Related To Agriculture Education In Junior Colleges

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NANCY E. DOWDING, Teacher Education, Purdue University*

Junior Colleges and the Community

Today we are witnessing a fast-moving significant transition in education. With the trend toward comprehensive high schools, our secondary schools are becoming larger, more complex, and increasingly diverse in nature and intent. Due to national legislative influences, more and more educational efforts are being directed toward higher education for interested and qualified people. Along with the need to provide educational opportunities for an increasing number of young high school graduates, there is a growing demand for continuing education among the adult population. In addition to the present need for general education, the technological changes in modern society already necessitate retraining for adult workers, and there is a strong educational movement to establish institutions for continuing education. The professional literature reveals that there are many types of institutions of higher learning to serve many purposes. One of these—the junior college—has been with us for many years in most states, but just recently has been recognized as having the potential to assume new roles in meeting educational needs. Often referred to now as the community college, the junior college concept has been modified to some extent because of the growing awareness of the need for many kinds of education in a community. The diverse nature of each community highlights the need for a variety of types of educational institutions if a real effort to satisfy the needs of that particular community is to be made. The traditional function of the junior college—that of preparing students to transfer to a senior institution for eventual completion of a baccalaureate degree—has been with us for many years. It is heartening now to note that the more recent concept of the community college encompasses additional functions reflecting the needs of present-day society and

enabling it to meet the needs of some of the people, in conjunction with the other educational institutions in the community.

These additional functions include the development of technical programs in the academic junior college setting. These technical programs may be either terminal or transfer in nature, depending on the interests and capabilities of the student. They may also be offered for both the full-time and part-time student, and the areas of specialization may range from dental hygiene and registered nursing to mechanical technology and ornamental horticulture. Generally, the employment opportunities and demands of a particular locale will determine in large measure the exact nature of the technical programs which will be offered. One major advantage of providing these technical vocational programs in the junior college is the possibility of including the academic courses of a general education nature deemed vital for successful living in contemporary society.

Along with the transfer and technical programs is the function in the junior college of making available to the entire community the kind of general education opportunities which will become increasingly necessary with the complex technical nature of our society and for the intelligent use of greater amounts of leisure time. For the most part, courses will be non-degree in nature. Thus the needs of the residents of a community can shape the type of educational structure to provide for the vocational and general educational needs of the entire community which both supports and avails itself of the services of the college.

The junior college recognizes that technology in agriculture will demand that we replace the unskilled with skilled workers. Managers and production personnel will require increased knowledge in agriculture to maintain profitable units of production. Some of this training will require technical training in agronomy, agricultural mechanics,



L. R. Hildebrand

animal husbandry, horticulture, forestry, and soils. Beyond the high school, the junior college offers a place where both terminal and professional training in this area can be offered. General, professional, and vocational education in agriculture are found in present junior college curricula. Conversely, the junior college is unique in that it can offer all these curricula, since it is locally controlled and serves local people. Cutting across curricula to supply student needs for employment is no longer debatable. For example, employers want students with training in both business and agriculture. Coordinated programs on the part of junior college personnel make this type of training possible.

Junior colleges are being established across the country at a very rapid rate. As far as agriculture is concerned the Junior College movement may well be the vehicle needed to fill the gap that exists between high school and the four-year college or university. In 1962 the median enrollment of all junior colleges in the United States was 504. Of the approximately 655 junior colleges in the United States, 243 offered a program of pre-professional agriculture, 191 had transfer programs in effect; 15 colleges maintained terminal programs and 37 institutions had programs.¹ Agriculture courses in the junior college could provide exploratory experiences in various fields of agriculture as well as basic education for full-time employment.

Junior College and Agriculture

Comparatively recent legislation—namely the Vocational Education Act of 1963, the Secondary Education Act of 1965, and the Area Vocational Programs—supply funds to local sources to promote vocational education. Vocational education in agriculture could conceivably be a very important part of instruction offered in the junior college. Several acts have been passed which make it possible for many agencies other than the local schools to become involved in areas of vocational education.

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Area vocational schools and junior colleges offer extended opportunities for the development of the agricultural programs in many areas. We are realizing that with the decrease in number of farms and farmers per se there are increasing demands for people to service and supply farmers in many areas. Changes as a result of increased technology necessitate changes in production and marketing. The schools are equipped to supply the people with changing methods and techniques as they occur. Sales and service occupations in agriculture are receiving more and more attention in our schools. It is estimated that by 1975 eighty per cent of all agricultural occupations will be involved in providing services to persons in the production of agricultural products.

