

AGRICULTURAL EDUCATION

An Important Component of the Public School System

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**People are just beginning to realize that
agriculture is more than farming**

The Setting

A recent report from a specially appointed national commission on excellence in education characterized the United States as a "Nation at Risk." There was an admonition that our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world. The report cites one cause of this deterioration as a rising tide of mediocrity in education and the "unthinking, unilateral educational disarmament"¹ which has, gradually and largely unnoticed, eroded American education. According to the report, the purpose of education, high ideals and disciplined effort seemed to have been lost. Public opinion polls on education taken by George Gallup and others in recent years describe a general deterioration in the public's opinion of education which has only this year begun to reverse.

Indicators of risk for American education are not only found within the United States environment but through comparisons of test scores with students from the international scene. College Board test scores, 23 million illiterate adults, lower test scores when compared with international students, and the increasing need for remedial math in colleges substantiate the concern about American education.

Accountability, back-to-the-basics, and quality education have become the focal point of the education movement in an attempt to counteract the trend in the public school system. Among the recommendations from *The Nation At Risk Report*² are improving curriculum content,

standards and expectations, teaching time, and the preparation of teachers. Four years of English, three years of math, three years of science, three years of social studies and one-half year of computer science were recommended graduation requirements for everyone. Two years of foreign language were strongly recommended for college-bound students. The *Report* also calls for "rigorous effort in subjects that advance students' personal, educational, and occupational goals, such as the fine and performing arts and vocational education."

Unfortunately, the greatest public awareness and concern seems to be with increasing the academic requirements suggested in the Commission on Excellence's *Report*, while largely ignoring the development of occupational goals and vocational education. The focus of this article, then, is on the importance of vocational education and, in particular, agricultural education. The characteristics of the agricultural education programs in the public school system are reviewed. A second section will address the importance of agricultural education at the local, state, national and international levels from several viewpoints, including economic, political, social, and its impact within the school setting. The third part of this article will discuss some potential strategies for planning agricultural education programs to adequately meet the needs of youth and adults for the foreseeable future. The final section will offer a crystal-ball scenario on the future of agricultural education programs in the public school educational system.

Characteristics of Agricultural Education Programs

Vocational agriculture in the public school system is comprised of three components, including classroom and laboratory instruction, an intracurricular youth organization (Future Farmers of America, FFA), and occupational experience programs. These educational programs are located in comprehensive high schools, area vocational schools, and community and junior colleges, and involves over 893,000 students in 8,000 schools. In addition, some schools teach agricultural education as an avocational

subject in the junior high and upper-grade levels for students who do not plan to pursue agriculture as a career. More recently, some states have integrated agricultural units into the curriculum for all students in grades K-12. Traditionally, adult agricultural classes have been part of a local school offering which is frequently taught by the high school instructor. Recent trends for adult programs show a decline in number and a shift to a fulltime adult instructor or a reduced day schedule for the local teacher who teaches adults at night.

Classroom and laboratory instruction teaches concepts, skills, and technical information and develops attitudes based on the nature of enterprises and employment demands within the agricultural industry. The laboratory is often used for application exercises related to concepts and technical subject matter learned in the classroom. Laboratories may include an agricultural mechanics shop, greenhouse, nursery, school farm, forestry plot, conservation and recreational land use area, small animal care facility, and other facilities related to the agricultural subject matter being taught.

Work experience brings reality to occupational instruction. This program component offers opportunities to individualize instruction and truly focus on the competencies essential to employment. Nationally, secondary student experience programs produced over \$712-million of net income during the 1983-84 school year. Through this key program component, students select placement or ownership projects related to classroom instruction and their career goals which they conduct outside of school time. Teachers supervise these projects by visiting the worksites, which range from agricultural feed and seed stores to animal or crop projects on the farm to a small greenhouse owned by the student.

