AGRICULTURAL EDUCATION

Its Future Points to New Areas, Wider Scope
And Need for New Research by Trained People

Future research in agricultural education will take on a wider scope, accelerated pace, and turn to many new areas of interest. So says Dr. Darrel S. Metcalfe, director of resident instruction in the U of A College of Agriculture.

Speaking at an international gathering in Paris, France, Director Metcalfe said: "Research (in the future, in agricultural education) will focus on the range and kind of employment opportunities available. They will be assessed, as will be the competencies individuals need to enter and make progress in the new work.

"Questions to be answered will include:

"What are the current and emerging occupations for which vocational and technical programs are or should be available? What are the present and projected numbers of employees in these occupations by job title and other essential strata? What are the skills and knowledge needed for securing, holding, and advancing in these occupations and how are these skills likely to change? How well are we meeting the needs of persons now employed for retraining or continuing education? What are the logical job clusters for training purposes?

"Research," said Dr. Metcalfe, "will focus on people as we find them — their origin and abilities, their knowledge, skills, aspirations and motivations. Research will study the implication of these studies in the over-all program of human resource development. Such questions as the following need to be investigated:

**How Get Them Started**

(1) What specific steps can be taken to motivate the socio-economically handicapped youth? (2) How can programs be best designed to assist youth from the ethnic minorities? (3) What can be done to motivate the potential dropout to continue in school and to achieve his highest potential? (4) What can be done to encourage students to aspire to prepare for levels of employment com-

mensurate with their abilities and interests?

(5) Why do people differ in aptitudes, and can these aptitudes be modified? (6) How can we prepare rural people for employment and living in an urban environment? (7) How can we assist students to cope effectively with career changes throughout life? (8) How can we determine the potential occupational attitudes, abilities, and persistence interests of students? (9) How can we identify persons who will benefit from vocational education and types of training that would be most beneficial?

(10) What psychological factors affect flexibility in anticipating and accepting change in employment situations? (11) What basic skills are transferable from one occupation to another or which function in clusters? (12) What psychological adjustments are required of persons when they leave the protective situation offered by the training program and face the competitive working world?"

**We Need More Research**

The University of Arizona educator told his European audience that his studies have indicated the need for additional research in several areas of educational resources development and training.

"Under curriculum experimentation and development," said Dr. Metcalfe, "research to these questions will be undertaken: (1) What curriculum core content is common to various occupational categories? (2) What curriculums are best for new and emerging occupational fields? (3) What is the relationship between curriculum and the dropout ratio?

"Questions will be asked in instructional methodology and media: (1) What is the communicative effectiveness of teaching material? (2) How can we identify and compensate for individual differences in learning situations? (3) What is the influence of various instructional patterns on skill acquisition and retention? (4) What are the best procedures for evaluating student progress? (5) What is the optimum mix of theory and practice?

**A Call for Trained People**

"Personnel must be recruited," he said, "and developed for program organization and administration with specific questions: (1) What are the sources of personnel appropriate to specific needs? (2) What are the critical competencies of successful personnel? (3) What are the methods for forecasting local, regional, and national manpower needs and utilizing these projections in designing and operating vocational programs?"

"In the area of vocational guidance and counseling, answers must be found to the following questions: (1) What are the most effective vocational guidance and counseling procedures? (2) What are the educational and occupational aspirations of youth? (3) What is the nature of career patterns? (4) How can placement and follow-up of graduates be best handled? (5) What is the process of occupational choice?"

Concluded the Arizona educator: "The facts which govern the behavior of civilized man today are the products of yesterday's research, and the facts of tomorrow will be the product of today's research."

**LESS TIME TO PRODUCE WHEAT**

It now takes only 12 man-hours to produce 100 bushels of wheat, compared with 44 man-hours in 1944 and 90 in 1920, according to a just-completed United States Department of Agriculture study. Major factors in the increase high in wheat-producing efficiency, says USDA, are increased use of fertilizer, and better seeds, methods and machinery.

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