DOCUMENT RESUME

ED 021 969 VT 002 609

By- Binkley, Harold

PILOT PROGRAMS IN AGRICULTURAL OCCUPATIONS.

Kentucky Univ., Lexington. Div. of Vocational Education.
Pub Date Jan 67
Note- 50p.
EDRS Price MF- $0.25 HC- $2.08
Descriptors- *AGRICULTURAL SUPPLY OCCUPATIONS, COMPARATIVE ANALYSIS, CONTROL GROUPS, EMPLOYER ATTITUDES, EXPERIMENTAL GROUPS, EXPERIMENTAL PROGRAMS, GRADE 12, GUIDELINES, OFF FARM AGRICULTURAL OCCUPATIONS, *PILOT PROJECTS, *PROGRAM DESCRIPTIONS, *PROGRAM EVALUATION, STUDENT ATTITUDES, TEACHER ATTITUDES, TESTING PROGRAMS, *VOCATIONAL AGRICULTURE
Identifiers- Kentucky

The joint supervisory and teacher education staffs developed criteria and surveyed needed agricultural competencies as a basis for course building. Teacher educators developed unit outlines for pilot programs in off-farm agricultural occupations conducted in Lafayette, Shelby County, Daviess County, and Reidland high schools. A quasi-experimental matched control group design was used, and pre and posttests were given to pilot and control classes of senior vocational agriculture students in mathematics, feeds, seeds, fertilizers, and chemicals. Differences in score gains and posttests over pretests between pilot and control groups were not impressive. Separate evaluations of the pilot programs were made by students, businessmen, and teachers. The overall evaluation was favorable. The findings showed that programs of systematic instruction in agricultural occupations can prepare 12th grade vocational agriculture students for job entry into agricultural supply sales and service businesses or for entry into an advanced educational program. The 23-point summary and 20 conclusions provide guidelines for initiating programs. (JM)

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IN
AGRICULTURAL OCCUPATIONS

COLLEGE OF EDUCATION
UNIVERSITY OF KENTUCKY

1967

PILOT PROGRAMS

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HAROLD BINKLEY

January 1967

Bulletin of the Division of Vocational Education
College of Education

UNIVERSITY OF KENTUCKY
LEXINGTON 40506

PREFACE

Preparing students for employment in the many occupations of the total agricultural industry will be an integral part of the program of vocational education in agriculture in the future. The 1963 Vocational Education Act provides for systematic instruction in agriculture for those engaged in or preparing for farming and for those engaged in or preparing for other occupations which involve knowledge and skill in agicultural subjects.

This report on pilot programs in agricultural occupations should be useful on a local level, as well as in state supervision and teacher education. From it, school people may obtain ideas on how to plan and develop local programs in agricultural occupations.

The significance of this report becomes more important when one considers the need for other types of special programs in agricultural occupations. Many of the ideas discussed and the conclusions reached apply to developing other types of programs in vocational agriculture.

M. M. Botto, Director
Agricultural Education

ACKNOWLEDGEMENTS

The pilot programs in agricultural occupations in Kentucky were made possible through the efforts of many people. The joint staff in agricultural education (supervisors and teacher educators) developed the philosophy and criteria for the programs and conducted a survey to determine the competencies needed by employees in agricultural-supply businesses. The results of the survey of competencies were used as a basis for course building. Teacher educators developed unit outlines as follow: Dr. William Bingham, feeds; Dr. Herbert Bruce, Jr., fertilizers; Dr. George Luster, organization and operation of a distributive business; and Mr. Floyd Cox, seeds. Likewise, the teacher educators helped in administering pre-tests and post-tests to all pilot and control classes.

Dr. Maurice Baker, Distributive Education, rendered valuable assistance through guidance and by making materials and references available.

The teachers of the pilot programs spent many extra hours in organizing their classes, working with advisory committees, developing work stations, preparing to teach, and in supervising students. Mr. J. P. Truitt conducted the program at Lafayette High School (Fayette County), Mr. James Golden at Shelby County High, Mr. Ben A. Burns at Daviess County High, and Mr. Clayton Riley at Reidland High School, (McCracken County). These men are to be commended for their dedication, their time, and all-out effort in conducting the pilot programs.

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INTRODUCTION

The Problem

Kentucky has many capable boys taking vocational agriculture who will not, for one reason or another, attempt to become established in farming. Likewise, there are many farm boys who should be taking vocational agriculture but are not because they, their parents, school people, and others think that the training leads only to farming.

In many states there are two to three times as many jobs in nonfarm agricultural occupations as there are in farming, and the number is increasing. In New York 3,841 of these workers were found in only 16 school districts; in Utah 5,774 in two counties; there were 4,692 workers in 11 Mississippi counties; and 14,905 in 17 Pennsylvania counties. In 1959, Kentucky had 150,000 farmers. There were approximately 128,000 people working in businesses that serviced and sold supplies to farmers, businesses that processed agricultural products, and firms that wholesaled farm products—almost a one-to-one ratio. Add to this the people in ornamental horticulture—also agriculture—and the ratio exceeded one to one.

The people in vocational agriculture and the people in the agricultural industry know that abilities in farming, developed in vocational agriculture, are definite assets to those who enter nonfarm agricultural occupations. In addition, there is a very definite and keenly felt need for specialized training through vocational agriculture in selected areas of nonfarm agricultural occupations. Thus, the people in agricultural education in Kentucky felt the need for pilot programs in agricultural occupations to:

1. Determine abilities in farming which are needed in nonfarm agricultural occupations.
2. Determine "how to use" the abilities in farming in the nonfarm agricultural occupations.
3. Determine other abilities needed for successful 'job entry" in nonfarm agricultural occupations.

Purpose of the Pilot Programs

The pilot programs were conducted to learn how to conduct

effective instructional programs in agricultural occupations, other than farming. Some questions that were to be answered are:

Organizing and Conducting Programs—

1. How decide whether or not to start a training program in a nonfarm agricultural occupation in a given school?
   —Studies to make
   —People to involve
2. How conduct surveys of:
   —Training possibilities?
   —Job opportunities?
   —Abilities (competencies) needed?
3. How organize and use an advisory committee?
4. How work with guidance people in enrolling students in the program?
5. How secure parent understanding of the program?
6. How develop good training stations (including developing a clear understanding of the program on the part of cooperators)?
7. What kind of students are "cooperators" interested in helping to train?
8. What procedure should be used in placing students in training stations?
9. How much work experience should be provided during the school year?
10. What kind of work-experience agreements should be made?
11. How develop a course of study to meet the needs of students—to develop the competencies needed for "job entry" in nonfarm agricultural occupations?
12. What teaching materials are needed for the program?
13. How teach the classes in agricultural occupations?
14. What kind and amount of supervision should be provided students by the teacher? The employer?
15. What records should be kept by the department:
    —On each student?
    —On the program?

Students Participating in the Program—

16. What type of student can profit from the training program?
17. What kind of work experience is practical in agricultural occupations for 12th-grade students?
18. What records should be kept by the students?

19. What effect does the training in agricultural occupations have on other school work, general attitude, personality?
20. How evaluate student progress in the training program?
    —Tests, as a means of evaluation
    —Other means of evaluation
21. What effect does the program have on students in the first three years of vocational agriculture?
22. How valuable are the first three years of vocational agriculture as a prerequisite for training in nonfarm agricultural occupations?
23. How successful are students in getting and holding jobs after completing the training?

