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AGRICULTURAL EDUCATION

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AGRICULTURE IN ELEMENTARY SCHOOLS

The place that instruction in agriculture should occupy in the program of the elementary school is a question on which there is much difference of opinion and marked divergence of practice. A generation ago there was considerable agitation for a better adjustment of the rural school to its environment, and most students of rural education apparently accepted the view that instruction in agriculture should be a part of the program of the elementary school. A recent report by a committee of the American Association for the Advancement of Agricultural Teaching states that 28 States require that agriculture shall be taught in the elementary rural schools. Textbooks published to meet the demand for this type of instruction, and outlines prepared to assist teachers, show clearly that the training of students for rural occupations was the chief end sought. Improvement of farming was the uppermost object.

In recent years much consideration has been given to the objectives of the elementary school, and numerous curriculum studies have been made. As a result there is much less certainty on the part of many regarding the desirability of the type of instruction in agriculture that was originally introduced into the elementary school. More careful analyses of the economic and social implications of such a program of instruction have also contributed to the recognition of the undesirability of using the elementary school in the rural community as an agent of propaganda for making farmers and farmers' wives of boys and girls who chance to live in the open country.

One of the most challenging philosophical discussions of the use of the elementary school for directing children toward farm life has been written by Dr. O. G. Brim.[1] Doctor Brim has gathered from a large number of educational writers statements that show the very

[1] Rural education, pp. 209-211.

general acceptance of the vocational objective in agriculture for the elementary rural school.

Those who have most fully imbibed the urban, economic conception of the farmer-group see the rural child as a producer only and his social service mainly in terms of food. Guided by this idea, one who desires the school to realize the most efficient citizenship from the community states that the "distinguishing mark of efficient citizenship in the rural community is skill in the production of food." This conception of the rural child as a producing factor in the rural occupation has stimulated various lines of endeavor. "Agriculture must be taught, because that is to be the occupation of most of the pupils of the rural school, and because the school can greatly increase their efficiency on the farm." "A thorough course in manual training is highly desirable and useful," because "the modern farm with its variety of machinery, tools, special type of buildings, drainage systems, concrete construction work, etc., taxes the ingenuity of the farmer." Industrial club work, junior projects, home project study, and vitalized agriculture—limited almost entirely to rural occupational problems, emphasizing economic return and maximum physical product, and fostered by agricultural interests from the adult point of view—are indeed being largely accepted as the solution of the rural school problem. These are believed to offer a satisfactory educational content for the rural child.

It is evident that many of these writers have misconceived the purpose of elementary education and the essential characteristics of a life that is good for the child and desirable for a democratic society. They ignore the fundamental task of elementary education, which is to make the child a member of society in the fullest sense. They aim from the first to make him a member of a group. They emphasize the differences, the qualities wherein his parent group is unlike others, instead of strengthening the bonds that unite him to all peoples. They center his attention upon local problems, instead of creating interests for him common to the groups with whom he must cooperate. They develop occupational ability rather than ability to participate in the problems of social progress; and then complain because he is not given a place in governmental affairs. "Society must advance toward the ideal democracy of which we dream through a broadening of the range of suggestion that floods the individual." Yet many would doom the rural child, already handicapped in his contact with the world, to a rural diet in his school experience. It is of primary importance to society and to the individual that each be free and intelligently prepared to choose his own field of work. But instead of meeting this fundamental provision, these men determine the child's future upon the accident of birth, and use the institution dedicated to his larger growth as a means of limiting his vision and determining his choice.

The development of a six-year elementary school and the growth of the junior high schools have contributed to a clarification of the aims of education for these school periods. Though the two forms of school organization have not yet been adopted widely in rural schools, the fundamental conceptions back of their growth are influencing the view regarding the functions of the elementary school in the rural community. It seems very unlikely that there will be any general return to the conceptions regarding the purposes of instruction in agriculture in the elementary school that have prevailed during the past two or three decades.

