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VOCATIONAL AGRICULTURAL CURRICULUM

STUDY IN UTAH COUNTY

by

Loren J. Phillips

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Agricultural Education

Approved:

UTAH STATE UNIVERSITY
Logan, Utah

1970

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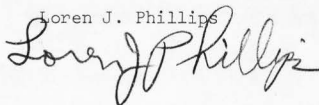
Loren J. Phillips


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ABSTRACT

Vocational Agricultural Curriculum Study

In Utah County

by

Loren J. Phillips, Master of Science

Utah State University, 1970

Major Professor: Dr. Von Jarrett
Department: Agricultural Education

A questionnaire containing 69 curriculum areas for a vocational agricultural program in Utah County, Utah, and a proposed rating scale was mailed to 720 students who had graduated in vocational agriculture from eight high schools; to 14 agricultural teachers, and to 22 secondary school administrators and supervisors from Utah County; and to 28 other agricultural teachers selected at random in the state. Each person was asked to evaluate each curriculum area according to four suggested rating values: no value, has value, recommended, or essential.

The rating from each respondent was tabulated for each curriculum area by total points and by numerical rating sequence.

All respondents approved all curriculum areas as having value, but they differed as to degree of acceptability. Four areas received a rating of (1-12) by all respondents. Eleven others were rated high by two or more groups of respondents. Forty-three areas received total point ratings between 13-56. Eleven curriculum areas were rated low (57-69) in acceptability by three or four groups of respondents.

It is recommended that graduates from vocational agricultural programs, vocational agricultural teachers, administrators, and

supervisors in secondary schools be involved in curriculum planning to correlate the agricultural program with interests of students and the needs of the communities and that data, such as revealed in this study, be considered in vocational agriculture curriculum planning.

(94 pages)

INTRODUCTION

After the passage of the 1963 Vocational Act, there is much in literature that indicates need to evaluate curriculum content in the area of vocational agriculture at the local level. It has been observed that the areas of ornamental horticulture, forestry and range management, off-farm agricultural occupations, oil hydraulics, and business agriculture should be included in curriculum content.

Curriculum development and effectiveness of agricultural education programs in secondary schools, according to educators and supervisors in agricultural education, is the responsibility of the teacher of vocational agriculture in the local area. In today's maze of change, extra precautions should be taken to insure that quantity and scope of programs do not over-shadow quality and effectiveness.

Poor quality programs in agricultural education are too costly in human effort, expenditure, and economic production. High quality programs will require that major attention be given to the selection, preparation, and application of vocational agriculture curriculum.

The results obtained from this study should be useful as a guide to help prepare new teachers and to continue professional development of teachers in the field toward maintaining quality and effectiveness in vocational agriculture.

The purpose of this study was to obtain an evaluation of 69 curriculum areas in vocational agriculture and to make this information available for consideration in the organizing of a curriculum for vocational agriculture in Utah County, Utah.

The 69 curriculum areas were developed from existing curriculum course outlines, in-service training courses, experiences as a farmer, advisor to the FFA for fifteen years, literature cited, and from persons interested in the study.

Utah County was used for this study because the author felt a need for a study designed to help advise teachers of vocational agriculture in the secondary schools of Utah County pertaining to the development of a curriculum in vocational agriculture for the geographical location.

The evaluated information for this study was obtained from former graduates who had studied agriculture for two or more years in a Utah County high school.

The decision to use graduated students from the school years 1958 through 1963 in this study was based on the assumption that they would be in the labor market and would be able to evaluate the 69 curriculum areas on the basis of needs in the labor market as well as personal satisfaction.

Secondary school personnel were used in this study because of the responsibilities being placed upon these groups in the secondary schools to administer the curriculum.

Non-county vocational agriculture teachers were queried in hopes of making a comparison between curriculum needs of Utah County and those of other areas in Utah.

The judgments of the queried groups merit consideration as guides in curriculum building.

Statement of problem

The problem of this study was to determine what curriculum areas should be recommended for a program of vocational agriculture, oriented for Utah County.

Sources used for the study were current literature and the opinions of selected groups queried by questionnaires.

Delimitation

No attempt was made to organize a curriculum or to recommend specific courses or course content in a vocational agricultural program.

Those included in the study were former high school graduates who had studied vocational agriculture, teachers of vocational agriculture, principals, superintendents, secondary school supervisors, and vocational counselors from Utah County, and non-county vocational agriculture teachers.

Persons in the armed services, on Latter-day Saints missions, and those whose addresses were unknown were not used in the study.

Former students during the school years 1958-1963 were the only students included in the study.

No attempt was made to ascertain post-high school experiences of the former students.

Definition of terms

As used in this study, the meaning attached to specific terms will be as follows:

Agricultural occupations are those occupations in which the workers engage in the production, distributions, servicing, or

processing of plant or animal products and includes agricultural mechanics.

Non-farm agricultural occupations are those occupations in which agricultural products are processed or distributed or in which services are rendered.

FFA is the abbreviation for the national youth organization known as Future Farmers of America.

The 69 curriculum areas were compiled from text books, courses of study, vocational agriculture workshops, experiences as FFA supervisor, as a farmer, and from observation of non-farm agricultural industries in Utah County.

Major subject groups are the grouping of 69 curriculum areas.

Total point rating equaled the total assigned value, multiplied by the number of responses, and added together.

Rank importance designates the listing in numerical sequence (1-69).

REVIEW OF LITERATURE

Observations and recommendations
concerning agricultural education

Prior to the Vocational Act of 1963, very little information relating to the curriculum content was published. Since then, studies have been made proposing the curriculum content of agricultural science courses.

According to Arnold (1965), the 1963 Vocational Act specifies that existing programs of vocational agriculture are to be extended and improved. It requires that local vocational agricultural programs must continue to provide instruction that will meet the needs of those who are preparing for the farm and those engaged in farming.

According to Arnold, application of science and mechanized equipment have transformed production agriculture. Operational skills and managerial ability are now essential requisites for success in farming. Efficiency of output and productivity of farm units continue to improve. Increased urbanization has resulted in many of the traditional agricultural activities being moved off the farm. New agricultural occupations have emerged in the distribution, processing, and service areas. More people are employed in other phases of agriculture than in farming itself.

Tenny (1965) groups students requiring knowledge and skills in agricultural subjects into four areas: production agriculture, non-farm agricultural occupations, technical training for specific agricultural occupations, and education beyond high school preparatory to entering into agricultural professions.

Scarborough (1967) contends we need a change-oriented person in today's teacher of agriculture if he is to meet the needs of people in the community. We need educators more than agriculturalists, educators more than agricultural workers. These educators should teach agricultural principles rather than agricultural practices, should apply latest research rather than latest agricultural recommendations, should be specialists in teaching, problem-solvers rather than answer men.

Scarborough believes also that there is a need to discard the notions that everyone must agree on everything, that emphasis must be on local community only, or for farming only, that vocational agriculture is not for persons going to college, and that the teacher of vocational agriculture himself is not through going to school.

He concludes that keeping instructional programs attuned to rapid social and technical changes is proving to be exceedingly difficult to do, but that nothing is more important.

Hensel (1965) describes some trends in curriculum and in methodology. He developed an experimental curriculum in agriculture of higher quality and on a semester basis, covering more subject areas. A student could specialize in areas he desired. This program attracted more non-farm students. Emphasis was placed on economics, marketing, and basic science. This program proved to be very successful.

Slater (1966) suggests that freshmen and sophomore students be given background material in instruction of technical agriculture and supervised practice programs. Juniors and seniors would spend more time studying non-farm agricultural occupations to develop work

availabilities with agricultural related businesses.

Blackbourn (1964) contends we need to develop new objectives in the science of plant and animal life as it relates to agriculture, to develop interest in agriculture and rural living, to develop information relative to character of opportunities in the qualifications necessary for occupations in the field of agriculture, to provide education in production of food and fiber and develop understanding of processing, transportation, marketing, and purchasing of goods.

Of the many approaches to update the curriculum in vocational agriculture, Downs (1967) lists the following areas of improvement: (1) list courses by subject matter and not number system, (2) conduct semester courses, (3) organize greater course offering, (4) formulate new course titles. He urges the teaching of basic principles, cooperative programs in agricultural business, and ornamental horticulture at the high school level.

Bjoraker and Matteson (1967) indicated that, by 1977, the number of employees needed for non-farm agriculture would increase 58 percent. They listed the following non-farm agricultural areas: public relations, business management, machinery sales and service, agricultural supplies, conservation, forestry, and ornamental horticulture.

Stevenson (1966) reported that by 1971 the state of Oklahoma would have an increase of 34 percent employment in business related to agriculture. The greatest needs appeared to be in ornamental horticulture, agricultural machinery, and agricultural supplies.

In the state of New York, a study conducted by Cushman (1966) revealed the need of off-farm occupations in the areas of business, services, wholesaling, recreation, specialized production, processing,

manufacturing, agricultural mechanics, plant science, animal science, and forestry.

Byron and Parsons (1967) conducted a study in Massachusetts to determine competencies desired by greenhouse managers. The following competencies were listed: knowledge of species of plants, watering procedures, pest control, types of fertilizers and their use, types of soils, potting and planting, propagation, chemicals and soil testing, and management problems.