Basic Assumptions

Inasmuch as many students of vocational agriculture enter nonfarm agricultural occupations, the following assumptions were made:

1. Teachers of agriculture are interested in providing training in nonfarm agricultural occupations for those students who are not likely to enter farming as a career.
2. Students of vocational agriculture who do not have a good opportunity to enter farming are interested in receiving such training.
3. Agricultural businesses who employ young men to sell to, render service to, and to buy from farmers are interested in their prospective employees receiving training for their jobs.
4. School administrators and other school people are interested in providing training for those who are to enter agricultural occupations.
5. Parents are interested in their sons receiving training in nonfarm agricultural occupations which will prepare them for gainful employment.

Delimitations of Pilot Programs

The pilot programs were limited to four consolidated high schools which offered four years of vocational agriculture. Enrollment was limited to 12th-grade students who had completed two or more years of vocational agriculture.

Enrollment, per class, was limited to twelve students. One hundred (100) hours of supervised work experience in an agricultural business were set as the minimum, per semester.

The training program was designed to prepare 12th-grade students

of vocational agriculture for "job entry" in agricultural-supply business which sell production supplies and services in seeds, feeds, fertilizers, agricultural chemicals, and other agricultural supplies. This is not to say that people should not be trained for other agricultural occupations, in other types of businesses such as farm power and machinery, in the many areas of horticulture, and other areas of the agricultural industry. The programs were limited to the area defined in order that the core of the instruction could be related to the supervised work experience of the students in the agricultural-supply businesses.

Selecting the Schools

The district supervisors in agricultural education were asked to name schools in their districts suited to conducting pilot programs. After further discussion it was agreed that the district supervisors would contact the school people where such programs had good possibilities for success and where the people would likely be interested. Four standards were checked out in the positive for each school named:

- —Interest of school administration in the program and a teacher interested in conducting the program
- —Ample time could and would be provided for the teacher to do the job
- —Enough students interested in taking the training (minimum of 8) and parent approval secured
- —Enough agricultural-supply businesses in the area selling or rendering services in feeds, seeds, fertilizers, and agricultural chemicals interested in the program to provide the training stations needed

Four schools were selected, well spaced over the State. They were: Lafayette High School (central Kentucky), Shelby County High (near Louisville), Daviess County High (mid-western part of the State), and Reidland High School (western part of the State).

Determining Competencies Needed

Agricultural-supply businesses selling feeds, seeds, fertilizers, agricultural chemicals, and other farm supplies were visited and studied. The managers were interviewed in terms of individual employees in the firms. Three basic questions were asked for each kind of employee.

What does this man do in the business?
What would you like him to do better than he is now doing?
What would you like him to do, which he cannot now do?

As these questions were answered, notes were made of the comments and jobs named. Leading questions were asked to get at certain areas that were overlooked. A survey instrument was developed from the information secured from the agricultural business men.

The survey instrument consisted of six major areas, with the number of competencies in each, as follow:

General competencies	25
Business competencies	41
Competencies in feeds	49
Competencies in seeds	38
Competencies in fertilizers	50
Competencies in agricultural chemicals	47

In December of 1963, each staff member (supervisor and teacher educator) surveyed five agricultural businesses which sold and/or rendered services in feeds, seeds, fertilizers, or agricultural chemicals. A survey form was completed for each different kind of employee in the business. Examples: 1) manager, 2) bookkeeper, 3) salesman, 4) clerk, and 5) service man.

The survey had good state-wide coverage in that each teacher educator surveyed in a different supervisory district, coordinating his work with the district supervisor. The result of this survey is published in *Competencies Needed by Employees in Agricultural-Supply Businesses,* Department of Agricultural Education, University of Kentucky.

Experimental Design

A quasi-experimental matched control group design was used for each of the four pilot programs. Pre-tests and post-tests were given to students in five areas of the course of study: 1) agricultural mathematics, 2) feeds, 3) seeds, 4) fertilizers, and 5) agricultural chemicals. Pilot classes and control classes, all 12th-grade students of vocational agriculture, were as follows:

Pilot O_1 Classes	Control O_2 Classes	Control O_3 Classes
Lafayette High	Lafayette High	Bryan Station High
Shelby County High	Shelby County High	Henry County High
Daviess County High	Daviess County High	Henderson County High
Reidland High	Lone Oak High	Heath High

In the cases of Lafayette, Shelby County, and Daviess County there was a second class of 12th-grade students of vocational agriculture to use as the control—O_2 classes. At Reidland there was only one 12th-grade class of vocational agriculture so Lone Oak High School provided the O_2 class. The O_3 classes were selected on basis of the nearest school with an equal enrollment, which had similar farming conditions, and similar farming programs of the boys enrolled in vocational agriculture.

Pre-tests in each of the five areas were given to all students in each of the O_1 and O_2 classes, by a staff member of the Department of Agricultural Education, University of Kentucky, the day before each unit was to statrt in each of the O_1 classes. Post-tests were administered by a staff member at the end of each of the five units to all students in the O_1, O_2, and O_3 classes.

CHAPTER II

VOCATIONAL EDUCATION IN AGRICULTURE AND THE 1963 VOCATIONAL EDUCATION ACT

The 1963 Vocational Education Act amended the Smith-Hughes and George-Barden Acts to permit Federal funds to be used in agricultural training programs for occupations in which knowledge and skills in farming are used. These occupations are commonly known as farm-related occupations. The program of vocational agriculture has been effective in providing training in farming. It has also been effective in providing instruction in farming for those who entered farm-related occupations.

Unless those who have cast their lot with vocational agriculture do some clear thinking and recommitting of themselves, much of the gain of nearly half a century in vocational agriculture may be lost as the profession moves to provide training in the broad field of agricultural occupations. The basic philosophy of vocational agriculture is sound. It has been largely responsible for the success of the programs from the start. The need for farmer training is increasing. Likewise, there is an increased need for training in farming for those who are to enter other agricultural occupations.

The main business of vocational education in agriculture is to provide training in farming. For years this has been the chief aim of vocational agriculture. The 1963 Act recognized this fact. Basically, vocational education in agriculture is training in farming. It is for all those who can use the training. Such things as forestry, beautification of grounds and lawns, and growing plants under cover have long been included as vocational agriculture. Also, teachers of agriculture have long taught the opportunities in agricultural occupations in the broad field of agriculture. This will need more emphasis in the future.

Until specific training in agricultural occupations is needed in separate classes, training in production agriculture (farming) for high-school students should not be changed. Changes should not be made too suddenly and without adequate research. Ordinarily any shift to specific agricultural occuaptions should not be made before the senior year in high school.

Supervised practice in farming for persons training to enter farming is still a fundamental concept. The 1963 Act did not change this fact. Boys or young men in a separate class training for occupations related

to farming should have a participating-experience program in line with the related occupations for which they are in training and the instruction they are receiving.

A look at the aim of vocational agriculture as stated in 1917, followed by changes in recent years (by general agreement), and a look at the essential characteristics of the program of instruction in agriculture under the 1963 vocational Education Act are essential to projecting future programs.

Vocational Agriculture, 1917

The Smith-Hughes Act (1917) provided Federal funds for the education of persons "who have entered upon or are preparing to enter upon the work of the farm." The aim was to train present and prospective farmers for proficiency in farming.