This does not mean, however, that the vocational objectives no longer are held, or that there is general agreement regarding the outcomes to be sought through instruction in agriculture. The following data regarding the purposes of instruction in agriculture in the seventh and eighth grades, recently collected and compiled by F. J. Smeeckle,[2] are evidence on this point:

Opinions of teachers and specialists on the purposes of agriculture in the seventh and eighth grades

Sources of replies	Number of answers	Percentages favoring different objectives				
		Vocational	Prevocational	Educational	Educational and prevocational	Vocational, prevocational, and educational
Teachers	95	10.5	19.0	64.2	6.3	0.0
Specialists	23	.0	26.1	47.8	21.7	4.4

E. E. Windes [3] points out the present confusion regarding the aims of agricultural instruction in the elementary schools, as follows:

In no other field of educational endeavor are conditions so chaotic as in the fields of elementary-school agriculture. Courses of study are found outlining work for each of the eight elementary-school grades, providing a continuous and comprehensive program. Other courses are found which outline work for a single grade only, and limit instruction to the consideration of a few problems in gardening. Between these two extremes every degree of comprehensiveness as to time and content may be found.

Avowed aims are equally variable. Definite vocational training is sought in some cases. A vague cultural aim is frequently phrased. Occasionally a conscious effort to make the course in agriculture the center of the elementary-school curriculum, and the dominant farm enterprise of the State the center of the agricultural course, is made.

Practically every method known to teaching practice is found. Occasionally there is an effort to apply the problem-project method to elementary-school agriculture, making the natural interest of the pupil a basis for choice of problems and local conditions the controlling factor in content and sequence of subject matter. The usual situation, however, is that a young girl with little training, academic, technical, or professional, hears the class read from a text, religiously avoiding discussion.

In spite of the lack of clarity of objectives for this phase of the elementary-school program, there is but little doubt, as has been indicated, that the movement in recent years has been away from the vocational objective. Students of the problem are accepting the view that, instead of using instruction in agriculture in the elementary school for vocational ends or as propaganda for farm life, it should take its place as a part of the program of instruction for

[1] From an unpublished study.
[2] Objectives in Elementary Rural School Agriculture. Rural Sch. Leaflet No. 11, U. S. Bu. of Educ.

vocational and educational guidance, or the "teaching for choice." Evidently this view is almost diametrically opposed to the one that has been commonly accepted, at least until very recently. It is much more nearly in harmony with the ideals of a democratic society than its predecessor. One writer[4] has set forth the reasons for rejecting the old aims of instruction in agriculture and placing it on a broader basis, in the following statement:

> Determination of capacity for economic service on the part of every prospective citizen is quite as important under a theory of democratic organization of society as it is under a theory of state socialism. Equality of opportunity is fully as dependent on such determination as is the efficiency of the state, for, in the theory of democracy, self-realization in and through vocation for the individual is of equal or greater significance than his efficiency in the production of a margin of utilities for social consumption, whether of commodity or of service. The achievement of efficiency as a productive unit in the social organization is not, as it is under the doctrine of state socialism, the prime objective of selection for economic capacity. Thus, in a country like ours, any means to such determination must place election before selection. Indeed, choice in itself is an essential element in any equalization of opportunities. All that a democratic society can do is to provide for the prospective citizen the basis in experience necessary to make his choice genuine or intelligent.
>
> In the light of the foregoing thesis the proposition which has been put forward by many and earnest advocates, that the function of formal education in the rural community is to bond the country boy and the country girl to the soil, is unacceptable. The fact that a child is born on the farm is not at all an indication that he can in largest measure realize his birthright and serve his fellows by remaining on the farm. Any system of education designed to limit resources of self-discovery is restrictive both of the rights of the child and of the progress of society. On the contrary, it is a prime obligation of democratic society to provide for prospective citizens who happen to be born in the country every possible avenue of self-discovery that may lead to the central life activity of the normal citizen—his vocation.
>
> So far as the basis of experience which society can provide for intelligent choice of life pursuits on the part of prospective citizens is concerned, the following postulates are offered:
>
> 1. It must result in the understanding both of essential requirements and of significant opportunities in (*a*) the vocation itself, (*b*) the life implied in pursuit of the vocation, (*c*) the preparation implied in acceptance of the vocation.
>
> 2. It must take one, two, or all of the following forms, whether under formal or informal auspices: (*a*) Participation, (*b*) observation, (*c*) vicarious information. * * *
>
> As to the agency that shall undertake the teaching of country boys and country girls what is necessary and possible to intelligent choice of vocation, the common opinion of educators is accepted. No rehearsal of reasons is here needed. The agency is the public school in that level given to diversified teaching for the sake of "finding"—the junior high school level. Assuming that an organization involving all of the essential functions of the junior high school will ultimately be made workable in the rural districts, I venture to suggest a plan for the development of the prevocational function. The plan centers in the provision of one or two teachers for each rural community, employed for the full year rather than for the school year, equipped with the means of transporting small groups of