The *Future Farmers of America* (FFA) has become an increasingly important component of a quality program which has the potential to fuse together and strengthen competencies acquired in the other aspects of the program. It offers both a unique opportunity to communicate the program to the many publics in ways that bring out the best in learners and unique opportunities to develop humanistic qualities. Leadership, citizenship, and cooperation skills are developed in organization leadership positions and activities at the local, regional, state and national levels.

Adult education programs provide agricultural training and retraining opportunities to adults who are entering the workforce, seeking advancement, or wishing to upgrade their skills. Adult programs are often organized into adult and young farmer groups which have elected officers and conduct a full range of educational, social, and civic activities. Chapters are organized into state and

national affiliates. Other adult programs are topic-centered and meet for a specified number of meetings. Farm business management, landscaping, horse handling and care are but a few of the classes offered through adult programs.

Avocational agricultural education programs provide students who are not planning to enter an agricultural career with an introduction to agriculture science and mechanics, career exploration in agriculture, agricultural consumer skills, and/or citizen and homeowner skills. They are often taught as 7th, 8th and 9th-grade programs, although upper-grade-level high school programs are popular with students who wish to explore agriculture as a career or desire skills in such areas as lawn care, gardening, mechanical skills (woodworking, tool fitting, metalworking), landscape maintenance, and other agricultural skills.

Importance of Agricultural Education

Economic

As we enter the 21st century — 12 years from now — our present secondary school students will be the "in charge" generation. An examination of current trends indicates that they will experience a restructuring period in United States agriculture. Although the application of new technology is the most likely way to achieve higher production, economic factors will affect the development and acceptance of the technologies. These trends will include larger farm size, modernization of management methods, increased protection of natural resources, increased use of credit, higher rates of inflation and interest rates, and changing government farm policy.

The interdependency of nations and their industries will continue to increase and become more complex as agriculture remains this nation's, and the world's, largest commercial industry. For example, total assets of American agriculture in 1983 exceeded one-trillion dollars and provided 23-million jobs to 22 percent of America's labor force in farming, transporting, processing, manufacturing, and retailing food and fiber.³ The economic input of agriculture is 20 percent of the United States' gross national product. Hence, the relationship between the health of the nation and the stability and growth of American agriculture is clearly linked — and will continue to be linked into the next century.

Agriculture should be taught in the public school system since less of the public will have an awareness or appreciation for the importance of agriculture or the problems associated with the industry. A lack of information could produce a public less supportive of agriculture, an attitude which could have a negative impact on the

economic stability of agriculture and, ultimately, the nation's economy.⁴ Few people outside agriculture realize that real farm income dropped 20 percent between 1972 and 1983, or the fact that 54 percent of agricultural workers come from non-rural backgrounds. The general public needs to be made aware — through agricultural education — that agriculture is not a rural American industry, but one that touches everyone's life and economic status.

Agricultural education can provide the personnel needed to market US crops abroad. Approximately one of three US acres of crops are exported yearly. This market feeds a hungry world and provides the reinvestment collateral for American agriculture. In 1981, agricultural exports cut the potential United States balance of trade deficit in half, which promoted a more stable national and international economy. Agricultural exports can increase in the future, given properly trained marketing specialists who can manipulate political barriers associated with international trade.

Agricultural programs are needed in rural settings to educate youth and adults who have practical experience and an appreciation for agriculture. As a result, agriculture will continue to create millions of jobs and serve as the primary source of income in many of these communities. Only ten percent of secondary school agriculture students are unemployed, as compared to 16.5 percent of all high school graduates. People are just beginning to realize that agriculture is more than farming. Even though six percent of the labor force is employed in production agriculture, over 20 percent of all jobs require agricultural competencies.

In the future, agricultural education must provide a highly qualified source of labor which contributes to the expansion of local, state, national and international economics. Increased pressures from other sectors of the economy, which constrain profit margins, demand that the agricultural labor force adapt to new technologies and replace obsolete skills with new ones, build and maintain technical knowledge and skills, improve problemsolving skills, enhance communication and marketing techniques, and, in short, develop human capital to man the nation's largest economic input. Agricultural education directly contributes to the economic status of this nation and the world by developing human capital through the training of youth and adults.

