THE VISITOR

Devoted to the Interests of Agricultural Education in Minnesota Schools

Volume XLVI April, 1959 No. 2

Time For Clear Thinking About Agricultural Education

by

GORDON I. SWANSON, Associate Professor
Department of Agricultural Education
University of Minnesota

During the past decade agriculture educators have heard an almost unrelenting chorus of commentary concerning the change in agriculture teaching. Some of it has been aggressive and some of it has been defensive. Most of it has been apprehensive and all of it has been challenging.

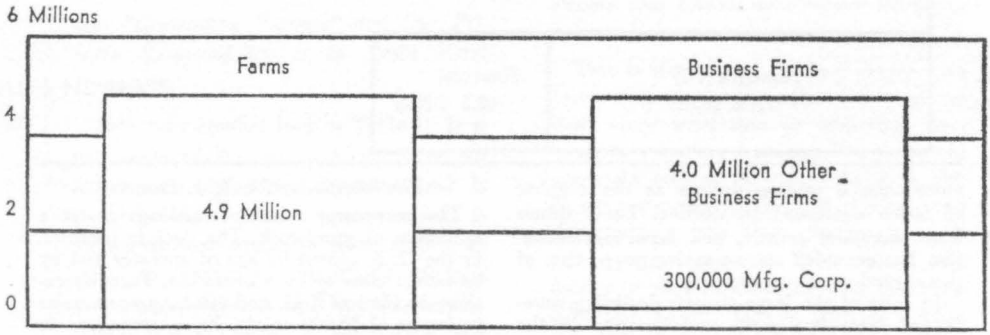
Most of the commentators have agreed that agriculture has undergone great change and that adjustment in agriculture is well underway. Some have agreed that efficient agricultural production solves problems for some people and creates problems for others. There is little agreement, however, on the adjustment that is necessary in the thinking that will give direction to agricultural education in response to agricultural change — past, present or future.

The Present Farm Business

There has been a decline in the number of farms in the United States since 1910. It has been estimated that the average annual reduction in farm numbers is approximately 100,000 per year. At the same time the total cropland has remained relatively constant and, accordingly, the average farm size has increased. But the change in number of business units is not unique to agriculture. The number of business firms of all types has declined in the last several decades. There are fewer food stores, fewer creameries, fewer central markets, and fewer business firms of all types now as compared with a few years ago. Even with the reduction in the number of farms, the United States still has more farms than it has other types of business. Figure I shows the relative number of farms as compared with other businesses.

Figure I

Farms and Other Businesses in the U. S. — 1957[1]



[1]Figures I, II, and III have the following sources: U.S.D.A., Harvard School of Business, Business Week Magazine and the McGraw Hill Dept. of Economics. They are reproduced here by permission and as shown in the *Coop Grain Quarterly*, Vol. 15, No. 4, Winter 1957, p. 8.

VISITOR

Published quarterly during the calendar year in October, January, April, and July, by the Division of Agricultural Education, University of Minnesota, University Farm, St. Paul 1, Minn.

Entered as second-class matter at the post office at St. Paul, Minn., under the Act of August 2, 1912.

Accepted for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized August 2, 1918.

THE STAFF

VIRGIL CHRISTENSEN GORDON SWANSON
HARRY KITTS A. M. FIELD
M. J. PETERSON, *Editor*

The capital requirements of farming is another factor that has undergone great change and is continuing to change. Various estimates have been given of the capital investment required to acquire and operate a farm. The range is from $25,000 to $100,000. Regardless of how it is estimated the figure is large, too large for a person without unusual circumstances. The capital requirements for farming are reflected in the balance sheet of agriculture and particularly in farm assets.

Figure II shows the relative position of agriculture with other businesses in the United States in 1957.

Moreover, farm assets are rising rapidly. From 1957 to 1958 farm assets rose a little more than 8 million dollars as the number of farms continued to decline. Land values have increased greatly, and farm mechanization has occupied an increasing proportion of the capital assets of farmers.