Sidney (1968) indicated that technical curriculum should not be established or maintained only to satisfy the interests in certain pressure groups or faculty members who have vested interests in certain phases of education. The curriculum must be based on the needs of the geographical areas.

Recommendations on methods of curriculum development

Sidney (1968) indicates curriculum development must include an advisory committee, although the actual planning of the curriculum and course content is the responsibility of the professional teacher. An advisory committee should include a farmer, implement dealer, nursery man, banker, and guidance counselor.

According to Warmbrod (1969) two basic questions on development of curriculum are often overlooked. The first of these questions is "what is the purpose of agricultural education?" The second question is "what is the nature of the learning process?"

Warmbrod (1969) believes that a long standing principle of curriculum development in high school programs of vocational agriculture is that educational problems should be based on and derived from

the needs, problems, and aspirations of individuals in local communities. Such an orientation to the selection of subject matter implies rather clearly that the central focus of education has to do with people, their needs, aspirations, and development rather than subject matter.

Over the years vocational agriculture's philosophy seems to have rightfully placed a high priority on the development of people. Be sure that this principle is not overlooked and place increasing emphases on state and national needs as a criterion for determining curriculum content.

Peterson (1969) believes that courses should be taught on principles that are considered most important to agriculture. Each course should be so designed that students discover the underlying principles. This discovery process is accomplished by having students determine why a situation or action is occurring as they observe and perform activities such as an experiment or demonstration.

The principles approach provides vocational agriculture an opportunity to keep pace with curriculum reform and explore agricultural subject matter in depth. The new approach provides for the use of both discovery and problem-solving learning and an opportunity to present both the why and how of agricultural subject matter to students of vocational agriculture. (Peterson, 1969, p. 241)

Peterson concludes that an overall analysis of student achievement should reveal significantly greater achievement for students taught agriculture based on principles.

Legislative enactments

The Vocational Education Act of 1963 amends the previous legislation to provide that any amounts of money allocated for agriculture

may be used for vocational education in any occupation involving knowledge and skills in agricultural subjects, whether or not such occupation involves work on the farm or of the farm home.

The 1968 Vocational Education Act amends and extends the Vocational Act of 1963 and repeals all prior legislation with the exception of some provisions of the Smith-Hughes Act.

The act authorizes states to maintain, extend, and improve existing programs of vocational education, to develop new programs, and provide part-time employment for youths who need the earnings to continue their vocational training on a full-time basis.

Federal funds may be used for the following purposes:

Vocational educational programs that are designed for high school students to prepare them for advanced or highly skilled posts in secondary vocational and technical education.

Vocational education for persons who have completed or dropped out of school are available for study in preparation for their entering the labor market. Not less than 15 percent of the states total allotment must be used for this purpose.

Vocational education for persons who have entered the labor market and who need further training or retraining.

Vocational education for handicapped persons who cannot succeed in the regular vocational program. At least 10 percent of state allotment is to be used for this group.

Recommendations concerning agricultural education according to literature cited

There is a definite need for innovations to be made in the vocational agricultural curriculum at the high school level if we are to

keep pace with change. Funds are available for use in this area under the Vocational Act of 1963 and the Amended Act of 1968.

There is a definite need for more highly trained, efficient agricultural workers in the future.

Hoover (1964) suggests some tentative objectives for vocational education in agriculture: (1) to provide education for those entering or currently in farming, (2) to provide education for those entering diversified agricultural occupations, and (3) to provide basic education for those who plan careers in fields of agriculture requiring college education.

Summary of literature

The literature reviewed discusses primarily what should comprise courses in Vocational Education Agriculture and procedures in curriculum building. There is agreement that agricultural programs should be expanded and improved to satisfy the needs of those preparing for farming and related industries. Adjustments must be made to mechanized farming and to new industries arising from increased urbanization. Teachers should be agriculturists and educators--progressive leaders--more than agricultural workers. They should be problem solvers, not just answer men.

There is need to evaluate objectives underlying the program, to develop interest in agriculture and rural living so as to provide food and fiber. There is need to develop and foster understanding of processing, marketing, and other non-farm agricultural occupations.

Students in high school should have the opportunity to gain broad views of agriculture and basic skills based on needs of geographical

areas.

Technical curriculum should not be developed or maintained to satisfy the interests of certain pressure groups or of faculty members who have vested interests in certain phases of education. (Sidney, 1968, p. 174)

Vocational agriculture in high schools should not be designed to give the training available in post high school programs and technical institutions.

Hoover (1964), Arnold (1966), and Slater (1966) believe programs should be adjusted to changing needs and local conditions.

Alumni of vocational agriculture programs, educators, business leaders, farmers, researchers, and specialists should be involved in advisory capacity toward building a program. Their opinions and experiences should be sought. Actual making of the curriculum and selection of course content is the responsibility of professional teachers.

Slater (1966) believes that freshmen and sophomores should be given background materials of agriculture and supervised programs. Juniors and seniors should study non-farm agricultural programs and develop abilities and understanding involved in off-farm agricultural businesses.

METHODS OF PROCEDURE

Survey methods

Former graduating students from the eight high schools in Utah County were used in this survey. The schools included were American Fork, Orem, Lehi, Payson, Pleasant Grove, Provo, Spanish Fork and Springville. The students selected to participate were those who had taken two or more years of vocational agriculture and had graduated from their respective high schools in the school years of 1958-1963.

Some had graduated from high school five years before and others as long as eleven years before this study was made. Some were still in Utah County, others were not. Post-high school vocational experiences were not ascertained. Thus the accumulated judgment of this group would be Utah County oriented, but it also represented wider geographic areas.

Fifteen from each year from each of the eight schools were selected for the survey. This sampling provided a total of 720 former students who are now in the labor market.

The names and addresses of these former students were obtained through the cooperation of the respective high schools. A letter explaining the purposes of the survey and a copy of the questionnaire were sent to each student.

A second follow-up letter was sent two weeks after the initial mailing requesting information from students not replying.

The questionnaire and an accompanying letter were mailed to 14 teachers of agriculture, 22 principals, superintendents, secondary

supervisors and vocational counselors involved in the county-wide program. Also a questionnaire was mailed to 28 vocational agricultural teachers in various sections of the state by random selection.

Information obtained from these groups was recorded on the form found in Appendix D.

Validation

Five persons including teachers of vocational agriculture, principals, and vocational counselors were used to refine the questionnaire. Former graduate students, 3 each from Payson, Spanish Fork, and Springville, were used to refine the questionnaire. From each town one student graduated each year from 1960 through 1962.

After tabulation of the pilot questionnaire, it was determined that the study was too broad. Changes were made and the questionnaire was finalized to its present content.

Questionnaire

The questionnaire developed by the author solicited information pertaining to 69 major divisions of a curriculum for vocational agriculture.

Procedure of analysis

A questionnaire listing 69 curriculum areas in vocational agriculture was organized into eight subject groups. Responses for each of the subject areas were tabulated according to queried groups.

Equating was done by formula. Total point rating equaled total assigned value multiplied by the number of responses added together.

Assigned value rating

No value	1 point
Has value	2 points
Recommended	3 points
Essential	4 points

The rank in importance was determined by listing in numerical sequence the total point value for each subject area in the 32 tables covering 69 topic areas.

The highest ranked subject area is listed as one, the lowest ranked subject is listed as 69.

RESULTS AND DISCUSSIONS

Presentation of responses
to questionnaires

Data for the study were collected from 400 graduates of the eight Utah County high schools (720 queried) for a total return of 55.5 percent. Questionnaires were returned from 170 by the postal service because of unknown persons and incorrect mailing addresses. Returns from available persons were 72.7 percent.

Eleven county vocational agricultural teachers presently teaching and three retired teachers were sent questionnaires. All responded.

There were 19 out of 22 county administrators and vocational personnel who responded. This represented 86.4 percent.

There were 25 out of 28 non-county vocational agriculture teachers who responded, giving a return of 89.3 percent.

Evaluation of vocational agricul-
tural course content

Comparative values of course content in vocational agriculture according to student evaluation are presented in Tables 1-8. An interpretation follows each table and is summarized after Table 8, pages 17-25.

Comparative values of course content in vocational agriculture according to Utah County vocational agricultural teachers evaluation are presented in Tables 9-16. An interpretation follows each table and is summarized after Table 16, pages 26-36.

Evaluation of vocational agricultural curriculum areas according to graduate students, Tables 1-8

Table 1. Importance of curriculum areas in livestock production according to 400 former agricultural students of Utah County

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Animal breeding and heredity	9	73	150	168	1277	22
Beef production and management	7	75	191	127	1238	29.5
Dairy production and management	10	101	169	120	1199	44.5
Feeding and nutrition	10	50	139	201	1331	10.5
Horse production and management	128	185	82	5	764	69
Poultry production and management	29	157	138	76	1061	62
Sanitation and disease control	10	46	131	213	1347	5
Sheep production and management	24	134	164	78	1096	58
Swine production and management	16	124	180	80	1124	53
Fur breeding production and management	124	172	62	42	822	68

Student rating of curriculum areas for livestock production showed a wide span of ranking in total point value. The areas that rated highly acceptable were: sanitation and disease control, and feed and nutrition. The areas receiving lower total point value ratings were: horse production and management, fur breeding production and management, poultry production and management.