[4] T. H. Eaton. Sch. Rev., Mar., 1923, pp. 191–192; 202–203.

pupils from place to place, and devoting their whole time, working out from the school, to teaching pupils the essentials of intelligent choice of vocation.

Such teachers must, of course, possess a greater range of qualifications than is now required of the teacher in either the junior or the senior high school. Probably few persons are now qualified for such a task. But qualified persons can be prepared if the demand be made. The educational service to be rendered is second in significance only to that of the elementary school. The demand will come. Qualified teachers will be prepared to serve and will be given the chance to serve, whether under such a plan as suggested or under another and better. Until that is done "equality of opportunity," to which rural boys and girls are entitled the country over, will remain as it is—equal lack of opportunity.

E. E. Windes,[5] in discussing the problem of agriculture for the seventh and eighth grades in the rural schools of Currituck County, N. C., makes the general statement and the formulation of objectives that follow:

The life problems of the modern farmer are extremely diversified. He deals directly with the primary and derived energy of nature, with the tools which transform this primary and derived energy into productive work, with a variety of mineral elements and their compounds, with plant life throughout the plant series, with animal life throughout the animal series, with man as an individual, as organized groups of workers, as a consuming market, and as a controlling whole.

His greatest surety for success lies in training in methods of attack and materials available for the solution of problems in all these fields. A partial success may attend his mastery of the means of solving problems of one group of relationships, but failure to take into account problems of another group may not only rob him of returns for his effort in one direction but may actually lead to his undoing. He may become very proficient in the use of labor-saving tools and materially reduce the labor cost of producing crops, only to face economic ruin because of the appearance of a crop pest with which he can not deal, or because his increased production has overstocked the market so that consumers will not pay even the lowered cost of producing the article. Again, he may become very efficient as a producer of a given commodity, only to find that as he increases his output and lowers his costs of production other organized groups between him and the consuming public absorb the profits through higher wages, higher transportation rates, higher returns for capital, or by the appearance of additional middle groups through which the commodity must pass.

The course of study here outlined is frankly prevocational. Its major objectives are:

1. To introduce problems involving the essential life relations of farmers as dealing with nature, with the world of workers, with the general public, and as producers of marketable commodities, to the end that the pupil may get such a survey of farming as an occupation and a mode of living that he may judge fairly whether he desires to enter upon the occupation, and in case of entrance upon farming as an occupation to furnish a basis for an understanding of these relationships.

2. To introduce a comparative study of occupations to the end that an intelligent choice of an occupation and of the curriculum best fitting for that occupation be made.

3. To provide through construction and production projects such a sampling of jobs met with in farming of various types that the pupil may judge his fitness

[5] Types of Courses of Study in Agriculture, Rural School Leaflet, No. 26, pp. 1-2.

for the types of tasks necessarily met with in farming of specific types. Since farming offers such diversity of tasks and requisite skills, these samplings are further valuable as indicating ability in nonagricultural occupations of a considerable variety.