Vocational Agriculture in Recent Years

The 1917 aim of vocational agriculture was changed over the years, by general agreement. Vocational agriculture in recent years has not been considered as leading only to the farm. It has led to many occupations in which proficiency in farming makes a significant contribution. Agriculture is more inclusive than farming. In recent years the primary aim of vocational agriculture has been to train for proficiency in farming persons who can benefit from such proficiency.

The Vocational Education Act of 1963

The program of agricultural education under the 1963 Act includes dealing with practical agricultural problems and using the subject matter and learning experiences necessary in the production and marketing of plants or animals or their products. These programs should include:

a. Directed or supervised practice in agriculture on a farm for persons who are engaged in or preparing for farming.
b. Practical field, laboratory, or cooperative work experience to assure soundness and quality of instruction for those training for other occupations involving knowledge and skills in agricultural subjects

The farmers of tomorrow need to be well trained. Likewise, those who are to serve in other agricultural occupations need to be well trained. The job is big, complex, and challenging. Thus, the important question: how shall vocational agriculture move to meet the present and future needs? How shall vocational agriculture move to solve this big, complex, and challenging problem?

The Vocational Pattern of Instruction

The pattern of instruction in vocational agriculture is class instruction and directed or supervised practice in the agriculture dealt with in class. This must not be forgotten in developing new programs in vocational agriculture. Pressure will be brought to bear by school administrators, other teachers, and lay people to place less emphasis on the directed or supervised practice in the agriculture to be learned. The leadership in vocational agriculture must be alert and must "hold the ground" or it will lose the quality of the program it has had over the years and the respect of the public. Vocational agriculture has accepted the challenge of getting theory and practice experienced together. This is one of the greatest challenges in the future. If theory and practice are not experienced together, they will not be learned together. Theory that is not associated with the practice in learning is not likely to be learned in a functional manner; it is not likely to increase one's ability in doing.

The Need for Sound Programs of Supervised Practice in Agriculture

Participation in the agriculture one would learn is necessary to his learning it. Participation in farming or any other occupation in agriculture is essential in learning the vocation. The supervised practice part of the agricultural program gives the student an opportunity to carry out on the home farm or in an agricultural business what he has studied in the classroom — an opportunity to practice, and therefore to learn, what has been dealt with in the classroom. This is the most important function of the supervised practice program in agriculture as far as the teacher is concerned. Therefore, the supervised practice program must be considered an integral and a very important part of the total program of vocational agriculture in that it provides an opportunity for practice — the practice which is necessary if the student is to learn a vocation in agriculture.

Supervised practice in agriculture bridges the gap between agriculture as a subject and agriculture as a vocation. Only when "doing" is provided as an integral part of instruction can students develop the competencies needed for success in an agricultural vocation. The learner must see himself in action and note the results before he will be able to appraise his own growth. The teacher must observe the learner in practical situations in agriculture and appraise the learner's achievement in this in order to evaluate the effectiveness of the instruction. Well-rounded programs of supervised practice in agriculture provide the situation for learning by doing and evaluating outcomes.

To be vocational, instruction in agriculture must be provided to develop the abilities needed by persons for success in the agricultural occupation. If activities of supervised practice in agriculture are properly selected, they will contribute to the development of abilities needed by persons for success in the agricultural occupation.

In addition, supervised practice improves the effectiveness of instruction in at least three other ways. It provides:

1. Opportunities for adjusting instruction to differences in students and in their training situations.
2. Contacts which bring about wholesome relationships between the school and the home farm or agricultural business.
3. An important basis for evaluating the effectiveness of instruction in vocational agriculture.

A good training program provides opportunities for practice in the various aspects necessary for success in the agricultural occupation. Likewise, the program provides opportunity for learning particular manipulative abilities and to make managerial decisions—aspects on which success in the vocation largely depends.

The terms "supervised program in agriculture," "supervised practice in agriculture," or "supervised work experience program" carry with them a mandatory requirement in the 1963 Vocational Education Act by these words in the regulations: "1) Directed or supervised practice in agriculture on a farm for persons who are engaged in or preparing for farming, and 2) Practical field, laboratory, or cooperative work experience to assure soundness and quality of instruction for those training for other occupations involving knowledge and skills in agricultural subjects."

Not just any doing or participation or experience will produce desirable learning. The doing or participation may be miseducative; it may be of the wrong kind. One may learn errors, poor performance, or wrong procedures. What one learns may place him in a groove or rut. What one learns may narrow or restrict his opportunity to learn through future experience. Thus we have the necessity for teachers to supervise the performance or practice of the learners. It is the teacher's opportunity to direct the activities of the learners so as to produce the largest amount of the most desirable intended learning and the smallest amount of undesirable learning. Through supervision he should be able to increase the quality of the performance and get a greater amount of experience where it is needed.

Practice needs to be supervised for still another reason. Unless practice is conducted in the general situation in which performance is

desired, it will not be most effective. The home farm or other place of agricultural business provides the cues for behavior when away from school. If there is to be much carry-over from school to the agricultural business (home farm or otherwise), it will usually be necessary for the teacher to do some teaching "on the spot"—to give some supervision to the practices he would have the students perform correctly and learn.

Teacher Responsibility in Developing Supervised Practice Programs in Agriculture

It is the responsibility of the teacher of agriculture to assist each student in arranging for a good supervised practice program in agriculture, farming or otherwise. This program should provide much opportunity for practice and at the same time prepare one for "job entry" in an agricultural business. The teacher must visit and work with the student, parents, and agricultural businessman in developing the program. Likewise, he must assume the responsibility of following the progress of the program through supervision so that it will operate at maximum efficiency.

It is often said that the kind of supervised practice done by students enrolled in the program is a symbol of the kind of teacher of agriculture in the department. This, no doubt, is very true. When the teacher is satisfied with weak, poorly developed supervised practice in agriculture, his program will be weak. If a student is allowed to have a poor or weak supervised practice program, he cannot expect to be much of a success. His undertaking will be too small to stimulate and encourage him to do satisfactory work. Such programs do not develop a student's responsibility and enthusiasm, nor do they have the respect of the community.

The teacher of agriculture has a definite responsibility to the students, to the school, to the vocational program, and to himself, to decide which students should take vocational agriculture. He has the responsibility of guiding and counseling with parents, prospective students, and school officials to ensure enrolling students in vocational agriculture who can and will profit from the training.

The ability of the teacher to visualize the importance of supervised practice in agriculture and to begin to develop outstanding and successful programs of supervised practice programs in agriculture means that the teacher has the ability to have a successful program of vocational agriculture.

CHAPTER III

ORGANIZING FOR PILOT PROGRAMS

In the summer of 1963 the state director of vocational agriculture appointed a committee of two supervisors and two teacher educators to develop a philosophy and criteria for setting up pilot programs in nonfarm agricultural occupations. Following this, two joint staff meetings (supervisors and teacher educators) were held, one in October and one in November, at which time the philosophy and criteria were discussed, modified, and agreed upon.

Philosophy for Pilot Programs

The agricultural occupations in this publication are the occupations related to farming in that important abilities needed in farming are needed in them. If the abilities needed in farming are not acquired before beginning training for a specific agricultural occupation, developing them becomes a part of such training.