Table 2. Importance of curriculum areas in crop production according to 400 former agricultural students of Utah County

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Classification of soils to production ability	5	52	134	209	1347	5
Farm and home beautification with plants	42	167	117	74	1023	63
Forestry and range management	16	123	149	112	1157	51
Ornamental horticulture (landscaping, green house care)	73	177	70	80	957	66
Principles of irrigation	5	64	161	170	1296	17
Production of forage crops (cereal crops, row crops)	11	87	179	123	1214	37
Production of fruits (orchards, berries)	16	104	179	101	1165	50
Soil and water conservation	1	40	139	220	1378	2
Use of agricultural chemicals (herbicides, insecticides)	4	45	151	200	1347	5
Use of chemical fertilizers	3	45	168	184	1333	9
Weed identification and control	3	76	164	157	1275	23

Student rating of curriculum areas of crop production shows a wide difference in total point rating. The four areas that received a highly acceptable rating were: soil and water conservation, use of agricultural chemicals, and classification of soils to production ability, use of commercial fertilizers. The two areas that received a low total point rating were: ornamental horticulture, farm and home beautification with plants.

Table 3. Importance of curriculum areas in business agriculture as rated by 400 former agricultural students of Utah County

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Agriculture processing and marketing	8	66	165	161	1279	21
Agricultural law (contracts, agreements, etc.)	8	80	122	190	1294	18
Agricultural sales, services, supplies	9	98	173	120	1204	40.5
Farm management (renting, buying, labor costs)	4	65	127	204	1331	10.5
Off-farm agricultural occupations	32	135	141	92	1093	59

Student rating of curriculum areas for business agriculture showed a wide difference in total point rating. The area of farm management received a highly acceptable rating and ranked 10.5. The area of off-farm agricultural occupations received a low total point value and ranked 59. The remaining subject areas were rated between these extremes.

Table 4. Importance of curriculum areas in agricultural mechanics as rated by 400 former agricultural students of Utah County

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Agricultural building construction	5	99	170	126	1217	35.5
Agricultural mechanics skills	2	67	143	188	1317	12
Cold metal operations	19	148	142	91	1105	56
Farm electricity	3	118	156	123	1199	44.5
Farm power, machinery repair	1	63	172	164	1299	16
Hot metal operations	20	154	134	92	1098	57
Oil hydraulics	20	161	139	80	1079	60
Metal lathe operation	68	177	96	59	946	67
Small engine operation and repair	7	82	194	117	1221	33
Sheet metal operations	51	172	120	57	983	65
Welding, elementary (arc-flat position)	5	39	143	213	1364	3
Welding, advanced (vertical, overhead, bronze, etc.)	15	101	150	134	1203	42
Farm drawing	41	184	117	58	992	64
Tractor tune-up and repair	5	66	161	168	1292	19
Paints and painting	25	159	132	84	1075	61

Student rating of curriculum areas for agricultural mechanics indicated two areas received a highly acceptable total point rating:

elementary welding, agricultural mechanics skills including tool sharpening and safety methods. Six areas received a low total point value: metal lathe operation, sheet metal operations, farm drawing, paints and painting, oil hydraulics, and hot metal operations.

Table 5. Importance of curriculum area in Future Farmers of America activities as rated by 400 former agricultural students of Utah County

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Chapter meetings	11	86	166	137	1229	31
Educational value	6	74	166	154	1268	24.5
FFA degree advancement	9	89	182	120	1213	38
Leadership development	6	51	140	203	1340	7
National FFA conventions	16	140	159	85	1113	55
Parliamentary procedure (conducting of meetings)	15	85	159	141	1226	32
Public speaking assignments	16	86	163	135	1217	35.5
Service on FFA committees	12	93	174	121	1204	40.5
State FFA conventions	13	108	169	110	1176	48
Recreational activities	15	100	185	100	1170	49

Student rating of curriculum areas for Future Farmers of America activities showed a wide difference in total point rating. The one area of leadership development ranked 7, a highly acceptable rating. No area in this section received a rank of less than 49.

Table 6. Importance of curriculum areas in supervised experience as rated by 400 former agricultural students of Utah County

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Conducting farm and home improvements	8	104	172	116	1196	46
Exhibiting at stock shows and fairs	7	74	188	131	1243	28
Maintaining agricultural farming projects	3	57	140	200	1337	8
Record keeping of farming projects	3	32	100	265	1427	1
Work experience in related agriculture	5	73	174	148	1265	26

Student rating of supervised activities showed two areas receiving a highly acceptable rating: record keeping of supervised farming project enterprises, and maintaining of agricultural farming projects. The other areas were rated as recommended.

Table 7. Importance of curriculum areas in Future Farmers of America judging team activities as rated by 400 former agricultural students of Utah County

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Agricultural mechanic skills and abilities	6	92	196	106	1202	43
Classifying soils and their production ability	6	74	190	130	1244	27
Meat judging and selecting cuts of meat	15	95	183	107	1182	47
Selection of dairy cattle	11	80	189	120	1218	34
Selection of dairy products (milk, cheese, ice cream, etc.)	28	117	166	89	1116	54
Selection and identification of plants, seeds, weeds	12	90	175	123	1209	39
Selection of livestock (beef, sheep, hogs)	10	40	187	163	1303	14
Selection of poultry and poultry products	20	109	178	93	1144	52

Student rating of curriculum areas of Future Farming judging team activities shows one area as highly acceptable: selection of livestock (beef, sheep, hogs). The other seven areas were rated as being recommended.

Table 8. Importance of curriculum areas as an aid in counseling as rated by 400 former agricultural students of Utah County

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Toward students going into farming as a full time vocation	20	83	87	210	1287	20
Toward students going into related agriculture	8	75	188	129	1238	29.5
Toward all students desiring agricultural knowledge	9	68	169	154	1268	24.5
Toward teaching of agricultural principles	8	67	141	184	1301	15
Toward teaching of agricultural practice	3	63	150	184	1315	13

Student rating of these curriculum areas showed a very close value relationship between teaching of agricultural principles and the teaching of agricultural practice. Student ratings also showed a close relationship between the area of directing students to farming as a vocation, to related agriculture, and toward desiring agricultural knowledge. All areas were rated as being recommended.

Evaluation of vocational agricultural curriculum areas according to vocational agricultural teachers of Utah County, Tables 9-16

Table 9. Importance of curriculum areas in livestock production as rated by 14 Utah County vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Animal breeding and heredity	0	0	5	9	51	15
Beef production and management	0	0	4	10	52	11
Dairy production and management	0	0	6	8	50	19
Feeding and nutrition	0	1	1	12	53	6
Horse production and management	1	10	2	1	31	66.5
Poultry production and management	0	7	6	1	36	62.5
Sanitation and disease control	0	0	3	11	53	6
Sheep production and management	0	0	7	7	49	26.5
Swine production and management	0	0	7	7	49	26.5
Fur breeding production and management	3	10	1	0	26	69

Rating curriculum areas of livestock production areas showed a wide difference of acceptance. Areas rating highly acceptable included feeding and nutrition, sanitation and disease control, beef production and management. The three areas that received a low rank were: horse production and management, poultry production and management, fur

breeding production and management. The remaining subject areas were rated between these extremes.

Table 10. Importance of curriculum areas in crop production as rated by 14 Utah County vocational agricultural teachers

	No value	Some value	Recommended	Essential	Total point value	Rank importance
Classification of soils to production ability	0	1	1	12	53	6
Farm and home beautification with plants	0	1	7	6	47	37.5
Forestry and range management	0	6	7	1	37	60.5
Ornamental horticulture (landscaping, greenhouse care)	0	9	4	1	34	64
Principles of irrigation	0	1	4	9	50	19
Production of forage crops (cereal crops, row crops)	0	0	4	10	52	11
Production of fruits (orchards, berries)	0	2	7	5	45	46
Soil and water conservation	0	0	3	11	53	6
Use of agricultural chemicals (herbicides, insecticides)	0	0	4	10	52	11
Use of commercial fertilizers	0	0	3	11	53	6
Weed identification and control	0	0	7	7	49	26.5

Rating of curriculum areas for crop production showed a wide difference in total point rating. The five areas that received a highly acceptable rating were: classifying of soils to production ability, production of forage crops, soil and water conservation, use of agricultural chemicals, use of commercial fertilizers. The two

areas that received a low rank were: ornamental horticulture, forestry and range management. Other subject areas were rated between these extremes.

Table 11. Importance of curriculum areas in business agriculture as rated by 14 Utah County vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Agricultural processing and marketing	0	1	9	4	45	46
Agricultural law (contracts, agreements, etc.)	0	1	5	8	49	26.5
Agricultural sales, services, supplies	0	2	8	4	44	52.5
Farm management (renting, buying, labor costs)	0	0	6	8	50	19
Off-farm agricultural occupations	0	1	9	4	45	46

All areas in business agriculture were rated as acceptable in a very close grouping. None received a high or a low total point rating.