The Role of the Junior College in Professional Curriculum and Vocational Education

In order to meet the needs of people in the community various kinds of programs are being initiated. Transfer programs in agriculture are evident in many colleges and more are being planned. Pierce College in Los Angeles describes its curriculum content as follows:

"Offers agricultural education courses with special emphasis for the needs of those seeking training in vocational agriculture.

Two-year terminal programs are provided in the areas of animal husbandry and horticulture. General education, mechanical and scientific courses supplement the vocational courses in agriculture to provide the student with a better understanding of the world in which he lives. The completion of a prescribed curriculum in either of the above agricultural fields entitles the graduate to the Associate degree."²

Students enrolled in the agricultural curriculum who plan to transfer to the four-year college will find that most of the courses will meet requirements for transfer.

Many institutions offer training in the "pre"-agriculture transfer program. Moberly Junior College in Missouri offers the "pre" programs for both agriculture and technical fields. The philosophy of the college is stated in the following three basic purposes:

"to meet the needs of those students who expect to continue their

education in a higher institution of learning; to introduce the students to the demands of some particular vocation in life and give as much training toward proficiency in that vocation as possible; and to give its students two years of general cultural training, to make of them better citizens."³

It is generally recognized by most people concerned with agriculture that providing enough food for the increasing populations of the world is the most pressing and serious problem of our time. Indeed it may well be the most vital part of survival in the years ahead. We must maintain our present production and prepare to feed the rapidly expanding populations. For sometime now we have had a food deficit in the world and this deficit will become even more critical as the populations increase. It is predicted that within the next decade America will begin to feel the effects of a food shortage. Many large and significant problems are on the horizon for people engaged in agricultural occupations. Some of these problems may be listed in the following areas: food production, farm mechanization, farm management and social implications in agriculture. The problems need to be recognized and emphasized in our high schools, junior or community colleges, and universities.

Since the passage of the Smith-Hughes Act of 1917, we have had federal effort to promote excellence in agriculture by providing agricultural education in our schools. Counselors are being made aware of the vast number of people needed in the professional fields of agricultural education. Educators are encouraging young people to explore the areas of agricultural education in their curricula. Students enrolled in agriculture in both general and professional courses of study could help supply the needed personnel in agricultural occupations.

An area in Eastern Illinois was surveyed recently concerning its interest in the establishment of a junior college.⁴ Attracting the most interest in the agricultural field was crop production, record keeping and analysis, animal science technology, agricultural engineering, animal husbandry and plant science technology. Less interest was shown in the areas of horticulture, dairy and poultry husbandry. It appears at the present time that the trend is away from curricula concerned specifically with production agriculture and more toward areas dealing with basic scientific principles and specialized training for occu-

pations. This structure allows more freedom of choice in electives and provides for closer articulation with four-year institutions and universities.

Paul Dressel defines the limits and purposes of the undergraduate curriculum as follows: "If by general agreement a limited number of basic departmental introductory courses were offered in the freshman and sophomore years, the quality of the work could be considerably improved and the student would be insured of a sequential education program as he moves from the junior college to the senior college."⁵ Indeed the junior college appears to offer the place in our educational structure for the implementation of agriculture and the promotion of it on the local level.

Post-high school programs in agricultural occupations fit exceedingly well in the junior college concept. Comprehensive institutions that offer broader programs than the "traditional" liberal arts concept could make available programs for the related occupations in agriculture, particularly in the sales, services, and distributive fields. It is significant to note at this point that high schools have difficulty in implementing this kind of preparation in their curriculum, and yet it does not require four years of college.

There are different opinions as to the kind of post-high school we should have for education at this age level. Junior colleges that offer college credit courses for students who will transfer to four-year institutions would do well to consider and implement vocational-technical training and a varied educational program consisting of general and vocational courses for all adult groups. It would be difficult to provide this type of comprehensive institution in a single school district unless there is reorganization of school districts to implement a junior college district.

A suggested course outline is presented to indicate some possibilities for implementing professional and technical training in agriculture in the junior college. The materials are only suggestive and are intended as a guide for curriculum organization. If students are to make intelligent course selections to fill their needs and desires, the courses will have to be made available for them to guide their selection. It is further recognized that a basic course content will vary with communities and with the faculty available that have suitable training and experience to teach such courses. A preprofessional program in

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*Dr. Dowding is currently on leave from Cuyahoga Community College.

