

## Priorities for College and University Agricultural Education Faculty

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In his treatise, *On Science*, Albert Einstein observed that imagination is relatively more important than knowledge. This is not to diminish the importance of developing knowledge, but being able to use one's imagination to apply knowledge to solve important human problems is the higher goal.

Agricultural educators have a long and productive legacy in being able to identify and solve important problems to help assure a more productive and effective food, agricultural, and natural resource system. Yet, in our rapidly changing and increasingly complex society, the roles and priorities of agricultural education faculty in our nation's colleges and universities are seemingly more difficult to clarify today than in the past. Perhaps there is some comfort in the fact that most other professional disciplines are also dealing with some of the same identity issues and challenges.

The current identity crisis can be attributed to many factors including the changing structure of the U.S. food and agricultural system; contemporary life styles, values, and economic priorities in our society; evolving educational delivery systems at all levels; and the role of agriculture in today's U.S. political agenda.

A myriad of educational program variables in the various states and higher education institutions affects the kinds of activities performed by faculty in agricultural education programs. Yet, the question remains, What should be the mission--the focal points--that should be addressed by agricultural education faculty in our nation's colleges and universities? That aptitudes and technical competencies differentiate agricultural education faculty from others? What unique products can best be delivered by agricultural education faculty?

While institutional goals and university organizational schemes may largely determine the roles of agricultural education faculty at various colleges and universities, I believe that there are several important professional priorities which form the central agricultural education mission in the 1990's. Perhaps it is appropriate to indicate that these suggestions are aimed specifically at college and university agricultural education faculty. I will not attempt to address priorities of agricultural communication, agricultural business, consumer and family science, technical of industrial education, or other faculty groups who are often identified with agricultural education faculty to form academic departments at a number of universities.

Perhaps highest on today's professional priorities listing is providing leadership and teacher preparation programs to provide an adequate number of excellent new high school agricultural science business teachers.

## **Provide Excellent High School Teacher Preparation Programs**

Over the years, college and university agricultural education faculty have had the central focus of preparing new teachers for high schools. To me, this remains as the cornerstone priority for the coming decade.

Although agricultural education student numbers have dwindled on most campuses during the past couple of decades, I am not as concerned with this measure of teacher education success as I am with modifications which have occurred in most high school teacher preparation curricula during the same period. It is ironic that our local secondary school programs are finally, and rightfully, placed greater curricular emphasis on agricultural science and agricultural business subjects, but teacher education programs in most colleges and universities permit students to enroll in fewer science courses and fewer agricultural business and management courses today than fifteen years ago. In contrast, the emphasis on pedagogical preparation has increased dramatically during the same period.

In the mid-1970's, the 136 semester credit agricultural education program at my college alma mater included 187 credits of education courses. Today, students who complete the 138 semester credit agricultural education plan must earn a minimum of 38 credits of education courses. What has been displaced in the curriculum? Mainly, it's life and physical science courses which contribute to the fundamental understanding of the food, agricultural, and natural resource system that have been eliminated from plans of study. There are some very fine new teachers being produced today, but I seriously doubt that they are superior to those of 15 years ago. In fact, the scientific and technical competence of today's agricultural education graduate simply does not compare to his or her counterpart of the 1970's. Yet, agricultural science is being touted as a contemporary focal point in secondary school programs.

The increased emphasis on education courses is the result of both internal and external forces. Declining enrollments in education colleges in the 1970's stimulated faculties to increase requirements to maintain student credit hour output. Also, teachers are expected to deal with a wider range of social problems and challenges today than in the past. In many cases, additional teacher preparation courses have been mandated by state legislative actions.

It may seem harsh to challenge the agricultural education curricular migration to move pedagogy during the past couple of decades when many, if not most, other college undergraduate curricula have also become more narrowly focused. One only needs to look at music and creative arts plans of study in "liberal arts and sciences" colleges to find some of the most narrowly defined academic plans on the face of the earth. Defending one's student credit hour generation capacity is the supreme academic law which governs faculty survival, and far too many curricular decisions on college campuses today.