Training these workers is *agricultural education,* only because the training is related to farming. The occupations are "farm-related occupations." The basis for curriculum planning is the concept of *relatedness of abilities.* The core of the instruction is the abilities needed in farming—and how they may be used in other agricultural occupations. Farming abilities are the starting point.

For each farming ability selected to be dealt with in the course of study, the application of the ability to the occupation(s) other than farming must be identified and become a part of the instructional program.

The abilities in the related occupation which are not related to farming may require training outside of agriculture, in the broad field of vocational education. Thus, they may call for *cooperative* vocational programs. In the instructional programs, the teacher of vocational agriculture should deal with the abilities in farming (or those that are related to farming). The other abilities should be handled by people in fiields such as: distributive education, trade and industrial education, and business education.

The variety of technology in agricultural occupations varies from the simple and specific (such as knowing a good insecticide for cutworms, for example) to highly abstract and complex abilities (such as applying herbicides). Thus, courses of study will be of different lengths and for people of different levels of ability.

Guidance (occupational and educational) in the school and in the department of vocational agriculture must be functional.

The training in nonfarm agricultural occupations must equip (or better equip) the student with salable skills. Skills are not salable if jobs are not available. The training must satisfy the basic requirements of vocational education.

Criteria for Pilot Programs

Criteria for establishment of pilot programs, as agreed upon by the staff in agricultural education, included the following:

1. A maximum of four high-school programs and not more than two post-high-school programs shall be started during the pilot period (January 15, 1964 - June 30, 1965).
2. The programs shall be located where there are sufficient numbers of people interested in such training.
3. A high-school program may be set up only in a multiple-teacher department.
4. School administrators will be in on developing the local pilot program.
5. There must be class instruction and supervision of the participating experience that is related to the class instruction. The supervision will be provided by the teacher of the course and the employers of the students while they are in training. Training stations must be available.
6. Only a carefully worked out course which will meet the needs of people in an agricultural occupation, or that will secure the learnings that are identified as needed in more than one occupation, will be accepted. The aim of the course and the length of the program will be determined in advance. There will be a clear statement as to what the course will lead to, and careful consideration will be given to the participating experiences in which the students will engage.
7. There shall be a memorandum of understanding with the employer regarding the work experience to be provided each student. Memorandums of understanding as to time schedules of the teacher and students shall be developed with the principal and other school administrators.
8. A survey will be made to identify the abilities around which the course will be developed.
9. The employment opportunities must be carefully considered.

10. No course shall be approved which starts below the junior year; if only one high-school year is offered, it shall be in the senior year.
11. The advice of the guidance counselor will be sought in identifying the students to be trained for agricultural occupations.
12. The teacher shall be a graduate in agriculture, experienced in teaching, and certified to teach. He should have a sound and functional knowledge of agriculture, believe in vocational agriculture, and possess organizational and supervisory ability.
13. The teachers in the pilot programs will take an orientation course. One supervisor and one teacher educator will also take the course.
14. The teacher will be responsible to the local school principal (or director of an area vocational school) and will be under the supervision of the local supervisor of instruction and the state supervisor of agricultural education responsible for pilot progams.
15. The teacher shall make periodic reports and other reports as the state supervisor of the program may deem to be needed.
16. Responsibility for directing and supervising the pilot programs in the state will be lodged in one person. He will be responsible for setting up the programs, supervising them, and evaluating them.
17. One teacher educator will be designated to work with these programs on things pertaining to teacher education.
18. Individual folders will be kept on each student. Information needed in the folder should include:
    Personal information record, school record
    Test scores
    Follow-up information
19. The proficiency of the students will be determined at the beginning and at the end of the program.
20. An advisory committee made up of individuals who have a distinct interest in the success of this training program shall be *used.*

Timetable for Starting Programs

At the November staff meeting it was decided to select the schools and start the pilot programs in January—two months away. Following the November staff meeting, W. C. Montgomery, director of the pilot programs, and Harold Binkley, the teacher educator assigned to the project, set up the following timetable for getting the four pilot programs under way:

Things to be done	By this date
1. Keep staff records of plannning meetings, decisions reached, and important developments in conducting the programs.	Continuous
2. Explain philosophy on training these people.	Nov 8
3. Further clarify criteria for the pilot programs.	Nov 8
4. Discuss the proposed pilot programs with selected school and business people, including a representative of the Bureau of Instructional Services of the State Department of Education. (People at this meeting to be oriented to the philosophy and criteria for the programs before starting the discussion.)	Nov 22
5. Tentatively survey training situations and job opportunities.	Dec 1
6. Select the schools for the pilot programs.	Dec 1
7. Talk with some out-of-state people who have conducted pilot programs or who have pilot programs underway.	Dec 5-10 (AVA)
8. Survey the job opportunities in nonfarm agricultural businesses in the area of the pilot schools (teachers' job). Prepare survey form by December 1 (staff job).	Dec 14
9. Survey training situations (teachers' job). Prepare survey form by December 1 (staff job).	Dec 14
10. Set up local advisory groups composed of school and business people, and have meeting of this group.	Dec 16
11. Determine the abilities needed in the selected nonfarm agricultural occupations for which training may be provided. Prepare survey form by December 1 (staff job).	Dec 20
12. Decide on criteria for selecting the students for pilot programs, and select them.	Jan 1
13. Decide on the abilities to develop in the course.	Jan 1
14. Develop instruments for evaluating the students' proficiency at the beginning, during, and at the completion of the training program.	Jan 5
15. Develop and agree on work-experience for training, including participating experiences, between trainees and employers.	Jan 5
16. Develop and hold training and orientation course for teachers, supervisor, and teacher educator.	Jan 6
17. Develop course of study for pilot programs.	Jan 6

18. Develop units of instruction (decide on use of resource persons). Jan 15
19. Develop supervisory and report sheet for teacher and cooperators. Jan 15
20. Develop plans and record book for students. Jan 15

Orientation Course for Teachers

The four pilot teachers along with the state director of the pilot programs and a teacher educator were brought together for a 30-hour orientation the second week in January. The orientation dealt with:

—Philosophy and criteria for pilot programs
—What pilot programs are
—Questions we expect to get answered, regarding:
  Organizing and conducting programs
  Students participating in the programs
—Setting up and using advisory committees
—Facilities, equipment, and housekeeping
—Records and reports
  Records to be kept of teacher activities
  Records to be kept on each student (permanent record card)
  Records to be kept by the students (record book)
  Reports to be made by the teacher
—Teaching units
  Units in agriculture
  Other units
—Teaching the classes and supervising the students
—Books and other teaching materials

Course of Study

Units of instruction to be dealt with and their sequence for the spring semester 1964 were:

—Opportunities in Agriculture
—Orientation to the Training Program
—Human Relations and Personality Traits
—Salesmanship - Selling
—Agricultural Chemicals

The full year of piloting, starting September, 1964, included these additional units:

AGR. IV — Agricultural Occupations

UNIT	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Agricultural Occupations		5									5
Orientation to Training Program		8									8
Agricultural Mathematics		7	13								20
Feeds			7	5							12
Human Relations and Personality Traits				12							12
Store Skills				3	5						8
Salesmanship - Selling					15	7					22
Seeds						7	3				10
Fertilizers							12	4			16
Organization of Distributive Businesses								10	4		14
Agricultural Chemicals									10	10	20
Review and Evaluation										6	6
FFA						2	1	2	2		7
Timely group problems						4	4	4	4	4	20
Total	20	20	20	20	20	20	20	20	20	20	180

—Store Skills
—Agricultural Mathematics
—Organization of Distributive Businesses
—Feeds
—Seeds
—Fertilizers

Organization of these units of instruction into a course of study is shown on page 23.