4. To provide training in the method of attack in solving problems and knowledge of sources of material for the study and solution of problems in agriculture.

5. To motivate other subjects of the agricultural and general curricula through showing their relation to success in agriculture.

6. To furnish adequate guidance in the selection of vocational projects of the high school proper.

7. To acquaint the pupil with the various agencies of the county, State, and Nation dealing with agriculture, the kind of service these agencies render, and to develop the habit of using these agencies.

BOYS' AND GIRLS' CLUB WORK

Any consideration of the teaching of agriculture in the elementary school in which the boys' and girls' club work was ignored would be incomplete. This work has not generally been closely articulated with the work of the elementary school, but for the most part the members of the clubs are pupils in the elementary schools. Data are not available for the entire country to show the extent to which club members are pupils in the elementary schools, but an intensive study recently made for New York State furnishes the following data:[6]

Age distribution of 68,181 junior extensi... workers in New York State, 1920–1924

Age group (years)	1920	1921	1922	1923	1924	1920–1924
6	74	79	75	16	27	271
7	170	226	164	100	81	741
8	471	619	566	260	299	2,215
9	796	1,179	963	745	858	4,541
10	1,319	1,802	1,679	1,867	2,086	8,753
11	1,764	2,155	2,011	2,211	2,458	10,599
12	2,068	2,769	2,465	2,571	2,715	12,588
13	1,870	2,383	2,279	2,426	2,516	11,474
14	1,482	1,809	1,737	1,952	1,911	8,891
15	819	991	1,041	1,071	1,104	5,026
16	287	352	344	461	411	1,856
17	148	142	139	192	172	793
18	56	53	46	71	72	298
19	25	20	12	26	34	117
20	3	6	3	4	2	18
Total	11,352	14,586	13,524	13,973	14,746	68,181
Median	12.5	12.4	12.5	12.7	12.6	12.6

It is true that in New York State a distinct effort has been made to keep the junior extension—boys' and girls' club work—on an educational basis and wherever practicable closely identified with the educational system. This program may be a selective factor resulting in the enrollment of somewhat younger workers than would otherwise be obtained. However, these figures correspond fairly closely with similar data available from other sources, and a distinct

[6] From an unpublished study by P. R. Young.

drive has been made in New York to procure the enrollment of older boys and girls, without marked influence on the ages of those enrolling. As a group the members of boys' and girls' clubs are largely in the elementary school.

The latest available report of the office of cooperative extension work [7] contains the following data on the size of organization dealing with boys' and girls' club work:

Leaders of boys' and girls' club work

	1922	1923
State leaders	45	42
Assistant State leaders	78	60
County leaders	205	153

The same source is authority for the statement that in 1923 there were 28,200 clubs, with a membership of 600,957 boys and girls. In addition to the work done by the boys' and girls' club leaders, the 3,500 agents for county agricultural and home demonstration work contribute more or less to the club work.

As this organization deals largely with the teaching of agriculture and home economics to children of the elementary-school period, it is of interest to note its objectives for these activities. The quotations which follow are taken from the most recent reports of the chief of the office of cooperative extension work.[8]

For the past three or four years the effort has been made to make the club activities conform entirely to the farm and farm-home needs of the various communities and counties. The past year's work has brought this objective within reach as a complete attainment. * * * Greater volume, or number of demonstrators per community, has been encouraged in order to more quickly establish new practices. As a result, boys' and girls' club work more successfully and more widely demonstrates better practices than heretofore.

That most improved phases of farm and home practices can be demonstrated by boys and girls is quite generally recognized. In fact, extension workers are realizing that many farm and home practices can be best demonstrated through boys and girls, and the latter will no doubt play an increasingly important part in the prosecution of the extension program in the future.

A large number of counties undertook for the first time during the past year to make provisions for boys' and girls' club work in the community and county extension programs of work as a means of dealing with particular programs. These community programs of work were built on the basis of problems found through intensive study, careful observation, and use of all available statistics.

These statements point clearly to the predominance of the improvement of farming as the objective.