From my perspective, undergraduate agricultural education curricula should not require more than 20 percent of the total credit hours for pedagogical preparation. Agricultural teacher educators must be more aggressive in modifying curricular plans to equip graduates with the basic science and business tools to solve increasingly complex problems in the integrated food, agricultural and natural resource system.

## **Exert Leadership in Educational Program Development**

During the past 10-15 years, university agricultural education faculty in the U.S. have been involved, but, in my view, not sufficiently aggressive in helping teachers and schools reshape local educational programs to meet the emerging contemporary needs of

students. While a number of states are now attempting to implement strategic plans which refocus secondary school curricula to selected agricultural science and agricultural business subjects, it is apparent that the program adjustments are largely reactionary in nature.

University agricultural education faculty must be much more creative and assertive in the 1990's to develop new delivery systems for agricultural education in local communities, and catalyze the adoption of new models. For example, there is an apparent growing need to integrate high school agricultural, environmental, and life science courses and educational programs to address contemporary issues and problems. For many years, faculties at universities have served, consciously or unconsciously, as important role models for high school teachers. Yet, how are agricultural education environmental education, and life science education faculty on our campuses currently working together to develop new curricula, designed new learning activities, and prepare teachers for a more integrated approach ;to teaching in local schools? Are there relatively more or fewer multi-disciplinary teacher certification programs today compared to 10 or 20 years ago? Are university teacher educators spending more time "circling the wagons around their respective disciplines," or designing new integrated curricular and teacher certification patterns?

The need for agricultural literacy is growing, but the number of individuals opting for agricultural career preparation has declined sharply in many rural communities. Local school districts have reacted in a number of ways including the use of more agricultural telecommunication courses, sharing teachers across school districts, developing magnet programs among school districts, or eliminating agricultural education programs.

It is interesting to observe that these same socio-economic forces have impacted the educational programs offered by Extension Service of the United States Department of Agriculture. Likewise, these programs are using more telecommunications programs, sharing local agents and programs across county lines, or eliminating personnel and programs.

Perhaps we are at a point in many communities where the agricultural educator(s) should serve both the local schools and in the more informal extension programs. Community resources could be consolidated to address priority agricultural education needs as are mutually determined. In 1992, do we still need an extension program advisory committee in every county and a high school agriculture advisory committee in every school district with a program, or would local communities be better served with some representative agricultural education advisory committee? How are university agricultural education faculty and extension program leaders currently working together to develop new educational delivery systems and to prepare human resources to address this educational opportunity? Over the years, we have seen much consolidation of agribusiness and industry with the subsequent introduction of new products and delivery systems. Therefore, it does not seem unreasonable to suggest that agricultural educators should be expected to modify products and delivery systems to meet changing needs of consumers.

### **Strengthen Teaching Competencies of Agricultural College Faculty**

A significant underdeveloped market for the professional contributions of college agricultural education faculty exists very close to home. Specifically, agricultural education faculty should more aggressively seek to develop teaching skills of graduate students enrolled in colleges of agriculture and natural resources and provide in-service education for faculty members in these colleges.

The principal expertise of the agricultural education faculty member is understanding the teaching and learning process. The principal deficiency of far too many agricultural

and natural resource college faculty is a lack of understanding of learning styles and teaching techniques. Therefore, it should be a high priority of agricultural education faculty to address this opportunity as L. H. Newcomb has done via a telecommunications course earlier this year.

I do not have national data regarding the proportion of agricultural and natural resource Ph.D. recipients who have earned three or more academic credits in learning theory or teaching techniques. I suspect that fewer than 25 percent have done so, and I also suspect that nearly 100 percent of the doctoral degree recipients have appropriately completed more than one course on research design, techniques, and methodologies.

Whether doctoral degree recipients are subsequently employed in academe, in public research laboratories, in privately conducted research operations, or elsewhere, I believe that they need excellent skills in both teaching and research to be effective and productive professionals. I do not subscribe to the commonly held academic value in colleges of agriculture and natural resources that one must invest several years to acquire requisite abilities to conduct research properly, but almost everyone is innately talented to each effectively.