Table 12. Importance of curriculum areas in agricultural mechanics as rated by 14 Utah County vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Agricultural building construction	0	0	7	7	49	26.5
Agricultural mechanics skills	0	0	0	14	56	1.5
Cold metal operations	0	3	7	4	43	55.5
Farm electricity	0	2	7	5	45	46
Farm power, machinery repair	0	0	6	8	50	19
Hot metal operations	0	6	6	2	38	59
Oil hydraulics	0	6	8	0	36	62.5
Metal lathe operation	2	9	2	1	30	68
Small engine operation and repair	0	0	8	6	48	33
Sheet metal operations	0	10	3	1	33	65
Welding, elementary (arc-flat position, elementary cutting)	0	0	0	14	56	1.5
Welding, advanced (vertical, overhead, bronze, etc.)	0	2	7	5	45	46
Farm drawing	0	5	9	0	37	60.5
Tractor tune-up and repair	0	1	6	7	48	33
Paints and painting	0	1	10	3	44	52.5

The rating by Utah County teachers of vocational agriculture in the areas of agricultural mechanics showed two areas receiving a highly acceptable rating: agricultural mechanics skills, elementary

welding with arc and acetylene cutting. The five areas that received a low total point rating were: farm drawing, sheet metal operations, metal lathe operations, oil hydraulics, and hot metal operations.

Table 13. Importance of curriculum areas in Future Farmers of America activities as rated by 14 Utah County vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Chapter meetings	0	0	2	12	54	3
Educational value	0	1	5	8	49	26.5
FFA degree advancement	0	0	5	9	51	15
Leadership development	0	1	2	11	52	11
National FFA conventions	0	4	4	6	44	52.5
Parliamentary procedure (conducting of meetings)	0	0	9	5	47	37.5
Public speaking assignments	0	2	7	5	45	46
Service on FFA committees	0	0	6	8	50	19
State FFA conventions	0	2	5	7	47	37.5
Recreational activities	0	1	9	4	45	46

Rating of curriculum areas in Future Farmer activities showed two areas as highly acceptable: chapter meetings for students, and leadership development.

Table 14. Importance of curriculum areas in supervised experience as rated by 14 Utah County vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Conducting farm and home improvements	0	0	4	10	52	11
Exhibiting at stock shows and fair	0	0	9	5	47	37.5
Maintaining agricultural farming projects	0	1	5	8	49	26.5
Record keeping of farming projects	0	0	5	9	51	15
Work experience in related agriculture	0	2	7	5	45	46

Rating in supervised experience showed one area as being highly acceptable: conducting farm and home improvements.

Table 15. Importance of curriculum areas in Future Farmers of America judging team activities as rated by 14 Utah County vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Agricultural mechanics skills and abilities	0	0	9	5	47	37.5
Classifying soils and their production ability	0	0	7	7	49	26.5
Meat judging and selecting cuts of meat	0	3	9	2	41	57
Selection of dairy cattle	0	1	10	3	44	52.5
Selection of dairy products (milk, cheese, ice cream, etc.)	2	7	5	0	31	66.5
Selection and identification of plants, seeds, weeds	0	2	9	3	43	55.5
Selection of livestock (beef, sheep, hogs)	0	0	7	7	49	26.5
Selection of poultry and poultry products	0	5	7	2	39	58

Importance of FFA judging activities as rated by Utah County vocational agricultural teachers showed no activity as being highly acceptable on the total point rating. Three areas received a low total point value rating: selection of dairy products, selection of poultry and poultry products, meat judging and selecting cuts of meat.

Table 16. Importance of curriculum areas as an aid in counseling as rated by 14 Utah County vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Toward students going into farming as a full-time vocation	0	2	6	6	46	41
Toward students going into related agriculture	0	1	7	6	47	37.5
Toward all students desiring agricultural knowledge	0	3	5	6	45	46
Toward teaching of agricultural principles	0	1	6	7	48	33
Toward teaching of agricultural practice	0	0	7	7	49	26.5

All areas as an aid to counseling were rated by Utah County agriculture teachers as being acceptable.

Comparative values of course content in vocational agriculture according to Utah County administrators are tabulated in Tables 17-24. An interpretation follows each table and is summarized after Table 24, pages 38-46.

Comparative values of course content in vocational agriculture according to non-county vocational agricultural teachers are tabulated in Tables 25-32. An interpretation follows each table and is summarized after Table 32, pages 47-55.

Evaluation of vocational agricultural
curriculum areas according to Utah
County secondary school administrators
and vocational personnel, Tables 17-
24

Table 17. Importance of curriculum areas in livestock production as rated by 19 Utah County secondary school personnel

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Animal breeding and heredity	0	1	10	8	64	26
Beef production and management	0	0	9	10	67	12.5
Dairy production and management	0	0	10	9	66	18.5
Feeding and nutrition	0	2	6	11	66	18.5
Horse production and management	1	10	7	1	46	68
Poultry production and management	0	5	12	2	54	62.5
Sanitation and disease control	0	0	10	9	66	18.5
Sheep production and management	0	2	13	4	59	49
Swine production and management	0	3	12	4	58	54
Fur breeding production and management	2	9	7	1	45	69

Curriculum area rating by Utah County secondary school personnel indicates one area of livestock production as being highly recommended: beef production and management. Three areas that received a low total point rating were: fur breeding production and management, horse production and management, and poultry production and management. Remaining subject areas rated acceptable.

Table 18. Importance of curriculum areas in crop production as rated by 19 Utah County secondary school personnel

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Classification of soils to production ability	0	2	6	11	66	18.5
Farm and home beautification with plants	0	1	11	7	63	31.5
Forestry and range management	0	7	10	2	52	64.5
Ornamental horticulture (landscaping, green house care)	0	3	12	4	58	54
Principles of irrigation	0	0	8	11	68	9
Production of forage crops (cereal crops, row crops)	0	1	13	4	61	43
Production of fruits (orchards berries)	0	2	10	7	62	38
Soil and water conservation	0	0	6	13	70	3
Use of agricultural chemicals (herbicides, insecticides)	0	0	7	12	69	6
Use of commercial fertilizers	0	0	8	11	68	9
Weed identification and control	0	2	6	11	66	18.5*

Areas related to crop production as rated by Utah County secondary school personnel indicated four areas as being highly recommended by the high total point rating: soil and water conservation, use of agricultural chemicals and commercial fertilizers, and principles of irrigation. The area of forestry and range management received a low total point rating.

Table 19. Importance of curriculum areas in business agriculture as rated by 19 Utah County secondary school personnel

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Agricultural processing and marketing	0	0	9	10	67	12.5
Agricultural law (contracts, agreements, etc.)	0	3	12	4	58	54
Agricultural sales, services, supplies	0	1	11	7	63	31.5
Farm management (renting, buying, labor costs)	0	0	7	12	69	6
Off-farm agricultural occupations	0	2	10	7	62	38

Curriculum areas in business agriculture as rated by Utah County secondary school personnel rated two areas as being highly recommended in total point rating: farm management, agriculture processing and marketing.

Table 20. Importance of curriculum areas in agricultural mechanics as rated by 19 Utah County secondary school personnel

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Agricultural building construction	0	4	7	8	61	43
Agricultural mechanics skills	0	0	13	6	63	31.5
Cold metal operations	0	1	15	3	59	49
Farm electricity	0	4	9	6	59	49
Farm power, machinery repair	0	1	6	12	68	9
Hot metal operations	0	7	8	4	54	62.5
Oil hydraulics	0	6	9	4	55	61
Metal lathe operation	0	10	9	0	47	67
Small engine operation and repair	0	0	13	6	63	31.5
Sheet metal operations	0	9	8	2	50	66
Welding, elementary (arc-flat position, elementary cutting)	0	0	9	10	67	12.5
Welding, advanced (vertical, overhead, bronze, etc.)	0	4	11	4	57	57.5
Farm drawing	0	7	10	2	52	64.5
Tractor tune-up and repair	0	3	11	5	59	49
Paints and painting	0	4	11	4	57	57.5

The rating of areas in agricultural mechanics, by Utah County secondary school personnel, indicated two areas as being highly recommended. The two areas included farm power and machinery repair, and

elementary welding and cutting. Seven areas that received low total point ratings were: sheet metal operations, farm drawing, metal lathe operation and repair, hot metal operations, oil hydraulics, advanced arc welding, paints and painting. The remaining content areas rated between the two extremes of acceptability.

Table 21. Importance of course content in Future Farmers of America activities as rated by 19 Utah County secondary school personnel

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Chapter meetings	0	0	5	14	71	1
Educational value	0	1	9	9	65	23.5
FFA degree advancement	0	1	8	10	66	18.5
Leadership development	0	0	6	13	70	3
National FFA conventions	0	5	8	6	58	54
Parliamentary procedure (conducting of meetings)	0	3	7	9	63	31.5
Public speaking assignments	0	1	11	7	63	31.5
Service on FFA committees	0	1	11	7	63	31.5
State FFA conventions	0	2	11	6	61	43
Recreational activities	0	4	9	6	59	49

Areas in future farmer activities as rated by Utah County secondary school personnel shows two areas as being highly recommended by high total point rating. They were chapter meetings and leadership development. All remaining activity areas were recommended.

Table 22. Importance of curriculum areas in supervised experience as rated by 19 Utah County secondary school personnel

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Conducting farm and home improvement	0	0	7	12	69	6
Exhibiting at stock shows and fairs	0	1	9	9	65	23.5
Maintaining agriculture farming projects	0	2	10	7	62	38
Record keeping of farming projects	0	0	6	13	70	3
Work experience in related agriculture	0	1	12	6	62	38

Curriculum areas pertaining to supervised activities as rated by Utah County secondary school personnel showed two areas as being highly recommended by high total point rating. They were keeping of supervised farming enterprise projects and conducting of farm and home improvements. All other supervised activities were rated as being recommended.