Political

Agricultural education programs contribute to political stability in the world because of its economic importance and by satisfying human needs by training efficient and effective personnel. Kottman notes the importance of agriculture internationally:⁵

If there is any one thing that a government cannot tolerate, it is hungry people. There is no government, anywhere in the world, that can remain in power if very many of its people are hungry. This means that we (the United States) must continue to produce food for export to developing nations . . . during the critical period they are trying to produce more food and struggling to develop their commerce and industry. Our ability to produce food is clearly the strongest weapon in our arsenal.

Agricultural education develops leadership and citizenship skills, along with the technical competencies needed to produce and deliver food to the American and international populations, thus fostering political stability in an unstable world.

Unfortunately, agriculturalists need to be taught how to deal with political developments and directions which continually threaten agriculture, including the increased influence of special interest groups, governmental regulation of agriculture, political pressure for cheap food, and a more decentralized federal and state government.⁶ These are examples of the political realities the agricultural industry must address.

In essence, agricultural leaders must be trained in leadership and citizenship to be effective legislatively and politically to guide the industry in the proper direction. Personnel need to be educated on the ramifications of trade and marketing agricultural products in a world marketplace. Secretary of Agriculture John Block stated:⁷

. . . to keep agriculture competitive is a challenge we must take seriously. It is a challenge which requires the combined efforts of government, industry and academia. So, let's make a commitment to take those steps necessary in assuring that our nation will always have a pool of highly qualified food and agriculture scientists and experts. Let's keep that competitive edge!

Social

Agricultural education is most important to those directly involved with agriculture, but is also important to American society in general. Consumer influence, increased activity of women in the workforce, demographic shift of the population to urban and suburban areas, a shorter work week, available sources of energy, changing class structures, and changing organizational structure of government and society⁸ are but a few examples of societal changes which will affect the agricultural industry. A healthy agricultural industry can provide jobs as new segments of society enter the workforce. Vocational agriculture blends social, economic, and political objectives to provide self-support, self-fulfillment and mobility within the workforce. Benefits of vocational programs according to Law and Greenwood are promotion of ". . . equality of opportunity, distribution of income, social compensation,

work satisfaction, national defense, and productivity and commercial leadership."⁹

The purposes of vocational agricultural programs include preparation for employment or self-employment in agriculture, upgrading and retraining for agricultural occupations and for agricultural career exploration. These purposes can help solve problems of the displaced worker, youth seeking summer employment or first-time employment, employment needs of special populations, such as women, minorities, and the handicapped. Agricultural education programs at the secondary level also provide for upward mobility in agricultural jobs and for continuing education at the postsecondary and university levels.

Abilities of individuals to be intelligent consumers of agricultural products can be developed in agricultural courses which serve vocational and avocational interest. Heckel¹⁰ recognized an increasing but uninformed interest in the use of land and water, preservation of natural resources, and conservation of energy which suggests a need for avocational as well as vocational agriculture.

Opening space in high school vocational classes for adults was recommended by Bottoms¹¹ as a promising way to make full utilization of existing school resources and for meeting society's educational needs. Adult as well as youth education has traditionally been an important part of agricultural education. An increasing percentage of our population in the adult range demands that more attention be given to this area.

Agricultural education can also support a healthy environment within the school setting. Todd¹² stated that excellence in vocational agriculture includes creating intellectual curiosity, accommodating different levels of student ability and interest, and providing a range of learning opportunities which appeal to all students. Some students need hands-on activities in order to learn subject matter or because it is satisfying to them. Vocational subjects such as agriculture can accommodate students' interests; the social, cultural and economic divergence of students, and their current and projected economic and job needs.¹³ Agricultural education programs provide career opportunities for high and low academic achievers. Some students are encouraged to stay in school because of their rewarding experience in vocational agriculture.