[7] Report of the Director of the States Relations Service, 1923.
[8] Reports of the Director of the States Relations Service, 1922 and 1923.

AGRICULTURE IN SECONDARY SCHOOLS

Instruction in vocational agriculture as a part of the program of secondary education is being developed in departments of comprehensive high schools and also in special schools of agriculture. The reports of the Federal Board for Vocational Education are the sources of the most reliable data regarding the work in vocational agriculture of less than college grade. These reports do not separate returns relating to the special schools of agriculture and the high schools, so that it is not possible to present data regarding the relative growth of the two types. It is evident to the observer, however, that in very recent years there has been relatively a decline in the rate of establishment of separate schools as contrasted with 10 to 20 years ago. Recent years have been also the period of the rapid development of the high-school department of vocational agriculture.

The following table taken from the 1924 report (p. 109) of the Federal Board for Vocational Education shows the total expenditures for vocational education in agriculture from 1918 to 1924, so far as the work came under the provisions of the Federal vocational act.

Federal, State, and local expenditures for vocational agricultural education, 1918 to 1924

Year	Total expenditures	From Federal sources	From State and local sources		
			Total	State	Local
United States:					
1924	$5,251,143.76	$1,896,406.29	$3,354,737.47	$1,204,643.73	$2,150,093.74
1923	4,647,042.04	1,669,698.75	2,977,343.29	1,108,461.22	1,868,882.07
1922	4,058,440.36	1,435,475.22	2,622,965.14	1,039,487.89	1,583,477.25
1921	3,393,088.21	1,192,131.17	2,200,957.04	968,674.16	1,232,282.88
1920	2,437,286.06	889,886.29	1,547,399.77	678,824.43	868,575.34
1919	1,413,938.49	528,679.13	885,259.36	399,982.80	485,276.56
1918	739,933.27	273,282.08	466,651.19	220,713.98	245,937.21

This report is also the source of the following data regarding teachers employed and pupils enrolled:

Teachers and pupils in schools for vocational agriculture

Year	Teachers	Pupils
1918	995	15,453
1919	1,201	19,933
1920	1,570	31,301
1921	2,071	43,352
1922	2,290	60,236
1923	3,012	71,298
1924	3,454	85,984

These two tables show a steady and consistent growth in expenditures from all sources and in enrollment of pupils. This is of special interest in view of the farming depression of the past few years.

The enrollment in vocational agriculture for the various types of work is shown by the following figures from the 1924 report of the Federal Board for Vocational Education:

Enrollment in vocational agriculture by types of work

Year	Evening	Part time	All day	Short unit
1918			15,453	
1919			19,933	
1920			31,301	
1921	1,139	1,445	40,763	
1922	1,333	5,942	52,961	
1923	9,319	2,090	57,978	1,911
1924	15,227	2,143	65,358	3,256

The enrollment in day schools is primarily in high-school departments of agriculture. From the data given it is apparent that there has been a tendency in the past few years to expand the types of work offered so as to reach other groups of pupils.

Not all the farm boys who have dropped out of school will be interested in preparing for farming. Thousands of them will, however, and they will have little or no opportunity to make a study of the scientific bases of their chosen vocation, before they become adults, unless provisions are made for them in connection with the State programs for vocational education in agriculture. In the past the instruction in vocational agriculture has been confined too exclusively to the high schools. During the past two years the extension of the work beyond the high-school group has relatively gone too largely to the adult farmers. To reach these youths who are just entering upon farming careers is difficult, much more difficult than to attempt to work with adult farmers. That it is not impossible is clearly shown by the results in several States where they are being reached in large numbers.

