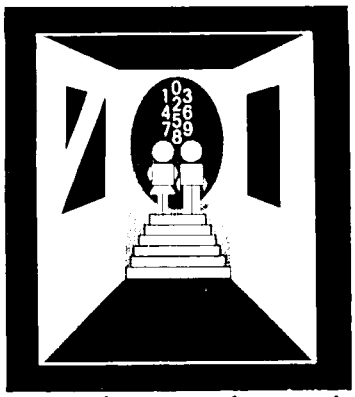

Honesty In Education

New Program Curriculum in Rural Resource Implements Broader Student Experience Base

Harrison Gardner and Judith Tompkins

Are you an honest educator?

Do you tell your students that a B.S. degree will assure them a career in the agri-industry?

Do you require an experience-based program as a prerequisite for graduation?

Do you still feel you are being honest with your students?

The leadership in the College of Agriculture and Natural Resources at Michigan State University decided that we were not being honest with our students.

It was noted that an increasing percentage of undergraduates who had completed a major in the College of Agriculture and Natural Resources were still not prepared for a career in their chosen field. Why? Because, the majority had a combination of the following weaknesses:

- Little or no farm experience
- Highly specialized farm experience
- Little or no experience with, or understanding of, natural resources and the associate agencies
- Little or no experience or understanding of the interrelationships between agriculture and natural resources
- Completed internships that often provided a narrow range of "hands on" and work experiences with limited related instruction and education supervision
- Little or no awareness of necessary adjustment to new positions and to a desired level of leadership within an organization which took more time than was expected during initial employment
- Lack of a clear understanding of the basic concepts and processes that are basic to farm producers, agricultural leaders and natural resource agents.

These concerns pointed to the need for a program to provide students with opportunities to develop knowledge, skills and attitudes through a number of hands-on experiences to compensate for their lack of practical experience. To solve these problems and establish an honest relationship with our students, Michigan State University designed and piloted a unique program (an "ideal" internship) during 1984-85: The Rural Resources Education Program. Through grant support from the Kellogg Foundation, a residential program was established at the Kellogg Biological Station, a field station owned by the University and jointly managed by the Colleges of Natural Science, and Agriculture and Natural Resources.

Program Goals

Based on the broad spectrum of needs identified, the following six major goals were established to guide the program:

- Prepare leaders in agriculture and natural resources for the challenges of the 21st Century.
- Develop a set of key competencies (skills, knowledge and attitudes) necessary for the production of food and fiber, processing and marketing of food and fiber products, and the long-range management of natural resources.
- Develop the key competencies needed in communications, interpersonal relations and management necessary to manage or work democratically within a business or agency.
- Develop an understanding of the systems approach to agriculture and natural resources.
- Develop an understanding of the interrelationship among farm production enterprises.
- Develop a concept of the impact of farm production on the social and physical environment.

Program Curriculum

The curriculum for the program pilot year included 15 credits of instruction. Nine credits were from the 11 disciplines within the College of Agriculture and Natural Resources, including: Agricultural Engineering Technology, Animal Science, Fisheries and Wildlife, Crops and Soil Science, Food Systems Management, Forestry, Horticulture, Park and Recreational Resources and Resource Development. Campus-based professors from each of these disciplines delivered lecture/discussions to the students at the Kellogg

Harrison Gardner is curriculum coordinator and Judith Tompkins is assistant curriculum coordinator of the Kellogg Biological Station Rural Resources Education Program of the Michigan State University.

Biological Station at two-week intervals. Each professor also specified a minimum of four hours of hands-on, laboratory experiences to be completed within a two-week period. These learning activities included on-site laboratory experiences and field trips, coordinated and directed by the on-site faculty.

The nine credit course required each student to complete a number of specified, hands-on experiences, such as milking cows, operating a farm tractor and other equipment, feeding livestock, testing soil and water, identifying plants, investigating habitats, making population studies, and using hand tools and welding equipment properly. Students also were required to develop in-depth competence in a discipline of their choice.