Agricultural education can continue to contribute to individual and societal needs. In education, the current trend is to emphasize the basic and academic subjects. Increased requirements in math, science, foreign language, the arts and social studies make it increasingly difficult for students to enroll in vocational subjects such as agriculture. Agricultural educators must become astutely aware of the forces and factors which could inhibit the

teaching of agricultural education in the public school system. The next step is to identify coping strategies which will allow agricultural educators to intervene and influence a positive direction for education in agriculture.

Strategies for Coping with Change

In a period of educational reform, agricultural educators and others responsible for the program must be convinced of the importance of agricultural education in the curriculum. This conviction must not be based on blind faith, on tradition, or a loosely conceived hope of things to come; but, rather, on the need for agricultural education based on the wants of society and of individuals and balanced with other possible curricular offerings in considering the quality and merits of the program.

Drake,¹⁴ in an address to the American Association of Agricultural Educators, called attention to three fantasies: (1) Agricultural education is absolutely essential to the agricultural industry of this country, (2) our current programs are indispensable and untouchable components of the public school system, and (3) the ability of agricultural teachers to stay abreast of the exploding technical knowledge developing all across the agricultural industry. Drake further questioned the superhuman role expected of agriculture teachers in carrying out all the expectations that have accumulated year after year. This is a critical time to examine the role of agricultural education of public schools.

Because of the competition for instructional time and other factors, the supportive environment for agricultural education has eroded from its former levels. The public needs to know about the high-quality, relevant instruction found in the program. There is no room for outmoded programs which take the form of work details in equally outmoded instructional laboratories, poorly organized lessons, lessons based on outmoded technologies, and teachers who project a poor image for their students, parents, and the community. Poor quality projects must not leave the school grounds. Agricultural educators must continue to monitor and improve programs at the local, state and national levels — perhaps most importantly at the local level.

National level agricultural education standards developed in the mid-70s was adopted and provided to states for their adaptation and adoption. The model included input from state teams which selected representatives to provide input at the national level. The national model was then given back to the states for adaptation to their individual state programs. Perhaps it is time for review of these standards based on a rapidly changing environment. Agricultural educators should not overlook the ongoing efforts of agricultural professional associations, the national ad-

visory council for agricultural education, and leadership from the US Office of Education which provides consistent, national-level leadership. Educators will increase their reliance on these agencies to maintain a strong leadership role which is well-defined among these separate, but closely related, agencies.

State-level joint staffs, composed of agriculture state supervisors, teacher educators, and teachers, provide leadership in the respective states. The *Nation At Risk Report* calls for state-level planning to improve education in the respective states, given some general recommendations from the Commission. These recommendations largely stress increased academic requirements and standards. It must be assumed that agricultural education is part of state-level reviews and forthcoming recommendations. Leadership from the joint staffs, or a delegated group appointed at the state level, could have major impact on state-level changes for agricultural education programs. The time is right for state-level analysis of directions for agricultural education in the future. Critical decisions on curriculum content, funding, facilities, and staffing could dramatically affect the program for the next century. If agricultural educators do not offer recommendations and support them, recommendations will be made by those outside agricultural education.

Local-level agricultural education programs must relate to local-level agricultural industry and community needs. Active, bonafide advisory committees provide a means for yearly — and more frequent — review of the program to assure high quality. However, the agriculture teacher usually needs to provide encouragement and direction to assure reviews are thorough, well-documented, and seriously conducted. It may be necessary to make a more thorough review every three to five years by spending more time with the course of study and all other aspects of the program. Written recommendations to school personnel is an essential step toward maintaining high-quality programs and making needed improvements.

Other considerations to maintaining program strength in agricultural education includes close working relationships with school board members, school administrators, agricultural industry representatives, parents, teacher educators, and agricultural state supervisors. Seeking the advice of individuals outside our profession is important at local, state, and national levels. Realistic program goals based on futuristic recommendations can provide the formula for continuing successful agricultural education programs.