Advisory Committees

A state advisory committee was set up which included twelve people representing agricultural businesses which sell to and render service to farmers, and others in seeds, feeds, fertilizers, and agricultural chemicals. In addition, a representative from the nursery business, a superintendent of schools, a high-school principal, a Farm Bureau representative, a teacher of agriculture, and a farm director of a TV station were included.

The committee rendered help and advice on such matters as:

—What employers desire in an employee
—Work experience agreements
—"Cost to the cooperator" of providing a training station
—"Blocks of time" desired by the employer for students to work
—Amount (hours) of training needed to prepare boys for "job entry"

Local advisory committees were set up for each pilot program. The teacher of agriculture worked with the principal and superintendent on whom should be asked to serve. The Board of Education asked the men to serve on the committee. The men who were asked to serve constituted a representative cross-section of the agricultural interests of the area. Membership on committees included: president of the Farm Bureau, farm director of local TV or radio station, representative of the local employment service, owner of a seed store, service manager of REA, owner of a nursery, owner of a farm machinery business, owner of a feed store, manager of a farm co-op store, and farmers.

The advisory committees helped the teachers with such matters as: 1) developing public relations for the program, 2) developing understanding of program, 3) setting standards for the selection of boys, 4) deciding on units of instruction to include in the course of study,

5) determining wages and hours of work for students, 6) securing work stations, and 7) securing support of school administration for program.

CHAPTER IV

PRE-TESTS AND POST-TESTS IN PILOT PROGRAMS

All tests given to classes in the pilot programs and to control classes were administered by the staff in agricultural education at the University of Kentucky. Pre-tests and post-tests were administered in: 1) agricultural mathematics, 2) feeds, 3) seeds, 4) fertilizers, and 5) agricultural chemicals.

A pre-test was given to each class in the pilot program just ahead of the time the teacher started to deal with each unit. At the same time, a pre-test was given to the control—O_2 class for each corresponding class in the pilot programs. A post-test was given at the end of each unit of instruction. The teacher would notify the staff at the University and the post-test would be given to the pilot class and the two corresponding control classes— O_2 and O_3 on same day. Pre-tests and post-tests were administered in the months as shown below.

Unit	Pre-test to O_1 and O_2 classes	Post-test to O_1 O_2 and O_3 classes
Agricultural mathematics	September	October
Feeds	October	November
Seeds	January	February
Fertilizers	February	March
Agricultural chemicals	April	May

Every effort was made to make the pre-test and post-test in each area of the same difficulty. The maximum score possible on each test was 100.

Agricultural Mathematics

The pre-test in agricultural mathematics revealed that students in the pilot and control— O_2 classes were weak in agricultural mathematics. The average of the four medians on the pre-test for the pilot classes was 30, while for the control classes it was 19. The average of the four medians on the post-test for the pilot classes was 51, a gain of 21 points over the pre-test. The average of the four medians for the control classes (O_2) on the post-test was 28, a gain of 9 points over the pre-test.

It is assumed on basis of the average of the four median scores for the pilot classes and O_2 control classes on the pre-test and the average of the median scores made by the O^3 control classes on the post-test,

that the pre-test and post-test were of the same difficulty. The increase in average median score of 9 points by the O_2 control classes on the post-test over the pre-test was probably due to some students being self motivated to improve their skill in agricultural mathematics. The instructional unit in agriculture mathematics yielded an increase in average of the median scores of 21 points out of a possible of 100, or a 40-percent improvement.

Feeds

Merchandizing feeds was one of four major areas in the course of study dealing with agricultural supplies. Most, if not all, of the students in the pilot classes and the control classes had received instruction in feeds in earlier years of vocational agriculture. The pre-test in feeds revealed that the students apparently knew considerably more about feeds than they did about making mathematical calculations.

The pre-test and post-test were judged to be of the same difficulty because the average of the four median scores for the pilot classes was 32, for the O_2 control classes 30, and 44 for the post-test for the O_3 control classes which were from schools that had better than average livestock projects in their farming programs. Therefore, they would be expected to be more knowledgeable in feeds. The increase in average of the median scores of pilot classes on the post-test over the pre-test was 26 points out of 100. This seems to be good. The increase in average of the median scores of 17 points of the O_2 control classes on the post-test over the pre-test appears normal. It was assumed that some boys were stimulated by the pre-test to do some work on their own.

Seeds

Merchandizing seeds was dealt with in January when most agricultural businesses were moving seeds. The average of the four median scores of pilot classes on the pre-test was 59, for the control classes 58, and the post-test of O_3 control class was 53. On the basis of these scores, the pre-test and post-test were judged to be of the same difficulty. Apparently the instruction in seeds was poor as revealed by the average of the median scores of the post-test pilot classes of 61, a gain of only 2 points, out of 100, over the average of the median scores on the pre-test. Also the average of the median scores of the post-test on the O_2 control classes was 61, the same as the pilot classes which had received instruction in seeds.

TABLE 1
Results of Pre-Test and Post-Test in Agricultural Mathematics

Classes	School	Range in Scores on: Pre-Test			Post-Test		
		Low	Median	High	Low	Median	High
O_1	A	6	31	36	10	47	63
	B	4	20	52	36	50	86
	C	6	30	48	22	38	74
	D	14	39	58	34	70	80
	Average	7	30	48	25	51	76
O_2	A	0	23	44	8	35	54
	B	4	17	34	10	38	52
	C	0	18	32	7	18	54
	D	0	14	36	4	23	54
	Average	1	19	36	7	28	53
O_3	A				2	20	43
	B				12	27	43
	C				2	27	72
	D				0	25	42
	Average				4	25	50

TABLE 2
Results of Pre-Test and Post-Test in Feeds

Classes	School	Range in Scores on: Pre-Test			Post-Test		
		Low	Median	High	Low	Median	High
O_1	A	26	30	45	39	55	68
	B	16	33	61	43	53	84
	C	13	32	53	36	57	79
	D	21	32	60	52	67	88
	Average	24	32	55	42	58	80
O_2	A	12	33	60	47	50	81
	B	21	31	61	33	46	58
	C	24	30	52	36	42	54
	D	19	28	45	32	51	62
	Average	19	30	57	37	47	64
O_3	A				23	47	55
	B				38	47	58
	C				27	40	68
	D				30	42	55
	Average				29	44	59

TABLE 3
Results of Pre-Test and Post-Test in Seeds

Classes	School	Range in Scores on: Pre-Test			Post-Test		
		Low	Median	High	Low	Median	High
O_1	A	60	66	79	39	53	87
	B	42	57	85	43	57	72
	C	30	53	70	30	66	89
	D	43	62	73	50	69	81
	Average	44	59	77	40	61	82
O_2	A	43	69	77	33	60	67
	B	33	51	69	31	60	79
	C	52	59	72	66	71	80
	D	43	55	70	41	55	81
	Average	43	58	72	43	61	77
O_3	A				37	53	60
	B				25	50	76
	C				40	48	73
	D				33	63	50
	Average				34	53	65

Fertilizers

It was assumed that all classes had about the same background of instruction in fertilizers in earlier years. This assumption was borne out by the average of the median scores made on the pre-test by the pilot and O_2 control classes and post-test scores made by the O_3 control class—34, 37, and 36 respectively. The instruction in fertilizers produced a net increase in the average of the median scores of 18 points out of 100 for the pilot classes. However, the students of one teacher showed an increase of 30 points. The O_2 control classes had an increase of 7 points in average of their median scores on the post-test over the pre-test, probably due to individual motivation of students.