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agriculture and a plant science technician program are presented as examples of a transfer and technician curriculum that could be implemented in Junior Colleges to fill community and individual needs.

PRE-PROFESSIONAL PROGRAM OF AGRICULTURE

First Year

First Semester	Second Semester
English	English
Chemistry	Chemistry
Mathematics	Botany
Animal Husbandry	Horticulture
Soils	Dairy Husbandry
Health & Physical Education	Health & Physical Education

Second Year

First Semester	Second Semester
Zoology	Economics
Psychology	History or Government
Geology	Government
Entomology	Sociology
Forestry	Soils
History or Government	Farm Power

Plant Science Technician

First Year

First Semester	Second Semester
English	English
Ag. Math.	Ag. Science
Ag. Science	Irrigation & Drainage
Soil Science	Agricultural Mechanization
Plant Science Elective	Plant Science Elective
Health & Physical Education	Health and Physical Education

Second Year

First Semester	Second Semester
Plant Pathology	Weeds & Poisonous Plants
Ag. Mechanics	Pest Control
Farm Tractors	History or Government
Introduction to Agricultural Business	Plant Science Elective
History or Government	Other Elective
Plant Science Electives	

Summary

Vocational and technical educational programs are being developed in junior colleges to provide production and off-farm occupations in agriculture.

Occupations in agriculture are being clustered so that it is feasible to provide training in junior colleges for them.

Terminal agricultural education which leads to gainful employment can be provided in junior colleges or area schools. It is reasonable to expect junior colleges or area schools to provide much of the technical or occupational training in agriculture in the future. Due to Junior colleges being locally controlled, they are in a unique position to provide pilot programs and innovations in agricultural education.

If colleges, area schools, and high schools do not coordinate their efforts in providing agricultural education programs, frustration and waste may result. Sound organization and good teaching is necessary for the success of agricultural education in the junior college.

A modern concept of agriculture education would include the following areas: education in agriculture should be a part of general education for all people; counseling in our educational institutions should be updated about

occupations related to agriculture; for those who will engage in off-farm occupations in agriculture, the agricultural science and technology required should be supplied in the vocational and technical education programs of junior colleges.

The newly developing and emerging junior colleges of the nation should be concerned about providing agricultural education to the people in the community they serve.

¹Gleazer, Edmund J. Fr., (ed.) "American Junior Colleges," 6th ed. American Council on Education, Washington, D.C. 1963.

²Los Angeles Pierce College, Los Angeles City School Publication No. 698, Volume 19, Woodland Hills, California, 1965-1966.

³Missouri Handbook for Junior Colleges," Publication No. 24H 1964 Edition, State Department of Education, Jefferson City.

⁴Casey Daily Reporter, "Complete Junior College Survey of Area Students," Vol. XXXVI, No. 201, January 1, 1966.

⁵Dressel, Paul L., "The Undergraduate Curriculum in Higher Education," The Education for Applied Research Education, Inc., Washington, D.C., 1963.

Themes For the Agricultural Education Magazine

January—

GRADUATE STUDY

Need. Opportunities. Role of graduate study in professional improvement of teachers, supervisors and teacher educators. What is the present graduate status of personnel in Agricultural Education? Areas of graduate study now being pursued by students at master's and doctoral levels. Full-time vs part-time graduate study. Outlook.

February—

RESPONDING TO CHANGING NEEDS IN AGRICULTURE AND EDUCATION

How well are we responding to changes in agricultural and educational situations? Basis for change. Are we aware of basic and fundamental changes such as population shifts, socio-economic changes, changing expectations of people, and outlook? A close look at research on innovation and acceptance of new concepts by teachers, supervisors and teacher educators.

March—

AGRICULTURAL MECHANICS IN 1967

Is there still a place for "Farm Shop," with hand tools, woodwork, metal work, cedar chests, etc? How does the major purpose of the mechanics class of 1967 differ from the 1937 class? Is a special mechanics teacher necessary? Examples of specialized programs. Should mechanics be a part of each year of vocational agriculture? If so, should emphasis differ each year?