Table 23. Importance of curriculum areas in Future Farmers of America judging team activities as rated by 19 Utah County secondary school personnel

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Agricultural mechanics skills and abilities	0	2	12	5	60	46
Classifying soils and their production ability	0	2	8	9	64	26
Meat judging and selecting cuts of meat	0	2	10	7	62	38
Selection of dairy cattle	0	0	12	7	64	26
Selection of dairy products (milk, cheese, ice cream, etc.)	0	4	12	3	56	59.5
Selection and identification of plants, seeds, weeds	0	0	10	9	66	18.5
Selection of livestock (beef, sheep, hogs)	0	0	10	9	66	18.5
Selection of poultry and poultry products	0	1	13	5	61	43

Curriculum areas pertaining to FFA contest activity as rated by Utah County secondary school personnel does not indicate a single area as being highly acceptable. One area, selection of dairy products, received a low total point rating. The remaining curriculum areas were rated as being recommended.

Table 24. Importance of curriculum areas as an aid to counseling as rated by 19 Utah County secondary school personnel

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Toward students going into farming as a full-time vocation	2	4	6	7	56	59.5
Toward students going into related agriculture	0	2	5	12	67	12.5
Toward students desiring agricultural knowledge	0	3	12	4	58	54
Toward teaching of agricultural principles	0	1	11	7	63	31.5
Toward teaching of agricultural practice	0	2	11	6	61	43

Ratings offering counseling guidance as rated by Utah County secondary school personnel shows one area as highly recommended by a high total point rating: students going into related agricultural fields. One area received a low total point rating: students going into farming as a full time vocation. Three areas rated between the extremes of acceptability.

Evaluation of vocational agricultural curriculum areas according to 25 non-county vocational agricultural teachers, Tables 25-32

Table 25. Importance of curriculum areas in livestock production as rated by non-county vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Animal breeding and heredity	0	0	14	11	86	19
Beef production and management	0	1	13	11	85	21
Dairy production and management	0	3	12	10	82	29
Feeding and nutrition	0	2	9	14	87	13.5
Horse production and management	2	11	10	2	62	64
Poultry production and management	5	9	7	4	60	67.5
Sanitation and disease control	0	1	9	15	89	7.5
Sheep production and management	0	1	16	8	82	29
Swine production and management	0	1	18	6	80	37
Fur breeding production and management	7	14	3	1	48	69

Curriculum areas rated by non-county agricultural teachers showed two areas in livestock production as highly recommended. The two areas were: sanitation and disease control, and animal feeding and nutrition. Three areas that received a low total point rating were: fur breeding production and management, poultry production and management, and horse production and management.

Table 26. Importance of curriculum areas in crop production as rated by 25 non-county vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Classification of soils to production ability	0	1	15	9	83	25
Farm and home beautification with plants	0	7	12	6	74	53.5
Forestry and range management	0	12	10	3	66	60.5
Ornamental horticulture (landscaping, green house care)	0	8	13	4	71	57
Principles of irrigation	0	0	16	9	84	22.5
Production of forate crops (cereal crops, row crops)	0	3	12	10	82	29
Production of fruits (orchards, berries)	3	6	14	2	65	62
Soil and water conservation	0	2	13	10	83	25
Use of agricultural chemicals (herbicides, insecticides)	0	1	11	13	87	13.5
Use of commercial fertilizers	0	1	11	13	87	13.5
Weed identification and control	0	1	15	9	83	25

Curriculum areas rated by non-county agricultural teachers in the area of crop production showed two areas as being highly recommended. The two areas were: use of agricultural chemicals, and use of commercial fertilizers. Three areas that received a low total point rating were: production of fruits, forestry and range management, and ornamental horticulture. The remaining six areas of crop production rated between the two extremes of acceptability.

Table 27. Importance of curriculum areas in business agriculture as rated by 25 non-county vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Agricultural processing and marketing	0	7	10	8	76	48
Agricultural law (contracts, agreements, etc.)	1	6	11	7	74	53.5
Agricultural sales, services, supplies	0	3	17	5	77	45.5
Farm management (renting, buying, labor costs)	0	2	16	7	80	37
Off-farm agricultural occupations	0	4	10	11	82	29

Areas in business agriculture as rated by non-county agricultural teachers did not indicate a single area of being highly acceptable, but all areas were rated as being acceptable.

Table 28. Importance of curriculum areas in agricultural mechanics as rated by 25 non-county vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Agricultural building construction	0	7	11	7	75	50.5
Agricultural mechanics skills	0	4	6	15	86	19
Cold metal operations	2	7	14	2	66	60.5
Farm electricity	0	4	15	6	77	45.5
Farm power, machinery repair	0	1	9	15	89	7.5
Hot metal operations	0	9	12	4	70	58.5
Oil hydraulics	1	9	9	6	70	58.5
Metal lathe operation	2	12	10	1	60	67.5
Small engine operation and repair	1	2	12	10	81	33
Sheet metal operations	2	11	11	1	61	65.5
Welding, elementary (arc, flat position, elementary cutting)	0	0	8	17	92	3.5
Welding, advanced (vertical, overhead, bronze, etc.)	0	2	15	8	81	33
Farm drawing	0	4	16	5	76	48
Tractor tune-up and repair	0	0	13	12	87	13.5
Paints and painting	0	6	14	5	74	53.5

Agricultural mechanics as rated by non-county agricultural teachers showed three areas that were highly acceptable. They were elementary welding and cutting by arc and acetylene processes, farm

power and machinery repair, and tractor tune-up and repair. Five areas that received a low total point value were sheet metal operations, cold metal operations, metal lathe operations, hot metal operations, and oil hydraulics. Other divisions rated between the two extremes of acceptability.

Table 29. Importance of curriculum areas in Future Farmers of America activities as rated by 25 non-county vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Chapter meetings	0	0	3	22	97	1
Educational value	0	1	11	13	87	13.5
FFA degree advancement	0	0	10	15	90	6
Leadership development	0	0	5	20	95	2
National FFA conventions	0	5	8	12	82	29
Parliamentary procedure (conducting of meetings)	0	0	9	16	91	5
Public speaking assignments	0	1	11	13	87	13.5
Service on FFA committees	0	1	11	13	87	13.5
State FFA conventions	0	1	11	13	87	13.5
Recreational activities	0	5	11	9	79	41.5

Curriculum areas in Future Farmers of America activities as rated by non-county agricultural teachers showed eight areas that were highly acceptable. They were chapter meetings for FFA members, leadership development, parliamentary procedure, FFA degree advancement, educational value, public speaking assignments, FFA conventions, service on FFA committees. No area received a low total point rating. All were rated as being recommended.

Table 30. Importance of curriculum areas in supervised experience as rated by 25 non-county vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Conducting farm and home improvements	0	3	6	16	88	9
Exhibiting at stock shows and fairs	0	4	13	8	79	41.5
Maintaining agricultural farming projects	0	3	14	8	80	37
Record keeping of farming projects	0	0	8	17	92	3.5
Work experience in related agriculture	0	1	12	12	86	19

Non-county agricultural teachers rated the areas of record keeping of farming enterprise projects and conducting farm and home improvements being highly acceptable. Ratings in this section did not show one area to be of low total point rating.

Table 31. Importance of curriculum areas in Future Farmers of America judging team activities as rated by 25 non-county vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank Importance
Agricultural mechanics skills and abilities	0	3	16	6	78	44
Classifying soils and their production ability	1	4	14	6	75	50.5
Meat judging and selection of cuts of meat	2	3	16	4	72	56
Selection of dairy cattle	0	4	16	5	76	48
Selection of dairy products (milk, ice cream, cheese, etc.)	3	8	11	3	64	63
Selection and identification of plants, seeds, weeds	0	5	16	4	74	53.5
Selection of livestock (beef, sheep, hogs)	0	2	17	6	79	41.5
Selection of poultry and poultry products	2	10	13	0	61	65.5

Curriculum areas pertaining to FFA contest activities as rated by non-county agricultural teachers fails to indicate an area as highly acceptable by total point rating. The areas of poultry selection, and selection of dairy products, rated a low total point rating. The remaining areas were rated as acceptable.

Table 32. Importance of curriculum areas as an aid to counseling as rated by 25 non-county vocational agricultural teachers

	No value	Has value	Recommended	Essential	Total point value	Rank importance
Toward students going into farming as a full-time vocation	1	4	9	11	80	37
Toward students going into related agriculture	0	1	14	10	84	22.5
Toward all students desiring agricultural knowledge	1	4	9	11	80	37
Toward teaching of agricultural principles	0	5	9	11	81	33
Toward teaching of agricultural practice	0	4	13	8	79	41.5

The rating of curriculum areas as an aid to counseling by non-county agricultural teachers fails to indicate a single area of high acceptability. Also, ratings in this section did not indicate any areas of low acceptability. All areas were rated recommended.

The following pages show those areas rated highly acceptable (1-12), low rated curriculum areas were rated from 57 to 69 by the queried groups.

Student evaluation

Student evaluation of vocational agricultural curriculum areas shows the following areas of curriculum content to be highly recommended by high total point value and rank.