Agricultural Chemicals

The unit on agricultural chemicals was complex and perhaps too difficult for high-school students of vocational agriculture to master in the time alloted. Also it is felt that the students in the O_3 control classes, because of the crop projects in their farming programs, were perhaps more knowledgeable in the use of agricultural chemicals than were their counter partners in the pilot and O_2 control classes.

The pre-test and post-test in agricultural chemicals were judged to be of the same difficulty— average of the four median scores of pilot classes on pre-test was 23, the O_2 control classes 19, and the O_3 post-test 30. Instruction in agricultural chemicals for the pilot classes produced a gain of 18 points out of 100 on the post-test over the the pre-test. While the increase in average of the median scores of the O_2 control classes was only 4.

Summary

The five areas of agriculture in which units of instruction were included in the course of study and for which pre-tests and post-tests were given were:

Agricultural mathematics
Feeds
Seeds
Fertilizers
Agricultural chemicals

The gain in average of the median scores by the students in the pilot classes on the post-tests over the pre-tests after instruction is not impressive, as can be seen in the summary shown in Table 6.

TABLE 4
Results of Pre-Test and Post-Test in Fertilizers

Classes	School	Range in Scores on: Pre-Test Low	Pre-Test Median	Pre-Test High	Post-Test Low	Post-Test Median	Post-Test High
O_1	A	16	34	51	27	50	61
	B	20	34	88	38	47	75
	C	26	33	60	15	44	74
	D	23	36	70	38	66	80
	Average	21	34	67	29	52	72
O_2	A	29	41	69	30	43	67
	B	6	34	47	0	44	67
	C	30	40	49	52	63	80
	D	19	31	52	9	30	50
	Average	21	37	54	23	45	66
O_3	A				41	33	55
	B				11	39	50
	C				16	35	61
	D				19	38	44
	Average				22	36	52

TABLE 5
Results of Pre-Test and Post-Test in Agricultural Chemicals

Classes	School	Range in Scores on: Pre-Test Low	Pre-Test Median	Pre-Test High	Post-Test Low	Post-Test Median	Post-Test High
O_1	A	20	27	35	16	29	35
	B	12	22	38	25	40	75
	C	5	15	40	24	39	49
	D	15	27	37	42	55	73
	Average	13	23	37	27	41	58
O_2	A	12	17	42	15	23	49
	B	5	21	49	14	29	40
	C	12	20	34	18	25	36
	D	11	17	25	6	15	27
	Average	10	19	37	13	23	38
O_3	A				11	26	45
	B				7	34	41
	C				15	22	46
	D				6	37	48
	Average				10	30	45

TABLE 6

Summary of Pre-Tests and Post-Tests

Unit of Instruction	Average of the Median Scores in Four Pilot Classes on: Pre-test	Post-test	Gain
Agricultural mathematics	30	51	21
Feeds	32	58	26
Seeds	59	61	2
Fertilizers	34	52	18
Agricultural chemicals	23	41	18

Maximum possible score—100

The test scores are only one indicator of the abilities of students to perform effectively as an employee in an agricultural-supply business. Three or four of the post-tests were administered before many of the students had started working in the agricultural-supply businesses, which may have caused the students to feel that tests were academic and not as important as in other units of instruction such as human relations and personality traits, store skills, and salesmanship and selling.

CHAPTER V

EVALUATION OF PILOT PROGRAMS BY STUDENTS, COOPERATING AGRICULTURAL BUSINESSMEN, AND TEACHERS

As a part of the total evaluation of the pilot programs the students, agricultural businessman cooperating in the program, and teachers were asked to evaluate them. A separate evaluation instrument was developed for use by each group. Each group was asked to read each question carefully and to give an honest, objective answer.

Student Evaluation

Student evaluations were made with the teacher out of the classroom and with the students being told before the evaluation that the teacher would not know their individual comments. They were instructed to be fair and objective in their comments.

Student evaluation ranged all the way from most helpful, interesting and challenging where the programs were good, to not thinking much of the program in cases where students were not placed or were given only menial tasks to perform in their supervised practice experience.

Most students thought the course content was good; a few thought there was repetition of other years in vocational agriculture in seeds, feeds, fertilizers, and agricultural chemicals.

Favorable comments by students included:

1. The unit on human relations and personality traits helped us to understand people better
2. Learned to deal with the public and how to talk to people
3. Know what it is like to do hard work
4. Have a much better understanding of people
5. Learned responsibility
6. Learned how to stock a store and how to sell
7. Developed confidence in dealing with people
8. Developed sales ability
9. Learned to use equipment and machines in the store
10. Enjoyed this year much more than previous years
11. This has been a very busy and a most rewarding year
12. Learned more about what the future in agriculture holds for me

13. Gained valuable work experience
14. Of the three years of agriculture, this year I learned more and enjoyed it the most
15. This year of agriculture I had to study hard, but enjoyed it more
16. We have a better chance now to get a good recommendation for a job
17. Have more confidence in myself—I am a better boy
18. Helped me more than any other class I have taken in high school
19. Learned much practical knowledge I can use in my agricultural career
20. Learned to get along with fellow workers
21. Gained general knowledge of salesmanship
22. The instruction was top-notch
23. Learned how to meet and deal with all types of customers
24. Learned how to help people
25. Learned a great deal about agricultural supplies

Unfavorable comments by students included:

1. There were times when I was needed at home and the program interfered with my parent's plans
2. One dollar an hour is not much pay for labor
3. The program is too short
4. No concern for student success on part of the teacher
5. It was a waste of time because of the way it was taught
6. Did not get the job I thought I would
7. Had to get up early and the work was hard
8. Thought the class instruction was boring
9. Did not have time to study
10. Must be taught with more scholastic interpretation
11. Teacher should work with all students not just a select few
12. Did not make enough money to pay expenses

It is felt that most of the unfavorable comments would not have been made had the individual students and their parents had a thorough understanding of the program— the purpose of the program, how it was set up, and how it was to be operated.

Evaluation by Cooperating Businessmen

The great majority of the cooperating agricultural businessmen

were very pleased with the program. Only one of the sixteen cooperating employers, responding to the questionaire, felt that his trainees were not an asset to his business and not worth what he paid them. Thirteen of the cooperators rated their trainees "better-than-average" employees compared with others of similar backgrounds. Fourteen of the cooperators thought their trainees were excellent prospective employees.