Further, the students enrolled in three credits of Microcomputer Applications in Agriculture and Natural Resources, using Farm Learning Center production records from livestock and crops raised and data collected.

Additionally, they enrolled in a Leadership Development course (3 credits). This course focused on an analysis of the democratic behavior of successful business managers in the areas of motivation, supervision and management. The students were required to complete a minimum of six hours of leadership activities per week, including field trips and KBS Club activities (a student organization of required membership).

On-Site and Area Facilities/Resources

The Old Kellogg Farm at KBS was renovated and the focus shifted from that of a production farm to an educational, "working farm," renamed the Farm and Resources Learning Center. The existing facilities include a modern 25-cow dairy barn, a sheep shed, beef barn, hog farrowing coops, show barn, brooder house, and modern farm shop. The Farm and Resources Learning Center (F&RLC), provided the focal point for most of the farm activities through chores and directed laboratory experiences. In addition to the F&RLC, a land base of 2250 acres was used, including the Kellogg Forest, Kellogg Bird Sanctuary, and Dairy Research Center.

Library

The library resources were significantly increased over the pilot year, with the addition of textbooks, journals, films, video-tapes and a variety of slide/tapes. Students also were involved in the development of video-tapes.

Farm Power Equipment, Machinery and Tools

A complete line of farm power equipment, machinery and tools were used by the students. Included were three tractors, machinery to prepare a seedbed, a corn planter and grain drill, and the machinery needed to mow, rake, bale and haul hay.

A well-equipped farm shop with tools and equipment to service a large, commercial farm and provide a diversity of hands-on experiences for up to ten students also was developed.

Livestock

The students developed a number of competencies in caring for and managing livestock through directed laboratory experiences and chores. They managed 25 dairy cows and replacement stock, a registered Angus cow/calf beef herd (15), two bred gilts, and six ewes. They also raised, dressed, and marketed 100 broilers.

Land Base

The students were involved in planting or harvesting corn, soybeans, sudan grass, alfalfa, and a pasture. They also prepared the seedbed and planted corn on three plots designated for wildlife at the Bird Sanctuary. In addition, they constructed a sod waterway to control a severe erosion pattern through a corn field.

Human Resources

To achieve the goals of this program, every effort was made to select faculty with a commitment to the need for this program and an acceptance of the program philosophy. The authority for the overall curriculum rested with the on-campus faculty within the 13 academic areas and the Curriculum Coordinator. The instructional delivery system at KBS is the responsibility of the Curriculum Coordinator, Lead Instructor and on-site staff. This group must provide the learning environment for the lab experiences specified by the MSU faculty.

This learning environment also must capitalize on the day-to-day experiences that occur through the management of the farm. In addition, this staff is responsible for providing a significant amount of non-formal instruction through a 24-hour, seven-day time frame. They play a key role in providing the type and quality of instruction that manifests the underguiding philosophy of the program.

To assume this role, they must encourage students to take advantage of the wide variety of learning opportunities that may or may not be directly related to the formal classroom instruction. By taking advantage of these "teachable moments," the students with limited agricultural backgrounds have an opportunity to develop the overall skills and an understanding of the disciplines, while the more experienced student can study an issue or problem in greater depth.

The Curriculum Coordinator is responsible for assuring that the program philosophy is manifested throughout the instructional process. To assure this, the Coordinator must help each participant to recognize that the way in which they are learning is related to the way they will function on the job as an employee or manager. The student must be helped to perceive the relationship between the behavior of the staff and the behavior of effective, agri-business managers. Students' analysis of faculty interaction

should assist them in manifesting the behavior of successful managers during employment. It would assist them in the areas of motivation, supervision and management.

The Lead Instructor was supported by selected graduate assistants, responsible for some instruction, and undergraduate interns, who carried out general farm chores and assisted with the livestock, land and farm equipment used in instruction. The overall management of the F&RLC was under the guidance of the Lead Instructor.