Content area	Total point value	Rank
Record keeping of farming projects	1427	1
Soil and water conservation	1378	2
Welding and elementary cutting	1364	3
Livestock disease and sanitation	1347	5
Use of agricultural chemicals	1347	5
Classification of soils to production ability	1347	5
FFA leadership development	1340	7
Maintaining agricultural farming projects	1337	8
Use of commercial fertilizer	1333	9
Farm management	1331	10.5
Livestock nutrition	1331	10.5
Agricultural mechanic skills	1317	12

Students gave a high rank to 12 areas in six of the eight major subject groups in the questionnaire as indicated above.

Student evaluation of vocational agricultural curriculum areas shows the following areas to have a low total point value and rank.

Content area	Total point value	Rank
Horse production and management	764	69
Fur breeding production and management	822	68
Metal lathe operation	946	67
Ornamental horticulture	957	66
Sheet metal operations	983	65
Farm drawing	992	64
Farm and home beautification	1023	63
Poultry production and management	1061	62
Paints and painting	1075	61
Oil hydraulics	1079	60
Non-farm agricultural occupations	1093	59
Sheep production and management	1096	58
Hot metal operations	1098	57

Students gave a low rank to 13 areas in four major subject groups as indicated above.

These students are now in the labor market. The low total point rank importance may have been influenced by lack of high school training or by lack of demand in the present labor market.

Utah County agricultural teacher evaluation

Utah County agricultural teacher evaluation shows the following areas of curriculum content to be highly recommended by high total point value and rank:

Content area	Total point value	Rank
Elementary welding and cutting	56	1.5
Agricultural mechanics skills	56	1.5
FFA Chapter meeting importance	54	3
Livestock nutrition and feeding	53	6
Livestock sanitation and disease control	53	6
Classification of soils to production ability	53	6
Soil and water conservation	53	6
Use of commercial fertilizers	53	6
Beef production and management	52	11
Production of forage crops	52	11
Use of agricultural chemicals	52	11
FFA leadership development	52	11
Conducting farm and home improvements	52	11

Utah County vocational agricultural teachers gave a high rank to 13 courses in five major subject groups of the questionnaire as indicated above. Students rated most of these same areas as having high acceptability.

Utah County agricultural teacher evaluation shows the following areas to have a low total point value and rank:

Content area	Total point value	Rank
Fur breeding production and management	26	69
Metal lathe operation	30	68
Horse production and management	31	66.5
Selection of dairy products (milk, cheese, butter, etc.)	31	66.5
Sheet metal operations	33	65
Ornamental horticulture	34	64
Poultry production and management	36	62.5
Oil hydraulics	36	62.5
Forestry and range management	37	60.5
Farm drawing	37	60.5
Hot metal operations	38	59
Selection of poultry and poultry products	39	58
Meat judging and selecting cuts of meat	41	57

Utah vocational agricultural teachers gave a low rank to 13 areas in four major subject groups of the questionnaire as indicated above.

Students and Utah County vocational agricultural teachers agreed on the low rank value (57-69) for the following subjects: horse production and management, poultry production and management, fur production and management, ornamental horticulture, hot metal operations, oil hydraulics, metal lathe operations, sheet metal operations, and farm drawing.

Utah County secondary school administrator evaluation

Utah County secondary school administrator evaluation showed the following curriculum areas to be highly recommended by high total point value and rank:

Content area	Total point value	Rank
FFA Chapter meeting importance	71	1
Record keeping of farming project enterprises	70	3
FFA leadership development	70	3
Soil and water conservation	70	3
Use of agricultural chemicals	69	6
Farm management (renting, buying, costs, etc.)	69	6
Conducting farm and home improvements	69	6
Use of commercial fertilizers	68	9
Farm power, machinery repair	68	9
Principles of irrigation	68	9
Beef production and management	67	12.5
Agricultural processing and marketing	67	12.5
Welding elementary and cutting	67	12.5
Courses directed toward non-agriculture related agriculture	67	12.5

Utah county secondary school administrative personnel gave a high rank to 14 areas in six of the eight major subject groups in the questionnaire as indicated above.

Utah county secondary school personnel evaluation shows the following curriculum areas to have a low total point value and rank:

Content area	Total point value	Rank
Fur breeding production and management	45	69
Horse production and management	46	68
Metal lathe operation	47	67
Sheet metal operations	50	66
Forestry and range management	52	64.5
Farm drawing	52	64.5
Poultry production and management	54	62.5
Hot metal operations	54	62.5
Oil hydraulics	55	61
Selection and identification of dairy products (milk, cheese, butter, etc.)	56	59.5
Teaching toward students going into farming as a full- time vocation	56	59.5
Advanced welding (welding advanced, vertical, bronze)	57	57.5
Paints and painting	57	57.5

Utah County secondary school administrative personnel gave a low rank to 13 areas in the five major subject groups in the questionnaire as indicated above.

Seven curriculum areas in the agricultural mechanics division recieved a low rank.

Non-county agricultural teacher evaluation

Non-county vocational agriculture teacher evaluation shows the following areas of curriculum in vocational agriculture to be highly recommended by high total point value and rank. The ranking by this group of teachers shows importance of course content in other geographical locations of the state.

Content	Total point value	Rank
FFA Chapter meeting importance	97	1
FFA leadership development	95	2
Welding elementary	92	3.5
Record keeping of farming project enterprises	92	3.5
Parliamentary procedure use	91	5
FFA degree advancement	90	6
Livestock disease control and sanitation	89	7.5
Farm power machinery repair	89	7.5
Conducting farm and home improvements	88	9
Livestock feeding and nutrition	87	13.5
Use of agricultural chemicals	87	13.5
Use of commercial fertilizer	87	13.5
Tractor tune-up and repair	87	13.5
FFA educational value	87	13.5
Public speaking assignments	87	13.5
Service on FFA committees	87	13.5
Attending state FFA conventions	87	13.5

Non-county vocational agricultural teachers gave a high rank to 17 curriculum areas. This group gave high rating to eight subject areas in Future Farmer activities.

Non-county agricultural teacher evaluation showed the following areas to have a low total point value and rank:

Content area	Total point value	Rank
Fur breeding production and management	48	69
Metal lathe operation	60	67.5
Poultry production and management	60	67.5
Sheet metal operations	61	65.5
Selection of poultry and poultry products	61	65.5
Horse production and management	62	64
Selection of dairy products (milk, cheese, etc.)	64	63
Production of fruits (orchards, berries)	65	62
Forestry and range management	66	60.5
Cold metal operations	66	60.5
Hot metal operations	70	58.5
Oil hydraulics	70	58.5

Non-county agricultural teachers gave a low rank to 12 areas in three major subject groups as indicated above.

Fruit production was the only curriculum area which had not previously received a low total point rating.

Table 33. Compared evaluation of vocational agricultural areas by four groups of respondents

Rank rating of course content as expressed by queried groups	High school graduates	County voc ag teachers	Secondary school adm	Non-county voc ag teachers
<u>Livestock production</u>				
1. Animal breeding and heredity	22	15	26	19
2. Beef production and management	29.5	11	12.5	21
3. Dairy production and management	44.5	19	18.5	29
4. Feeding and nutrition	10.5	6	18.5	13.5
5. Horse production and management	69	66.5	68	64
6. Poultry production and management	62	62.5	62.5	67.5
7. Sanitation and disease control	5	6	18.5	7.5
8. Sheep production and management	58	26.5	49	29
9. Swine production and management	53	26.5	54	37
10. Fur breeding production and management	68	69	69	69
<u>Crop production</u>				
1. Classification of soils to production ability	5	6	18.5	25
2. Farm and home beautification with plants	63	37.5	31.5	53.5
3. Forestry and range management	51	60.5	64.5	60.5
4. Ornamental horticulture (landscaping, greenhouse)	66	64	54	57
5. Principles of irrigation	17	19	9	22.5
6. Production of forage crops (cereal, row crops)	37	11	43	29
7. Production of fruits (orchards, berries)	50	46	38	62
8. Soil and water conservation	2	6	3	25
9. Use of agricultural chemicals	5	11	6	13.5
10. Use of commercial fertilizers	9	6	9	13.5
11. Weed identification and control	23	26.5	18.5	25
<u>Business agriculture</u>				
1. Agricultural processing and marketing	21	46	12.5	48

Table 33. Continued

Rank rating of course content as expressed by queried groups	High school graduates	County voc ag teachers	Secondary school adm	Non-county voc ag teachers
<u>Business agriculture (continued)</u>				
2. Agricultural law (contracts, agreements)	18	26.5	54	53.5
3. Agricultural sales, services, supplies	40.5	52.5	31.5	45.5
4. Farm management (renting, buying, labor costs)	10.5	19	6	37
5. Off-farm agricultural occupations	59	46	38	29
<u>Agricultural mechanics</u>				
1. Agricultural building construction	35.5	26.5	43	50.5
2. Agricultural mechanics skills	12	1.5	31.5	19
3. Cold metal operations	56	55.5	49	60.5
4. Farm electricity	44.5	46	49	45.5
5. Farm power, machinery repair	16	19	9	7.5
6. Hot metal operations	57	59	62.5	58.5
7. Oil hydraulics	60	62.5	61	58.5
8. Metal lathe operation	67	68	67	67.5
9. Small engine operation and repair	33	33	31.5	33
10. Sheet metal operations	65	65	66	65.5
11. Welding, elementary and cutting	3	1.5	12.5	3.5
12. Welding, advanced (vertical, overhead, bronze)	42	46	57.5	33
13. Farm drawing	64	60.5	64.5	48
14. Tractor tune-up and repair	19	33	49	13.5
15. Paints and painting	61	52.5	57.5	53.5
<u>Indicate importance of FFA activities</u>				
1. Chapter meetings	31	3	1	1
2. Educational value	24.5	26.5	23.5	13.5
3. FFA degree advancement	38	15	18.5	6
4. Leadership development	7	11	3	2
5. National FFA conventions	55	52.5	54	29
6. Parliamentary procedure (conducting of meetings)	32	37.5	31.5	5