Of the sixteen cooperating employers responding to the questionaire, 13 or 81 percent, felt that a student should have 50 or more hours of work experience before a rush season; 13 or 81 percent, felt that a student should have 200 hours of work experience to prepare him for "job entry;" 10 or 62 percent, felt that it was good to develop a memorandum of understanding among all parties involved—the student, the parents, the teacher, and the cooperator; 11 or 70 percent, of the cooperators said joint conferences involving the student, teacher, and cooperator were held, and they felt these to be helpful; 14 or 87 percent, of the cooperators felt that students should be observed and supervised by the teacher once a week throughout the training period; 2 or 13 percent, thought the supervision should be left up to the employer; 13 or 81 percent, of the cooperators said the teachers worked with them on developing an understanding of the program and of the kinds of experiences they would like the students to get; and 7, or 50 percent, said the teachers kept them informed of what they were teaching the students in class.

The cooperating employers rated all units of instruction except three, as "important." The three units: 1) agricultural mathematics, 2) human relations and personality traits, and 3) salesmanship and selling were rated "very important" by 13 or 81 percent, of the employers.

Favorable comments by cooperators included:

1. Valuable experience getting to meet and handle people in a business atmosphere
2. Good instructor to work with
3. Instructor was very interested in the students
4. Program is very good
5. The whole program is strong

Unfavorable comments by cooperators included:

1. We had a considerable amount of damage from breakage
2. Work hours should have been better arranged
3. Students need to be more confident and less afraid to meet the public

4. Penmanship very poor
5. The students are too young and immature to put in responsible positions
6. The industry should participate in the class instruction, on what industry expects of its employees

It is reasonable to assume that most of the reasons back of the unfavorable comments can be eliminated in programs by careful preparation of students for their supervised work experience and by developing a good understanding of the program on the part of cooperators.

Teacher Evaluation of Programs

The four pilot teachers thought the program of preparing students for jobs in agricultural-supply businesses was good. They felt a need for more time to prepare and develop lesson plans and instructional materials, to arrange for adequate training stations, and for supervising the work experience of students.

In deciding whether or not to start such a program they were asked to rate the importance of working with school adminstrators, guidance counselors, agricultural business concerns, parents of prospective students, and prospective students. Their rating of the need for working with all groups named ranged from "important" to "very important."

Three out of four teachers thought it was "important" to "very important" to: 1) discuss the program with counselors, and 2) to keep counselors abreast of the program throughout the year. Three teachers out of the four did not think it was important to have counselors help select students for the program.

All teachers thought it was "important" to "very important" to hold meetings of parents of students to secure an understanding of the program. They also thought it was "important" to work both with students and parents at home to further develop an understanding of the program.

Advisory committees were helpful. The teachers felt that their committees were "important" in: 1) securing understanding of the program, 2) determining course content, 3) securing stations for work experience, 4) establishing employer relations, 5) developing public relations, 6) securing interest of school administration in the program, 7) establishing working hours, wages, and work responsibilities of students.

The teachers felt it was "very important" to work with the employers both individually and in groups in developing the training stations.

By developing training stations is meant securing a complete understanding of the program and the kinds of supervised work experience desirable for students to participate in, with increasing responsibility and difficulty.

All teachers thought it was "very important" for the teacher to carefully prepare students for their interviews by working with them in class on how to dress, how to talk, how to handle themselves during the interview, and what to do in terms of follow-up. The teachers did not think it was good to let each student, on his own, select some place to work and apply. They felt it was "important" for the teacher to arrange for acceptable training stations. Two teachers felt that students should select the places they desire to work, out of an approved group of agricultural businesses, and then apply. The other two felt that the teacher should decide the place where he thinks each student would work best. All four teachers felt it was "very important" that cooperating employers select the students they want to work in their businesses.

Three of the four teachers felt that 200 to 300 hours of supervised work experience was adequate to prepare students for "job entry" in agricultural-supply businesses. One teacher felt that 100 hours would be adequate if the experiences were carefully selected and supervised by the cooperator. The teachers varied in their opinions as to number of hours a student should work in a business in order to get oriented and acquainted with the job before a "seasonal rush." The range was 20 to 40 hours, for an average of 30 hours.

Of the 40 students enrolled in the four pilot programs during the full year of piloting: 39 or 97 percent, received some work experience; 31 or 77 percent received adequate experience in the several jobs in the business (or departments) in which they worked; and 8 or 20 percent of students performed routine or menial tasks most of the time.

The teachers felt that each student should, after getting oriented to his job, receive one hour of supervision for each 20 to 30 hours of work experience. The teachers also felt it was important to hold joint conferences with the student and employer. However, they admitted that in some cases they had conferences with the employers at the store and then in turn followed with a conference with the student at school.

The evaluation form used to evaluate the student work experience by both the teacher and the employer, independent of each other, was adequate.

Teaching procedure differed with the teacher. A breakdown of the time different procedures that were used follows:

Testing Procedures Used	Percent of Time used by the Four Teachers			
	#1	#2	#3	#4
Problem solving	75	60	60	20
Demonstrations	10	15	10	25
Resource people	5	—	10	5
Rehearsing	5	15	10	20
Role playing	5	10	10	30

Most of the units of instruction were rated good. The five student self-evaluation forms were rated good. The record book used by students was adequate for the particular kind of work experience program in which the students engaged.

In response to effect of program on other school work, the responses were: no noticeable change in 10 or 25 percent of students; some improvement in 9 or 22 percent of students; and marked improvement in 21 or 53 percent of students. In response to question on the effect of program on personality traits: one student showed no noticeable difference; 15 or 37 percent, some improvement; and 24 or 60 percent, showed marked improvement.

Summary

The overall evaluation of the pilot programs in agricultural occupations which had as their purpose training 12th-grade students for "job entry" in agricultural-supply businesses was very favorable. The few unfavorable comments on the part of students and cooperating employers can probably be attributed to weaknesses in developing a good understanding of the program on the part of the students, parents, and cooperators of the purpose of the program, how is was set up, and how it was to be operated.

CHAPTER VI

SUMMARY AND CONCLUSIONS FOR PILOT PROGRAMS IN AGRICULTURAL OCCUPATIONS—SALES AND SERVICE

The pilot programs were conducted to learn how to conduct effective instructional programs in nonfarm agricultural occupations—to get the answers to important questions in organizing and conducting programs in agricultural occupations to prepare 12th-grade students for "job entry" in agricultural-supply businesses, area of sales and service. The people in agricultural education and the agricultural industry are concerned with the problem of preparing young men for jobs in the broad field of agricultural occupations.

As a result of the pilot programs: 1) opportunities, responsibilities, and procedures for organizing and developing programs in this area of agricultural occupations are more clearly seen, 2) general impressions are confirmed or disproved, and 3) new problems for study are brought out which should be useful to teachers and school administrators in developing programs to prepare young men for employment in agricultural-supply businesses— sales and service.

General Summary

In initiating the four pilot programs it was decided to have them all the same, insofar as possible. Twenty-three major questions were listed for answering. The questions and the resulting answers were:

1. How decide whether or not to start a training program in a nonfarm agricultural occupation in a given school?
   —Determine the opportunities for supervised occupational experience in a special area.
   —Determine the number of students that are interested in the area of specialization under consideration.
   —Determine the interest of school people in the program.
   —Determine the interest of the teacher and the time he will have to devote to the new program.
   —After securing information on the above four points, a decision can be made.
2. How conduct surveys of training possibilities, job opportunities, and competencies needed?
   —A simple 3-page survey instrument was developed to determine training possibilities and job opportunities. The survey can be

administered to the manager of an agricultural business in 15 minutes when the interviewer is thoroughly familiar with the survey form.