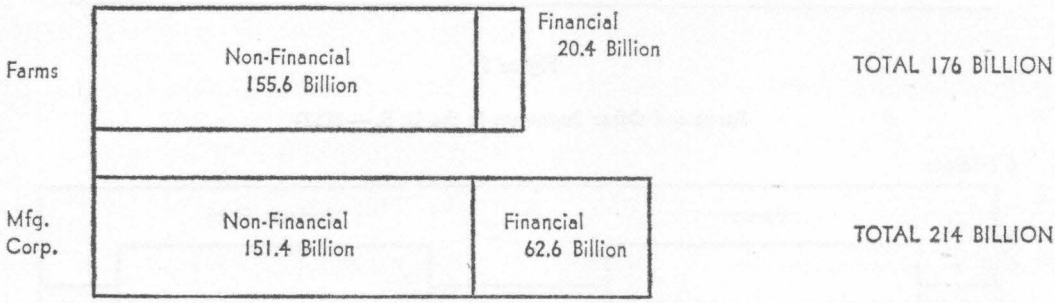
In spite of the large though declining number of farm businesses and in spite of the high capital investment in farming, the number of workers needed to operate the farms is relatively small and the amount of sales from farming is low compared to other businesses. Figure III shows a relative comparison between farming and other industry.

Farmers employ only 1 in every 10 workers as machines do an increasing share of the farm work. At the same time, farm sales are about one-tenth of industry's sales. There is a pattern of declining employment along with increased production and increased efficiency that does not appear to show itself in comparative sales. The farm plant has set the pace in adapting new technology and in increasing efficiency. Following are some of the measures of efficiency that have characterized agriculture in the past several decades:[2]

1. It now takes around 5.8 pounds of feed per dozen eggs compared with 7.3 in the 1929-33 period.
2. It now takes 2.4 pounds of feed to produce a pound of broiler as compared with 5.0 pounds in 1930.
3. It now takes 3.6 pounds of feed to produce one pound of turkey compared with 6.5 pounds in 1930.
4. It now takes 3.1 pounds of feed to produce a pound of pork compared with 3.9 pounds in 1930.
5. Each farm worker now produces enough farm products for himself and 22 others. The comparable figure was 10 others in 1930.

Figure II

Farm and Other Business Asset in the U. S.—1957



The Manpower Needs in Farming

The manpower needs of farming involve a minimum of guesswork. The data is recorded in the U. S. census by age of operator and by economic class of farm operation. Farm operations in Classes I, II, and III have gross sales in excess of $5,000 yearly. Farm operations in Class IV have gross sales ranging from $2,500

[2]Kramer, Robert C., "Mobilizing Economic Forces For Better Country Life." Proceedings, American Country Life Association, 1958, p. 24.

to $5,000, and farm operations in Class V and VI have gross farm sales of less than $2,500 per year. Table I shows the number of operators in each of the classes and their ages.

Figure III

Employment and Sales in Agriculture and Other Businesses — 1957

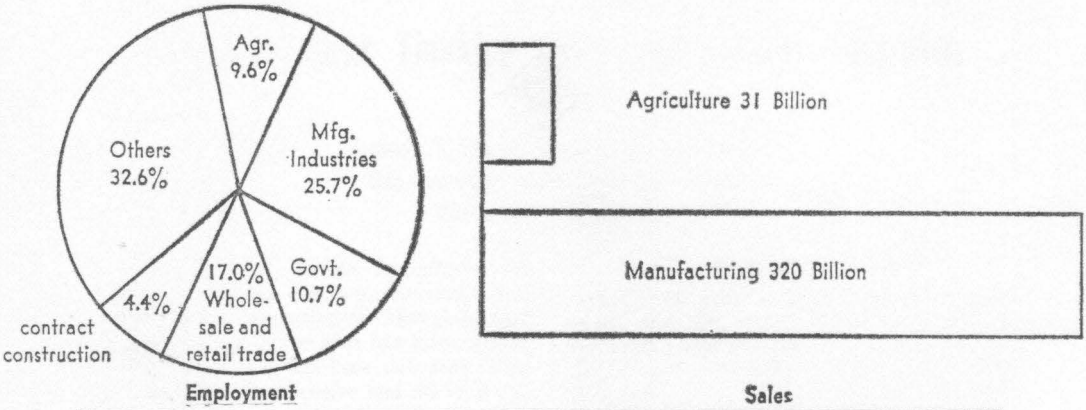


Table I

Age and Economic Class of Commercial Farm Operators in the U. S. — 1954[3]