Table 33. Continued

Rank rating of course content as expressed by queried groups	High school graduates	County voc ag teachers	Secondary school adm	Non-county voc ag teachers
<u>Indicate importance of FFA meetings (continued)</u>				
7. Public speaking assignments	32	37.5	31.5	5
8. Service on FFA committees	40.5	19	31.5	13.5
9. State FFA conventions	48	37.5	43	13.5
10. Recreational activities	49	46	49	41.5
<u>Indicate importance of supervised activities in:</u>				
1. Conducting farm and home improvements	46	11	6	9
2. Exhibiting at stock shows and fairs	28	37.5	23.5	41.5
3. Maintaining agricultural farming projects	8	26.5	38	37
4. Record keeping of farming projects	1	15	3	3.5
5. Work experience in related agriculture	26	46	38	19
<u>Judging team activities in:</u>				
1. Agricultural mechanics skills and abilities	43	37.5	46	44
2. Classifying soils and their production ability	27	26.5	26	50.5
3. Meat judging and selecting cuts of meat	47	57	38	56
4. Selection of dairy cattle	34	52.5	26	48
5. Selection of dairy products (milk, cheese, ice cream, etc.)	54	66.5	59.5	63
6. Selection, identification of plants, seeds, weeds	39	55.5	18.5	53.5
7. Selection of livestock (beef, sheep, hogs)	14	26.5	18.5	41.5
8. Selection of poultry and poultry products	52	58	43	65.5
<u>Agricultural courses should be directed:</u>				
1. Toward students going into farming as a full-time vocation	20	41	59.5	37

Table 33. Continued

Rank rating of course content as expressed by queried groups	High school graduates	County voc ag teachers	Secondary school adm	Non-county voc ag teachers
<u>Agricultural courses should be directed: (continued)</u>				
2. Toward students going into related agriculture	29.5	37.5	12.5	22.5
3. Toward all students desiring agricultural knowledge	24.5	46	54	37
4. Toward teaching of agricultural principles	15	33	31.5	33
5. Toward teaching of agricultural practice	13	26.5	43	41.5

This table incorporates 69 areas of vocational agriculture, listed in eight topic groups and evaluated on the basis of rank by each of the four resource groups queried. The rank importance is listed after each subject topic. The highest rank is listed as one; the lowest ranked subject is listed as sixty nine.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The problem of this study was to determine what curriculum areas are recommended for a program of vocational agriculture, oriented to Utah County.

The purpose of this study was to evaluate 69 curriculum areas in vocational agriculture and tabulate the recommendations as a potential guide for improving the curriculum for departments of vocational agriculture in Utah County.

Sources of data were literature reviewing curriculum standards and practices of vocational agricultural programs and the replies of the respondents (400 former students, 14 teachers of vocational agriculture in Utah County, 19 secondary school administrators and supervisors from Utah County, and 25 Utah teachers of vocational agriculture who were not teaching in Utah County) were given a value rating of one point for no value, two points for has value, three points for recommended, and four points for essential. The curriculum area that received the highest number of points was ranked number one and the area that received the lowest number of points was ranked number 69. All respondents to the questionnaire accepted the 69 curriculum areas as having value, but they differed in total point rating.

Four curriculum areas were rated (1-12): use of agriculture chemicals, use of commercial fertilizers, welding elementary and cutting, leadership development from FFA activities.

Eleven additional curriculum areas received high total point

rating (1-12) by two or more groups. They were beef production and management, feeding and nutrition, sanitation and disease control, classification of soils to production ability, soil and water conservation, farm management (renting, buying, labor costs), agricultural mechanics skills, farm power and machinery repair, conducting farm and home improvements, chapter meetings, record keeping of farming projects.

Forty three curriculum areas were given total point rating of 13-56 by two or more respondent groups: dairy production and management; sheep production and management; swine production and management; farm and home beautification with plants; production of forage crops (cereal, row crops); production of fruits (orchards and berries); agriculture processing and marketing; agricultural law (contracts and agreements); agricultural sales, services, and supplies; non-farm agricultural occupations; animal breeding and heredity; principles of irrigation; weed identification and control; agricultural building construction; cold metal operations; farm electricity; small engine operation and repair; welding, advanced (vertical, overhead, bronze); tractor tune-up and repairs; paints and painting; educational value of FFA activities; FFA degree advancement; National FFA Conventions; parliamentary procedure (conduct in meetings); public speaking assignments; service on FFA committees; State FFA Conventions; recreational activities; exhibiting at stock shows and fairs; maintaining agricultural farming projects; work experience in related agriculture; agricultural mechanic skills and ability; classifying soils and their production ability; meat judging and selecting cuts of meat; selection of dairy cattle; selection and identification of plants, seeds, and weeds; selection of livestock (beef, sheep, hogs); selection of

poultry and poultry products; vocational guidance toward students going into farming as a full-time vocation; vocational guidance toward students going into related agriculture; vocational guidance toward teaching of agricultural principles; and vocational guidance toward teaching of agricultural practice, students desiring agricultural knowledge.

Generally, there were slight degrees of variance in total point rating of the foregoing 43 curriculum areas. Because of the slight variances, these subject areas provide a starting point in curriculum organization.

Eleven curriculum areas received a low total point rating (57-69) by three or more groups of respondents: horse production and management, poultry production and management, fur breeding production and management, forestry and range management, ornamental horticulture (landscaping, greenhouse), hot metal operations, oil hydraulics, metal lathe operation, sheet metal operation, farm drawing, selection of dairy products (milk, cheese, ice-cream, etc.).

Some areas of disagreement merit special examination. A wide range was shown in the area of off-farm agricultural occupations. The rating by former students ranked 59; Utah County vocational agricultural teachers rated this area 46; secondary school administrators rated it 38; non-county vocational agricultural teachers rated it 29. This wide variance seemed extreme. The non-county vocational agricultural teachers represented a cross-section of the state. Utah County is primarily an agricultural center, but its present urbanization has a diversity of non-farm industries. The cause of this variance may be a rewarding study.

Production of fruits had a total rating of 50, 46, 38, and 62. Utah County is a fruit producing area and this low rating presents a question as to whether or not this subject area has been considered in the classroom or by the teachers themselves.

Animal production was rated high, yet the related area of forestry and range management were rated low. Ornamental horticulture ranked 66, 64, 54, and 57--a very poor rating. Hypothetical explanation may be that the queried were unaware of the value and importance of training in this area.

Arnold (1966), Tenny (1965), Bjoraker and Matteson (1967), Blackburne (1964), and Stevenson (1966) agree that the greatest growing need appeared in off-farm agriculture, particularly in ornamental horticulture and business related agriculture. These subject areas were given a low rating by those queried in this study. This disagreement indicates clearly that there should be a clarification of the nature and importance of non-farm agriculture in Utah County. Perhaps, the fact that students queried graduated from high school prior to the passage of the Vocational Act of 1963 could have affected opinions.

Cold metal operation, hot metal operation, oil hydraulics, metal lathe operation, and sheet metal operation were given low acceptability ratings by participants in this study.

Non-farm agricultural operations were rated by 59 students, 46 by Utah County agricultural teachers, 38 by administrators and supervisors, 29 by non-county agricultural teachers. The rating by students suggests that they were not exposed to those areas in high school.

Factors which probably influenced conclusions by teachers and administrators were lack of facilities in high schools, lack of teacher

preparation, cost of conducting these programs, and lack of interest by teachers and students. Students may not have been exposed to these areas in high school or they may not have encountered the need for them in the labor market.

The objectives of this study have been realized by those ascertaining of evaluation of potential subject areas for vocational agricultural curriculum.

Variation in rating of the curriculum areas was found in all of the eight subject areas. Differences of judgment were to be expected and invite consideration in the building of a curriculum. The total rank rating of all curriculum areas showed disagreement that merits a critical examination by curriculum builders in relationship to Utah County as an agricultural area with growing urbanization. The judgments of former students of vocational agriculture, vocational agricultural teachers, administrators in secondary schools of Utah County are an expressed evaluation of subject areas taught in the various schools of the county and of projected areas according to local needs.

The differences of judgment are evaluations resulting from experiences in academic training and in the labor market. Therefore, these judgments merit consideration as guides in curriculum building.

Recommendations

1. Teachers of vocational agriculture should be involved in planning and initiating curriculum organization because they are close to the problems of the students and the community. The professional staff is the major determiner of the nature, quality, and effectiveness of agricultural education programs in public schools.

2. Graduates from the vocational agricultural program should be involved in the building of the agricultural curriculum.
3. Administrators, supervisors, and vocational counselors should be involved in planning an agricultural curriculum.
4. It is recommended that ratings of curriculum in this study by former agricultural students, vocational agricultural teachers, secondary school personnel of Utah County be considered in evaluating and enriching curriculum areas.
5. In view of literature cited and the current vocational acts, attention should be given to several areas in the vocational agricultural curriculum such as: ornamental horticulture, forestry and range management, off-farm agricultural occupations, oil hydraulics and business agriculture, in spite of ratings given by those queried.
6. Further studies need to be made to obtain additional information for use in curriculum building.