Anderson and Bundy

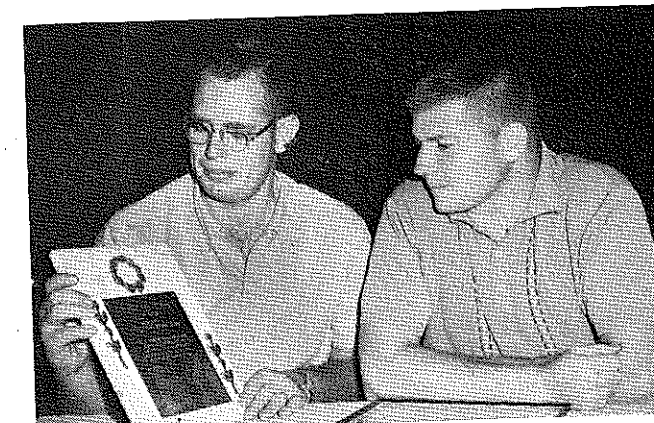
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These 43 competencies should form the bases for farm credit instruction and in-service training in vocational agriculture classes for high school youth, young and adult farmers, in the cooperative agriculture extension service program, in area vocational schools, and in the College of Agriculture resident instructional program.

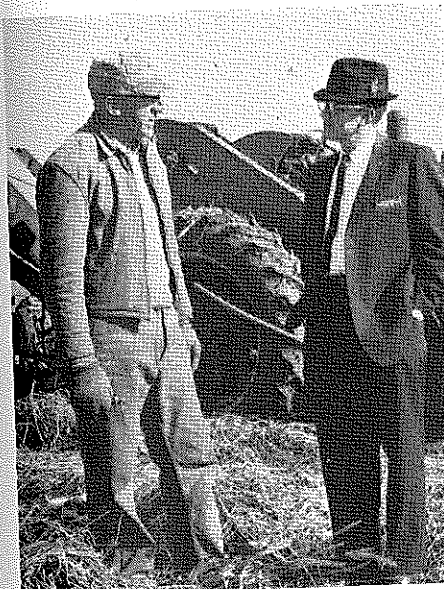
An interpretation of this study implies a greater need for educational programs in the use of farm credit. It would seem that beginning and older farmers could benefit substantially by participating in farm credit training and membership in a farm record association. From the data it may also be inferred that members of farm record associations use farm credit more efficiently and to a greater degree than do random sample farmers.



Adult Farmer class instruction led to the establishment of "Zi-We's" daily farm and bulk milk sales and service at Mifflinburg, Pa. Adult class member Glen Zimmerman (back to truck doors) markets 150 gallons of milk daily as bulk container-direct to customer cash sales. L to R: Ray Dutrow and Bill Williams, Vo Ag Teachers at Western High School, Mifflinburg, Pa.; the Zimmerman lads, and Glen Zimmerman, adult class member and Past President of the Penna' Young Farmers Association.



Phil W. Neilson (left) and Michael Seitz, Alpha Tau Alpha members of The University of Arizona, are examining the plaque which Phil received as the outstanding senior ATA member. Phil served as Chapter president last year, and Michael is vice-president during the current year. Photo by R. W. Cline



Effective communication with credit representatives was identified as one of the competencies needed for successful use of farm credit. Eldon Boswell, Federal Land Bank representative, shown as he visits with one of his association members, was a member of the panel which helped to formulate the list of competencies.



Wisconsin Vo Ag Teachers in Leadership Positions. Millard Gundlach, Alternate NVATA vice Elect, of WVAE and Frank Weigel, President from the midwest; Dan Scheid, President Elect of the Wisconsin Education Association, work together for better educational opportunities and professional improvement of all teachers.

Dear Editor:

As a recent graduate of the University of Nebraska and a new Vocational Agriculture teacher I would like to have the *Agricultural Education* magazine sent to me at the Falls City Public Schools. I do not know when my present subscription expires but would like it renewed when it does.

I enjoy your magazine greatly and find myself referring to it quite frequently in planning my first Ag program. Keep the fine articles and the new research data coming!

Yours truly,
Cary Metzger
Falls City Public Schools
Falls City, Nebraska

Thanks! You are starting like a real pro.—
CCS

Stories
in
Pictures

GILBERT S. GUILER
Ohio State University



Young Farmers and their wives from each of five areas of Ohio are recognized for their outstanding community service. These couples were recognized at the luncheon during conference with the winning couple being awarded a trip to Washington, D. C.



Edward Schano, Professor of poultry husbandry, Cornell University, discusses quality in poultry carcass with a committee of teachers of vocational agriculture during the selection of dressed birds for the poultry judging contest. (left to right) V. O. Linderman, Donald Watson, and John Keller.

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Horticulture has played an important part in our changing role of Vocational Agriculture. Here a Michigan Vocational Horticulture student is developing his skills in salesmanship while recommending varieties of garden plants to a customer.

Featuring
OUR CHANGING ROLE