Age Group	Class I, II, and III	Class IV	Class V - VI	Total
25 or less	23,921	17,897	30,183	72,001
25-34	222,205	111,839	125,855	459,899
35-44	355,809	197,864	223,312	776,985
45-54	329,572	206,584	272,848	809,004
55-64	227,300	164,197	277,090	668,587
65 +	109,039	100,014	268,788	477,841
Total	1,267,846	798,395	1,198,076	3,264,317

Mr. C. L. Beale of the Farm Population Branch, A.M.S. has projected the survival rates of the 1954 farm operators for the ten year period, 1955-1964.[4] These survival rates assume that the death rates among farm operators will be the same as for the total male population as a whole. Assuming also that there will be a relatively small change in the stratification of age groups in the 1955-1964 period, the replacement opportunity as farm operators may be calculated as shown in Table II.

Table II

Replacement Opportunity Based on Death and Retirement, 1955-1964 for Commercial Farm Operatorship

Age Group	Replacement % in 10 yrs.	Replacement Opportunities in Class I, II, & III	Replacement Opportunity in Class IV	Replacement Opportunity in Class V & VI	Total Replacement Opportunity
Under 25	1%	239	179	302	720
25-34	2.6%	5,777	2,908	3,292	11,957
35-44	6%	21,349	11,872	13,399	46,619
45-54	14.3%	47,129	29,541	39,017	115,688
55-64	29.5%	67,053	48,438	81,742	197,233
Over 65	100%	109,039	100,014	268,788	477,841
Total Ten Year Replacement		250,586	192,849	406,540	850,058
Replacement Opportunity Per Year		25,059	19,285	40,654	85,006

[3]U. S. Department of Commerce, Bureau of Census. Census of Agriculture, Volume I, Part 8, 1954.

[4]Shoemaker, Carl, "Opportunities and Limitations For Employment of Farm People Within and Outside of Farming." Proceedings of the American Country Life Association, 1958, p. 60.

The replacement opportunities for farm operatorships may be declining with a decreasing number of farms. More serious is the economic stratification of the replacement opportunities. The farms in Class V and VI provide only 7.1% of the total market sales in spite of great numbers. The farms in Class IV provide only 12.1% of the total market sales. Accordingly, the replacement opportunities in the lower three classes are less than desirable as income producing replacement opportunities.

The Educational Task and Responsibility

If one could address some remarks to the high school enrollment in vocational agriculture, what should be said concerning farm opportunity? What is the availability of farm operator positions and how desirable are these positions?

First, it might be well to know that these remarks in 1957 would have been addressed to a total of 458,242 boys enrolled in high school vocational agriculture. They should be told that not more than 74% of their number would find operator replacement opportunities, and of this number 52% would need to accept opportunities where total farm sales have been less than $5,000 yearly. Only 22% of the enrollment could expect to find farm operatorships where sales had exceeded $5,000. Here it might be important to question whether the operation of a farm with less than $5,000 in gross sales is a particularly desirable career objective for today's young future farmers. All of the above is true, subject to two limitations:

1. That the boys enrolled in vocational agriculture will have no competition from those not enrolled as they search for operator opportunities.
2. That they have the skill, ability, and resources to become established in farming.

Obviously, the opportunities to become a farm operator are more meager than can be described with census data. But the opportunities in agriculture are numerous compared with the number of farm operatorships available. Actually there are many farm operators who are engaged in occupations that are related to farming, or perhaps one should say that they are engaged in farming that is related to another occupation. Forty-five percent of all farm operators in the United States work off the farm for remuneration. About 28% of them are working off the farm more than 100 days each year. Moreover, the total commercial farms indicated in Table I (3,264,317) are only about 70% of the total farms in the country. The others (1,455,000) are part-time and residential farms where agricultural production contributes significantly to total income. These units also have operators that may choose to avail themselves of educational opportunities in agriculture. If one wished to include the part-time and residential farms in his portrayal of farming opportunities to the high school enrollment, he could promise a farm production opportunity to every enrollee. This, however, would need to be conditioned by conscience as well as the limitations previously noted.

