IMPLICATIONS FOR EDUCATION:
A DISCUSSION

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Structural changes in commercial agriculture, which are deemed desirable, will be brought about most effectively through changing the interests, increasing the knowledge and skills of people associated with the farm firm. This conference group fully recognizes that education is the process by which such changes in people can most easily occur. It is the process that enables people voluntarily to make economical use of land, labor, capital, and management in a dynamic environment. The contributions of research and education are magnified as capital and management become increasingly important in bringing about changes in the farm firm.

Meeting the educational challenges facing farm and non-farm directed extension workers and resident teachers today, and in the years ahead, requires a high level of knowledge and skill. The explosion of knowledge is occurring at a rapid rate. Between 1750 and 1900 the world's knowledge doubled; it doubled again between 1900 and 1950, again between 1950 and 1960, and it is expected to double again by 1967. The proliferation of findings of research and published materials, about which professional people are expected to be able to interpret to others, places unusual demands on all of us engaged in the teaching profession.

A study of the excellent base papers ¹ which have been prepared for this conference prompts me to emphasize five major implications for education. I am grateful to Director J. B. Claar and Professor Carroll V. Hess for sharing with me copies of their papers for review. The facts and viewpoints which they have presented to us are most challenging and, I am sure, will bring forth many questions and comments.

First, as I see it, the primary job of the extension worker and resident teacher of undergraduate and graduate students, and adults in a voluntary educational program, is to understand and interpret for his clientele the latest findings of research that have a bearing on solving the problems they face. This task is basically a two-fold function. First, an individual must master a body of subject matter. Second, he must develop the knowledge and skills of effective teaching. One without the other materially lessens the value of the educational process and the professional acceptance of the individual.

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¹Earl O. Heady and Gordon Ball, "Economic Growth of the Farm Firm and Projected Changes in Farming," beginning on page 11 of this report.
Harold F. Breimyer, "The Farm Firm in the Structure of the Agricultural System," beginning on page 1 of this report.
James Nielson, "Managerial Requirements of Farm Firms 1980," beginning on page 51 of this report.
Dr. Hess\(^2\) emphasized that point very effectively in discussing the importance of graduate study and in-service training as a means of keeping informed about the latest findings of research.

Many extension workers, and particularly those individuals in responsible leadership positions, are recognizing that graduate study and in-service training are important means of increasing the level of professional competency in subject-matter and teaching skills. In 1956, 15 percent of the total extension personnel held master's degrees and 2 percent held doctorate degrees. In 1962, 23 percent had earned a master's degree and 4 percent a doctorate degree. The number receiving advanced degrees has continued to increase each year. However, Extension will need to emphasize graduate study and in-service training more strongly in the future than in the past if the staff is to measure up professionally with the standards required of persons engaged in research and resident teaching.

Certainly the increased emphasis on professional competency will necessitate closer coordination of research, resident teaching, and extension than exists in many land-grant institutions at the present time. Such coordination should also bring about a closer working relationship between the theoreticians and the practitioners.

The second point that warrants further emphasis is in regard to a question raised by Heady and Ball:\(^3\) "Will the equivalent of today's county agent be replaced by a specialist at a level of training of a Ph.D.?" My judgment would be that two types of specialists with Ph.D. degrees will be required in the next 10 to 15 years. They will be so located as to serve a trade area, a commodity area, or multi-county unit rather than the traditional county as is usually the case at present.

This point was emphasized by Director Claar\(^4\) in his discussion of staff roles and structure in relation to the "development of multi-county programming and specialization of staff within a predetermined multi-county unit."

Increased specialization of the extension staff working most closely with the clientele will, in my opinion, be required in two major areas of work. One area will be technical subject matter related to problems of production, distribution, marketing, consumer buying, conservation of natural resources, business management, health, etc. Equally essential at the area or multi-county level will be persons highly trained as specialists in adult education and administration. Problems of staff organization and professional development, planning educational programs to draw on the total resources of the university, community organization resource developments, etc., will require a highly trained adult educator. The need for services of both types of specialists are more and more evident. There

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\(^2\)Carroll V. Hess, "Implications for Teaching Programs in Colleges of Agriculture of Structural Changes in the Economy of the Commercial Farm Firm," beginning on page 95 of this report.


\(^4\)J.B. Claar, "Farm Directed Extension," beginning on page 77 of this report.
is a definite trend toward increased professional competency through area staffing. Staff members so employed are either specialists or are expected to prepare themselves for specialized services. In my opinion this is a desirable trend.