Three committees of carefully selected persons guide the instructional program, as well as the management of the Farm and Resources Learning Center as both an effective learning laboratory and an efficient farm operation. The Curriculum Advisory Committee was composed of MSU on-campus faculty who represented each of the departments in the College of Agriculture and Natural Resources. They provided curricular input for the nine-credits of interrelated instruction.

The Farm Learning Center Advisory Committee was composed of MSU on-campus faculty members and the Kellogg Farm Manager.

The Farm Learning Center Site Management Committee included the Lead Instructor, F&RLC Instructional Farm Manager, Kellogg Farm Manager and Dairy Center Herdsperson.

Program Assessment

Despite their varied backgrounds and experience levels, each of the 67 students participating in the program reported that they benefited greatly from the experience, enjoyed their term at KBS and developed an extensive appreciation for the career opportunities available in the industry. Further, the students indicated they developed a number of competencies in all aspects of agriculture and natural resources.

When any small group spends a concentrated amount of time together, day after day (as in a real-life work situation), differences emerge and cause stress. This is true of the groups who have participated in this demanding program. However, the leadership development course was designed to accommodate these differences and help the students learn to cope with stress. More importantly, it was designed to help them learn to deal with the differences they would continue to encounter in any life or work situation. No matter what their background might be, it was found that the students who exhibit the greatest growth are those who have the ability to conceptualize the implications of interdependence and interrelationships.

A method for the evaluation of this program was developed prior to the start of the pilot program. Each student completed a 30-minute personal interview with the Curriculum Coordinator at the beginning and again at the end of each term. The observations were analyzed and compared. Each student also completed an inventory of agricultural competencies during the first and last week of each term. They responded in terms of their level of competence in regard to a series of competency statements.

The overall findings of the evaluation each term was very, very positive. The staff agreed with the students' assessment that they had gained a number of skills, a considerable amount of knowledge which they felt they would retain, and changes in attitudes toward farmers and farming, rural living and the complex interrelationships between agriculture and natural resources. Basically, the students felt they had developed a number of competencies and the level of self-confidence necessary to assume leadership positions in the 21st Century.

Are we honest educators?

By offering an interdisciplinary program that couples a broad background in agriculture and natural resources with practical experience and career awareness we feel that the answer is yes for those students who have participated in the Rural Resources Education Program.

Sample Evaluation Questions

A. Pre- and post-interview questions asked each program participant
   1. Do you enjoy physical labor?
   2. Do farmers seem to enjoy physical labor?
   3. Do (did) you look forward to (enjoy) doing farm chores?
   4. Tell me what you feel the concept, system, means:
      a. What is a relationship?
      b. What are interrelated components?
      c. What are some of the agricultural systems you have observed? Can you describe the components?
   5. Tell me what you feel the concept, experiential education, means?
      a. What is practical education? Applied skills? Work experience?
      b. How can experiential education help you to master the technical requirement of a job and get along with others?

B. Pre- and post-skills/competency inventory completed by each program participant, using the "Agricultural Education Skills Inventory," developed by the Division of Agricultural Education, University of Minnesota.

The respondents to the Inventory indicate their level of skill or competence for each of 362 items in the instrument.

Related Readings

Colley, Barry J. "An Assessment of Selected Attitudinal Changes in the Kellogg Rural Resources Education Pilot Program." Ph.D. dissertation, Michigan State University, 1985.

Chickering, Arthur. *Experience and Learning: An Introduction to Experiential Learning*. New Rochelle, New York: Change Magazine Press, 1977.

Dewey, John. *Experience and Education*. New York: Collier MacMillan Publishers, 1938.

Kolb, D. and Fry, R. "Toward an Applied Theory of Experiential Learning." In G. Cooper (ed.), *Theories of Group Processes*. London: John Wiley and Sons, 1975.

Mayville, William V. *Interdisciplinarity: The Mutable Paradigm*. Research Report No. 9, Washington, D.C.: AAHE-ERIC/Higher Education, 1978.

Thomas, William R. "Experiential Education." In D.L. Armstrong (Ed.). *Impact of Enrollments and Student Body Composition on Academic Program, Design and Delivery*. East Lansing, Michigan: Michigan State University, 1977.