It has been estimated that 40% of the American labor force is either engaged in farming or else in agriculturally related industry. Presumably, agricultural knowledge and skill are important to their occupations and to their occupational advancement. If this is true, there is an agricultural education responsibility to this group whether on the elementary, secondary, or higher education level.

The adult education responsibilities to farmers have always been emphasized. Actually they may be greater than they appear to be. The educational attainments of farmers are low — lower than might be expected in view of the remarkable increases in the efficiency levels of agricultural production.

Some of the facts of formal education of farmers are:[5]

1. 79% of the Adult Farmers in the U. S. dropped out of our public schools before completing high school.
2. 63% of our Adult Farmers never entered the 9th grade.
3. The average grade level achieved by farm men in the U. S. is between the seventh and eighth grade. The average for the United States is 10½ years.

[5]Mount, John T., "Mobilizing The Forces of Education For Better Country Life." Proceedings of the American Country Life Association, 1958, p. 8.

4. Of the Young Farmers aged 26-32 in the U. S. less than ⅓ have completed high school and approximately 20% have never enrolled in high school.

Some Illusions About Agricultural Education

Finally, let's get rid of some illusions that have aroused apprehension about agricultural education and its task in the public schools. These illusions may come under the heading of comfortable luxuries of a previous day that are indefensible in the present situation.

1. *A Measure of Our Teaching Effectiveness is the Number of Our High School Students Who Decide to Become Farm Operators.*

This has never been true! The measure of effectiveness is the extent to which agricultural knowledge and skill is utilizable *wherever* it is put to use. In any normal distribution of agricultural knowledge, skill, interest, and achievement, it cannot be expected that all will enter a specified segment (farming) of the agricultural industry. To do so would ignore the selecting and sorting function of the school and nurture an educational function that occupies a narrow range of interest within the broader range of agricultural knowledge, skill, achievement, and opportunity.

2. *Our "Controlling Purpose" and Our Primary Responsibility is to Train Farm Operators.*

Let's take another look at Table II. Is it our responsibility to train operators for low income replacement opportunities? Is it to the higher income operations? Is it an agricultural education responsibility to ration or restrict its educational offerings to any agricultural group? No! Our responsibility is *to the public, to our subject,* and *to every student, young or adult, who elects to enroll in an agriculture course.*

3. *All Boys Interested in Studying Agriculture are Interested in Becoming Farm Operators.*

This is obviously not true and it never has been true. There are many students in high school agriculture that are in search of information that will assist them in future occupational training and decision making. Many students find such information in high school vocational agriculture and many have been given a good foundation for a career in agriculture other than that of a farm operator.

4. *There is a Decreasing Need for Including Agriculture as a High School Subject.*

This is the most fantastic illusion. Agriculture is one of the primary areas of scientific research and discovery. Its contributions to other disciplines and to the public welfare are sufficient in themselves to provide teaching content of compelling importance. Of the federal research and development obligations, the Agriculture budget is exceeded only by the Department of Defense, The Atomic Energy Commission, and the Public Health Service. In the year 1956-57, the Federal Government spent 102.5 million dollars for agricultural research and employed more than 13,000 research workers for the basic and applied research tasks. It is unthinkable that the public welfare is served by not communicating this research through the channels of secondary education.

5. *We are not Qualified to Teach Young People who Choose to Prepare for Occupations Related to Agriculture.*

This is like saying that we cannot give instruction to parttime farmers because we don't know what they do with their time when they are not farming! This is an old argument and as ridiculous as it is old. If we serve the public, our subject, and the students who elect courses in agriculture, we need not worry about the *variety* of ways in which students find their education useful. This is true, of course, only if we have not abdicated our teaching responsibilities and the standards of performance in learning.

Agricultural education is not a creature of the laboratory, the shop, the classroom, or the farm, even though we get most of our content from these sources. Its most useful human attributes are open mindedness and adaptability. With these qualities, and some clear thinking, agriculture educators will help to shape a future, not succumb to it.