AGRICULTURE IN COLLEGIATE INSTITUTIONS

In many of the colleges of agriculture there has been a decline in recent years in the enrollment in agriculture. In the land-grant colleges, statistics show the following enrollments in agriculture for the white institutions:

1902-3	2,471	1910-11	8,859	1918-19	10,345
1903-4	2,331	1911-12	10,701	1919-20	15,370
1904-5	2,473	1912-13	12,462	1920-21	15,434
1905-6	2,963	1913-14	14,844	1921-22	13,477
1906-7	3,930	1914-15	17,169	1922-23	14,615
1907-8	4,566	1915-16	16,874	1923-24	13,685
1908-9	5,873	1916-17	16,409		
1909-10	7,229	1917-18	13,445		

This change has aroused the interest of the teaching and administrative staffs of the agricultural colleges. Discussions of the cause are necessarily more or less theoretical, but it seems probable that an

important factor is the reaction that followed the marked expansion in enrollment 10 to 15 years ago. At that time large numbers of students entered colleges of agriculture with erroneous ideas of what these colleges could do for them. The possibilities of the college of agriculture as now organized and administered are becoming better understood. The problem remains whether radical changes in the curricula might be made to advantage. It is suggested that an exhaustive study of collegiate instruction in agriculture should be made by a sympathetic but unbiased commission, in order to secure reliable data regarding the needs for modifications in the work or these institutions. The land-grant colleges have had their work in agriculture well under way for about a generation. It seems, therefore, that such a study might furnish data for the formulation of more satisfactory objectives than the present ones.

Evidences of interest in a more scientific determination of objectives in this field appear in the following resolution that was adopted by the subsection on resident teaching in agriculture at the 1923 meeting of the Association of Land-Grant Colleges:

1. *Resolved*, That this association adopt the proposals put forward in the paper by Dean Vivian for a comprehensive study of the objectives in college instruction in agriculture, and an analysis of the determined objectives in terms of their requirements and skills, as a basis for sound curriculum building in collegiate agricultural instruction.

Resolved further, That the association authorize its president to appoint a committee, at least one of whose members is experienced in the technique of job analysis, which shall present to the association at its next annual meeting a workable plan for such a study and providing for the participation of the several colleges in its prosecution.

2. *Resolved*, That if the executive body concur, the executive committee be directed to investigate the possibility of interesting one or more institutions in the matter of specialized research on methods of college instruction, with power to invite such institutions to designate one or more members of their staff to undertake such research as a basis for college instruction in this field.

Further objective evidences of interest in the improvement of collegiate instruction in agriculture are the following:

1. The considerable portion of the program of the agricultural section of the Association of Land-Grant Colleges that in the past few years has been devoted to the discussion of ways and means of improving instruction. This has been especially marked in the last two or three meetings.

2. The frequency in colleges of agriculture with which authorities in educational method are asked to conduct conferences dealing with methods of teaching. Some institutions procure speakers from outside, and others draw from their own resources.

3. Akin to the preceding but somewhat more elaborate in character are courses designed for staff members. Enrollments have been

very satisfactory in two such courses offered in the New York State College of Agriculture. These courses are as follows:

22. *Psychology for Students of Education.* First term. Credit, four hours. Section 2, for members of the college staff. Lectures, M. W. F., 11–12.30.
23. *Problems of Agricultural College Teaching.* Second term. Prerequisite course 22. Lectures, T. Th., 11–12.30.

For the academic year 1925–26 a seminar meeting once a week will be available to members of the staff who have had the two courses described.

At the convention of the Association of Land-Grant Colleges in 1924, a special committee on objectives in college instruction in agriculture recommended that:

1. A permanent central committee of this association charged with the study of the desirable reorganization of the curricula of the agricultural colleges be appointed. The committee should consist of three deans of colleges of agriculture, two men acquainted with the technique of job analysis and curriculum construction, a representative of the Federal Board for Vocational Education, and a representative of the Federal Department of Agriculture.
2. The committee should meet for at least two three-day sessions during the year. * * *
3. The field of agricultural education should be expolored and a study made of the major aims and objectives of collegiate training in agriculture. * * *

In the confident opinion that such a study through a period of years will prove one of the most valuable pieces of work every undertaken by this association, your special committee urges the adoption of the reccommendations herein contained.

O