Again, agricultural education faculty members have the comparative advantage to evaluate the teaching and learning process and to provide high quality teaching techniques. For the improvement of agricultural education at all levels, they must be more involved with the pre-service and in-service education of all university agricultural and natural resources faculty.

### **Expand Programs for Elementary Education Teachers**

Perhaps the greatest challenge in agricultural education today is to help the total U.S. population develop a basic understanding of the food, agricultural, and natural resource system. While most agricultural education programs have been directed to vocational or professional preparation, I believe that college and university faculty must seize the opportunity to stimulate the development of agricultural literacy by a larger proportion of the population.

Specifically, agricultural education faculty should work more diligently with teacher educators of elementary school teachers to provide pre-service and in-service modules or courses for improving the food, agricultural, and natural resources instruction in the primary graduates. Not only must agricultural education faculty be directly involved in this high priority initiative, but also they should capitalize the interests and contributions of other agriculture and natural resources faculty to elementary school educational programs.

I believe that it is the agricultural education faculty who must take the first and most difficult step in developing an ongoing working relationship with elementary school teacher educators. While an initial thought is that agricultural literacy could best be enhanced by requiring elementary education majors to complete one or more courses in agriculture and natural resources in their undergraduate curriculum, that is not likely to occur soon. Like agricultural education, the diversity of the elementary education curriculum allows very few degrees of freedom for the requirement of additional courses. Yet, most teacher education curricula have some electives. From a realistic perspective, the initial opportunity for agricultural educators is to develop courses for elementary education majors which are so stimulating that a large proportion will elect to include one or more in their programs of study. Similarly, in-service courses for elementary school educators must be postured in the same manner.

### **Broaden Programs to Better Prepare Industry and Agency Educators**

This paper does not address the agricultural education research agenda. Generation of new knowledge is critically important to any profession. However, it is a topic which is deserving of a more extensive analysis that could be accommodated within the editorial constraints of this discussion. Therefore, agricultural education research priorities should be examined separately. but, in my opinion, should support the five priorities which have been presented.

College and university agricultural education faculty members have some excellent current opportunities to use their imagination, as Albert Einstein suggested, to advance the profession to a higher level of achievement and productivity. Excellent high school teacher preparation programs must be provided. The corner stone of the profession is teacher education and the legacy is providing excellent teachers for local communities. Let's redesign the current teacher preparation curricula to put more emphasis on the scientific and business tools which our graduates need to be effective as agricultural science and business teachers in local communities.

Agricultural education faculty must continue to exert leadership in educational program development. Let's offer more multi-disciplinary teacher certification programs which will capitalize on the symbiotic relationships of agricultural, environmental, and life science education. Let's work with the leadership of the Cooperative Extension Service to modify agricultural educational delivery systems in local communities, and provide appropriately prepared agricultural educators.

Teaching competencies of agricultural college faculty must be strengthened. Let's be more aggressive in working with college of agricultural and natural resources administrators and graduate education committees to provide more pre-service and in-service courses which focus upon learning styles and teaching techniques. Not all agricultural and natural resource doctoral degree graduates and current faculty members are innately gifted teachers.

Agricultural education faculty must facilitate agricultural literacy through expanded programs with elementary education teachers. Let's work more closely with elementary school teacher educators to design and offer modules and courses which will help elementary school teachers to be more effective in using food, agricultural, and natural resources information in their science, reading, and social studies units.

A growing proportion of agricultural education is being provided by agribusiness and agency educators. Let's develop and offer more in-service programs on educational techniques to these representatives. Let's offer more agricultural education courses that are attractive to agricultural and natural resource undergraduate students who are not preparing to be high school agriculture teachers. Many of these graduates will subsequently find themselves in educational roles in businesses and agencies.

Well, its time to stop reading this article and put your imagination to work. There are important agricultural education priorities that need your attention, now!