Agricultural education programs should not be discontinued in communities with a large agricultural base, or where there is other justification for a program. This situation has happened and will continue to happen in econo-

my moves by school administrators where little evidence of need or support of the program has been generated locally, at the state or national levels, or where programs are outmoded and no longer viable.

Future of Agricultural Education

Given the past success of agricultural education and the scope of the agricultural industry, it would seem that the future of the program is unquestionable. Economic, social, and political contributions of agricultural education noted in this article provide additional evidence of the merits of the program. Yet, there are forces and factors which could adversely affect vocational agriculture such as a declining agrarian population, tighter school budgets, a compressed teaching schedule due to increased academic requirements, and a general lack of understanding and appreciation for agriculture.

From an optimistic viewpoint, agricultural education will continue as a viable option for public school students as long as high-quality programs are maintained at the local level. The maintenance of superior programs will be more difficult for agriculture teachers of the future because of the high cost of high-technology equipment and practices to be found in agriculture of the future. Close, cooperative relationships with the industry and advisories committee will make the job easier. In school, classroom and laboratory instruction will probably focus on principles and practices, basic skill development, leadership development, positive work ethics, and management skills. Technical skill development will be shifted to laboratories shared in partnership with industry or located in postsecondary programs. Innovative scheduling practices and interfering with the total school curriculum will be needed.

The importance of vocational education in agriculture has been vividly demonstrated since its very inception by the Smith-Hughes Act of 1917. Its educational impact on the economic, political and social infrastructures of the United States will undoubtedly increase in the future. As an integral component of the public schools, education in agriculture must continue its vital contribution to a comprehensive curricular system. To do this, it must maintain high standards leading to meaningful instruction relevant to the needs of the agricultural industry, consumers, and populations with avocational interests in agriculture. Perhaps Daniel Webster most accurately and eloquently described the importance of education in agriculture when he said, "Let us never forget that the cultivation of the earth is the most important labor of man. When tillage begins, other arts follow. The farmers, therefore, are the founders of human civilization."

Footnotes

¹The National Commission on Excellence in Education. *A Nation at Risk: The Imperative for Educational Reform*, A Report to the US Secretary of Education, Washington, DC : US Government Printing Office, 1983.

²*Ibid.*

³United States Department of Agriculture. *The Nation's Largest Industry*, Washington, DC : US Department of Agriculture Office of Information, 1983 (Bulletin).

⁴Kelly, Warren. "American consumers need to be concerned about the farmer's plight" in *West Virginia Voc-Ag News and Views*, 33, March-April 1983, pp. 17-18.

⁵Kottman, Roy. "At the center of life and living," unpublished prepared speech, Columbus, OH, 1981, pg. 17.

⁶Project 2000 Forum. *Trends and implications for agricultural education in Iowa*, Ames, IA : Iowa State University, 1986.

⁷Block, John. *Challenge Forum*, January 16, 1984.

⁸Project 2000 Forum, *op. cit.* See Footnote 6.

⁹Law, Charles J. and Kathy Greenwood. "Toward economic goals and objectives for vocational education" in *Vocational Education and the Nation's Economy*, Paul V. Braden, ed., Washington, DC : American Vocational Association, 1977.

¹⁰Heckel, Maynard. "Your job in the 80s and beyond," Taped Excerpts, Wisconsin Extension Association Annual Conference, 1984.

¹¹Bottoms, Gene. "Now is the moment of opportunity" in *VocEd*, 59(7), 1984, pp. 8-9.

¹²Todd, John D. "Toward excellence in vocational agriculture" in *Tennessee Agricultural Education Service Bulletin*, 31(1), August 1984, pp. 1-5.

¹³Parks, Darrell L. and Gail H. Henderson. "An agenda for action" in *VocEd*, 59(7), 1984, pp. 37-39.

¹⁴Drake, William. "Agricultural education fantasies, facts and futures: a re-examination" in *The Journal of the American Association of Teacher Educators in Agriculture*, 23(2), 1982, pp. 1-14; 26.

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