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APPENDIXES

Appendix AUtah County Statistical Information

According to a Master plan for Utah County (1968), Utah County is located in the central part of the state of Utah. The populated area of the county is located near the center of the county.

Between the mountains and Utah Lake is a fertile strip of land which varies from four to ten miles in width. Fifteen cities range in population from 300 to 44,000 people. Precipitation varies from an average of 8 inches per year in the valley west of Utah Lake to over 30 inches in the mountains. Temperatures average from 60° to 100° F during the summer months and -10° to 60° F during winter months.

There are 1,279,730 acres of land surface and 91,990 acres of water surface. Of the land surface 601,073 acres, or 47 percent, is federally owned; 678,657 acres of 53 percent is non-federal lands. Of the non-federal land, irrigated land, intensive crop land, totals 72,000 acres; meadow and pasture land comprises 38,000 acres and dry crop land totals 33,000 acres.

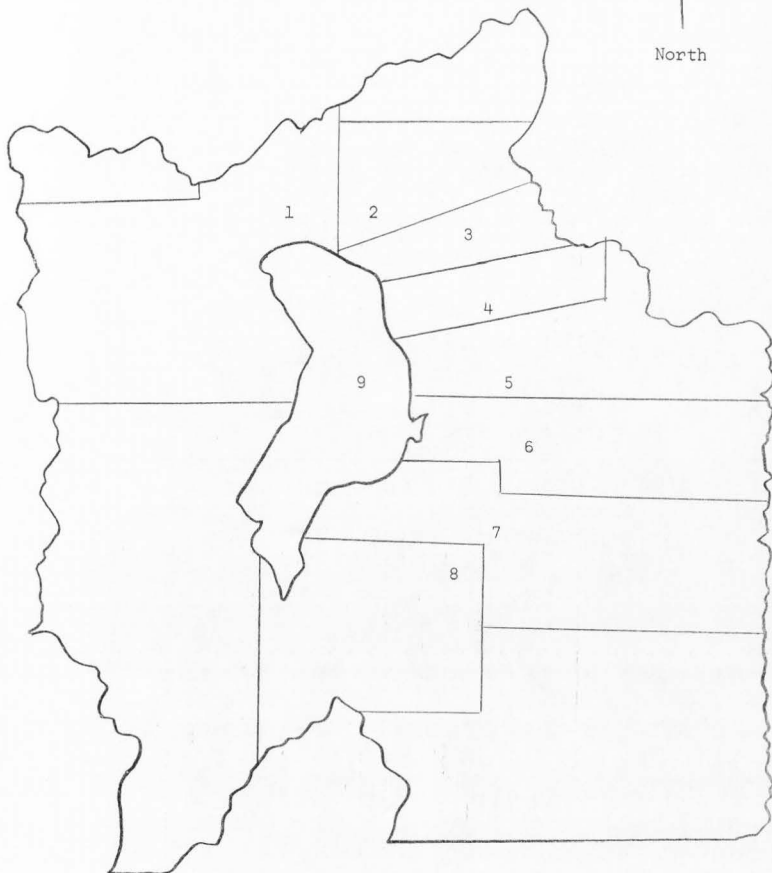
The Utah County overall economic development program of 1966 indicates that in 1965 Utah County was the most important agricultural county in Utah. Utah County ranks first in all products sold.

In 1965, 2,427 people were employed in agriculture. Cash income from agricultural production in Utah County has for several years averaged 25.5 million dollars.

Utah County's leading product is beef cattle. Sales income was over 5.5 million dollars in 1965. Sweet cherries, dairy, turkeys, sheep, apples, eggs, field crops, and vegetable crops all sold products valued at over a million dollars each.

Index Map of Utah County

↑
North



1. Lehi
2. American Fork
3. Pleasant Grove
4. Orem
5. Provo
6. Springville

7. Spanish Fork
8. Payson
9. Utah Lake

Appendix BUnsolicited Student Comments

Numerous comments were made by students returning questionnaires. These anonymous comments may help guide our directions toward a practical vocational agricultural curriculum.

Because I left the field of agriculture, I don't feel I should say where the courses should be directed. However, I think I should add that I have moved very well in my career with my present employer, and in my last appraisal was rated as very good for advancement in corporation management. I feel that the characteristics I developed, the training and guidance I received, and the opportunities I was given to grow and develop while working in the FFA and related activities were the most important of any area while I was in high school.

All students with a desire to learn about agriculture should have the opportunity. Agriculture should be geared to the related agricultural occupations.

The vocational agriculture program is very valuable for any person interested in learning about our world. It develops skills and principles better than any high school course I have taken. At the present time I'm not directly in the field of agriculture, but the training has been invaluable to me.

More young farmers are needed on the production end of agriculture. The average age of the American farmer is 59 years old. If the aged farmers are not replaced by trained young men our production end could be in jeopardy.

Since very few individuals go into farming per se, one who has agricultural inclinations must go into one of the related fields. But in spite of these problems, I feel that a good genetic, chemical, management, and mechanical background (as related to agriculture) gives one a wealth of careers which he might be able to follow.

The reason I have for orienting ag education to a broad coverage is to build youth, yet not specialize them. I think students wanting specialized education will obtain it later, yet they will have a solid basis for their specialization.

I am convinced that there is no other organization in the high school curriculum which offers a young man the advantage of Vocational Agriculture. The growth in such areas as public speaking, conducting of meetings, learning to work with others, and the basic principles of leadership are only a few elements

that I have found especially valuable.

The Vo. Ag. Program, including the FFA organization, is the strongest, most practical course offered in the secondary school system today! My happiest high school memories are related to this program.

Judging team activities involve too few students to be of practical value. We need more students involved.

Appendix CLetters to School Administrators, Vocational Agricultural Teachers,
and Former Graduating Students of Vocational Agriculture
in Secondary Schools in Utah County

November 25, 1968
Springville, Utah

Dear Sir:

Because of your position as a school administrator in the schools of Utah County, I am seeking your help. Your participation is vital to future changes of agricultural instruction and curriculum.

I am conducting a study of the vocational agriculture curriculum in Utah County. The purpose of this study is to identify the areas of suggested changes and the areas which are satisfactory in the vocational agriculture program.

I have enclosed a self-addressed, stamped envelope for your convenience.

Respectfully yours,

Loren J. Phillips
Vocational Agriculture Teacher
Springville High School
Springville, Utah

am
Enclosure

November 25, 1968
Springville, Utah

Dear Sir:

Because of your studying vocational agriculture in the secondary schools of Utah County, I am seeking your help. Your participation is vital to future change of agricultural instruction and curriculum.

I am conducting a study of the vocational agricultural curriculum in Utah County. The purpose of this study is to identify the areas which are satisfactory in the vocational agriculture program.

I have enclosed a self-addressed, stamped envelope for your convenience.

Respectfully yours,

Loren J. Phillips
Vocational Agriculture Teacher
Springville High School
Springville, Utah

am
Enclosure

Appendix D

Evaluation of Agriculture Courses of Utah County

Instructions for completing questionnaire:

Place an (x) in a column, in the space that best expresses your judgment.

Rating values

No value	Has value	Recommended	Essential
1	2	3	4

Indicate importance of course content

Livestock production

1. Animal breeding and heredity
2. Beef production and management
3. Dairy production and management
4. Feeding and nutrition
5. Horse production and management
6. Poultry production and management
7. Sanitation and disease control
8. Sheep production and management
9. Swine production and management
10. Fur breeding production and management

Crop production

1. Classification of soils to production ability
2. Farm and home beautification with plants
3. Forestry and range management
4. Ornamental horticulture (landscaping, greenhouse)
5. Principles of irrigation
6. Production of forage crops (cereal, row crops)
7. Production of fruits (orchards, berries)
8. Soil and water conservation
9. Use of agriculture chemicals
10. Use of commercial fertilizers
11. Weed identification and control

Business agriculture

1. Agriculture processing and marketing
2. Agriculture law (contracts, agreements)
3. Agriculture sales, services, supplies
4. Farm management (renting, buying, labor costs)
5. Off-farm agricultural occupations

Agricultural mechanics

1. Agricultural building construction
2. Agriculture mechanics skills

VITA

Loren Jay Phillips

Candidate for the Degree of

Master of Science

Thesis: Vocational Agricultural Curriculum Study in Utah County

Major Field: Agricultural Education

Biographical Information:

Personal Data: Born at Springville, Utah, September 16, 1931, son of Floyd and Hilda Losser Phillips; married Karma Rasmussen October 3, 1952; five children--Jay, Laura, Corine, Rachel, and Sheldon.

Education: Attended elementary school in Springville, Utah; graduated from Springville High School in 1949; attended Snow College 1951; received Bachelor of Science degree from Utah State University with a major in Animal Husbandry, 1953; received secondary teaching certificate in agricultural education, 1954; completed requirements for Master of Science degree, specializing in education and agriculture, at Utah State University in 1970.

Professional Experience: 1954 to present, teacher of vocational agriculture in secondary schools at Springville, Utah.