If the land-grant institution desires to extend its resources to serve all the people of the state, e.g., the farm family, commercial agriculture, agribusiness interests, persons engaged in the professions, and as laborers and civic leaders, certainly a more highly specialized staff working more closely with the clientele will be required. This point was emphasized by Dean Ratchford in his presentation.

Developing a better understanding and greater skill in using the process of logical reasoning is the third point that warrants emphasis. Such an understanding and skill is needed, to a greater degree than at present, by both the extension worker and the resident teacher. Professor Nielson refers to the functions or processes of management in his paper. Director Claar emphasizes the importance of management and decision making, particularly for younger families, and the need for reliable facts with which to reason. The researcher speaks of the scientific process as being synonymous with logical reasoning. If the professional staff person possesses this understanding and skill of logical decision making, it is assumed that he can and will teach his students to follow such a pattern of reasoning in solving their problems.

Developing a deeper respect for facts, what they are, how they are derived, and alternative uses to which they can be put are the tools we use in logical reasoning. Such thought processes require the ability to think for oneself as contrasted to simply executing the plans of others. It requires some active involvement of the teacher and extension agent in research projects in one's field of work rather than simply disseminating the findings and conclusions of others. It means more time and thought devoted to formulating objectives and goals and identifying and defining problems. It involves thinking through alternatives and reaching decisions based more on facts and carefully evaluated experiences and less emphasis on decisions that are politically expedient or personally advantageous.

Greater knowledge and skill in applying the process of logical reasoning in problem-solving can be developed through a solid foundation of graduate study and in-service training in technical subject-matter. Certainly we will agree that the research experience is invaluable in the development of logical thought processes. A study of the philosophy and principles of extension and adult education, principles of learning, methods of teaching, human relations, and administration can be equally valuable in helping the student examine facts and opinions from an analytical point of view. My argument is for greater emphasis on the theory and principles of our job as educator provided through formal study, with the "how we do it" emphasis being provided largely through in-service training. Dr. Hess emphasized this point repeatedly in referring to theory and principles as being basically important in a resident instruction program.
The fourth point is the value of more intensive training for the clientele extension is serving. Director Claar emphasized this need at several points in his presentation. To stimulate interest and change attitudes of people is a difficult task. Assisting people in identifying and defining their problems on which information is desired is tedious and time consuming. Identifying relevant facts and ideas that relate to the solution of such problems is a task for the experts. The process of getting people to accept new ideas and methods of farming is a slow one.

The preceding papers emphasized the need for greater intensity and depth in our teaching, whether it be in the formal classroom or in the field. Enabling the students or the adult to judge the relevancy and objectivity of the sources of information being presented requires both an intensive and extensive approach to the subject. Needless to say, more time is required to develop such an understanding of relevant information than can be accomplished in one or two short meetings. More frequent and intensive training by extension is one effective means of diffusing research information to people who need it.

Specialists and agents who have seen fit to plan and conduct a series of meetings on a given subject or offer a fee course with credit have been enthusiastic about their experience. Such an intensive approach with a group definitely committed to the program helps in developing greater knowledge of the theory and principles as well as the "how" of the subject matter concerned. It is reasonable to expect that such an approach would make for more rapid adoption of new technology and the findings of research.

Extension, traditionally, has placed considerable emphasis on the process of involving people through committees, conferences, planning meetings, workshops, etc. In my opinion, more emphasis should be placed on the product of education, which is the subject matter concerned. Involvement of the individual is absolutely essential for effective learning. Too often we do not follow through with our greater responsibility of providing the knowledge with which people can think for themselves and solve their own problems. It is much easier to record and evaluate the process than it is to determine what people have learned and actually put to use as the result of extension's efforts.

The fifth and last point is giving the learners' interests and needs a high priority in planning educational programs. Professor Hess stated, "The secret to developing sound educational programs is to put the student first, the college and department traditions last." I would agree that the interests and needs of the resident students, as well as the adults are of major importance. However if the student is to extend his interests, expand his horizons, and add to his knowledge, he must be motivated to do so. Motivation and willingness to changes become increasingly important and difficult as a person becomes older.

How is such motivation brought about? It is usually accomplished by a well informed and highly motivated teacher, parent, or friend. A well organized curriculum of study also provides valuable support to the teacher. Department traditions and policies that are based on extensive experience and sound staff judgment, but are being constantly evaluated and changed as circumstances warrant, can and do support the students' interests.

I believe the learner is the objective of our educational system. The resident staff member and the extension worker should serve as the leader of thought, and guide in the program planning process and in problem solving if he is worthy of being called an educator. Professor Hess refers to this important role as one of educational leadership.