—A simple instrument was developed for determining the competencies needed in six areas: seeds, feeds, fertilizers, agricultural chemicals, business, and general competencies. A bulletin entitled: *Competencies needed by Employees in Agricultural-Supply Businesses—Sales and Service,* Department of Agricultural Education, University of Kentucky was published as a result of a study made in the state.

3. How organize and use an advisory committee?
   —Copies of *Vocational Advisory Committee* published by the American Vocational Association, Washington, D. C., were secured and used. This publication proved to be very helpful.
   —Procedures, membership, and uses made of advisory committee are given on page 24.
4. How work with guidance people in enrolling students in the training program?
   —Guidance people were in on planning the program in each school and therefore had a good understanding of the program from the start.
5. How secure parent understanding of the program?
   —Some teachers brought the parents together for a meeting to explain the purposes of the new program and to make clear the responsibilities of the students, the parents, the teacher, and the cooperating employers.
   —Other teachers visited the homes and discussed the same matters with the parents.
   —One teacher had a group meeting of parents followed by a discussion at each student's home with the student and his parents.
6. How develop good training stations?
   —A training station is developed on the basis of securing a good understanding on the part of the cooperator of what the program is designed to do and how it is to be carried out. When the understanding is clear, cooperation comes naturally.
   —A group meeting of cooperating employers proved very helpful in developing an understanding of the program and in clearing up the responsibilities of the teacher, the student, the parents, and the cooperators.
7. What kind of students are "cooperators" interested in helping to train?
   —Cooperators desire clean cut, neatly dressed, clean shaven,

courteous, energetic, prompt students, who will keep their hair cut short.

–They desire students of average intelligence or above, who are willing to work.

–For the area of agricultural-supply business– sales and service, a vocational agriculture background in crops, animals, soils and fertilizers is considered very helpful.

8. What procedure should be used in placing students in training stations?

–In all cases the teachers arranged with cooperators for the training stations and had the students make arrangements for interviews. Interviews were held after the students had received instruction and practice in being interviewed at school.

–Some teachers paired the students off with the businesses (the work stations) and the students made arrangements for interviews; other teachers had students select where they desired to work and the teacher made arrangements for interviews.

9. How much work experience should be provided during a full school year?

–First thinking was in terms of 100 hours of supervised work experience per semester for a minimum of 200 hours per year.

–It was learned that the work experience had to be provided at a time convenient to the individual cooperators—–which was when "business was moving"– during their peak sales seasons.

–In most of the businesses a small peak occurs in the fall– September and October; for some, another peak occurs in December. For most agricultural-supply businesses, the big peak starts in February and extends into June. Most students did the greater part of their supervised occupational experience during the spring (second) semester. It is felt that 200 hours of good work experience is adequate to prepare a student for job entry.

10. What kind of work experience agreements should be made?

–It is felt that there should be a memorandum of understanding developed in which the:

–Student states, on paper, what he agrees to do.

–Parents state what they agree to do.

–Cooperator makes clear what he will do.

–Teacher states what his responsibilities are.

11. How develop a course of study to meet the needs of students who are preparing for "job entry" in agricultural-supply businesses?

–This was not a simple matter. However, this procedure was followed:

—Units of instruction were determined— partly based on six areas of abilities needed.
—Objectives for each unit were determined.
—Time required to deal with each unit was determined.
—On a subjective and seasonal basis, the time of the year to deal with each unit of instruction was determined.
—The course of study, as set up for the pilot programs, is shown on page 25.

12. What teaching materials are needed for the programs?
—Units of instruction, see pages 24 and 25.
—Equipment for a class includes three pairs of scales, three cash registers, an adding machine, three sales-ticket boxes, a tape recorder, an overhead projector, six or eight shallow peg-board shelves to go on the walls of the classroom, two large shelves, and a sales counter.
—In addition, all kinds of agricultural supplies which are sold in the stores where the students work.

13. How teach the class in agricultural occupations?
—A modified problem-solving procedure can be used with students making notes and developing various kinds of charts for use in the businesses where they work.
—Demonstrations by the teacher and students are fundamental.
—Role playing which is taped and played back is most helpful in preparing students for interviews and in practicing greeting customers, making sales approach, and in suggestive selling.
—Many transparencies should be developed and used.
—A breakdown of the time used with different teaching procedures is shown on page 40.

14. What kind and amount of supervision should be provided by the teacher? By the employer?
—The more successful teachers visited the stores and talked to the cooperators and observed the students' work every day for the first week, ranging from 15 to 20 minutes. The teachers simply asked the cooperators how the students were doing and what things they should work with the students on. They did not interfere with the work of the students. The next day at school the teachers complimented the students and offered constructive suggestions. The cooperators liked this method of supervision by the teachers.
—The cooperators supervised the students while they were on the job.

15. What records should be kept by the department?

—A permanent record card published by Interstate Printers and Publishers entitled *Record in Vocational Education* is suggested. It is quite adequate. There are places for recording such things as: occupational objectives, scores on standard school and vocational tests, record of courses taken, record of supervised occupational experience— place, hours, earnings, and teacher and employer evaluations.

—The record card includes a place for evaluating characteristics of the student when he completes the training program. As a final part of the record there is a place for recording the student's employment and further schooling for five years.

16. What type of student can profit from this kind of a training program?

—An average student who has a genuine interest in the program, who is willing to work, who is neat, tidy, clean, is well groomed, and who is prompt and courteous can succeed in the program.

—A good teacher can go a long way in developing most of these to a satisfactory degree.

—A student who has a good farming program should not be enrolled in a specialized class of this kind because the supervised occupational experience will come at a time when he will be needed to carry out his farming program or help on the home farm.

17. What kinds of work experience are practical in agricultural-supply business for 12th-grade students of vocational agriculture?

—Practically all jobs in the average agricultural-supply business (except management and contract services) ranging from cleaning the store and stocking shelves to waiting on customers, including recommending varieties of seeds, fertilizers, feeds, and chemicals to control insects, weeds, and diseases. Students should start working at the less skilled jobs and be provided jobs of increasing responsibilities and complexities as they develop.

18. What records should be kept by the students?

—The record book: *Records for Supervised Occupational Experience and Training in Vocational Agriculture,* printed by the French-Bray Company is satisfactory. It provides a place for planning the work experience program and recording the jobs and responsibilities carried out, the placement agreement, record of work experience, wages received by months, and a place for summarizing the work experience program.

19. What effect does the training program have on other school work, general attitude, and personality?

—School work in other subjects did not suffer. In most cases more interest was shown.

—General attitude was good. Where the teachers really worked with the students and the cooperators the attitude of the students was excellent.

—Personality of most students improved. They developed poise, a feeling of confidence in meeting people, and in general, were pleased with their development in the area of human relations.

20. How evaluate student progress in the training program?

—Each cooperator evaluated his student employees on a check-sheet form after 20 hours of work, after 50 hours, and again after 200 hours. Also, the teacher used the same form and evaluated each student at the same work intervals.

—Teacher observations and general feelings were also used in evaluation.

21. What effect does this type of training program have on the students in the first three years of vocational agriculture?

—Nothing can be said for sure. However, where the teacher does a good job students are attracted to the program and enrollments have increased.

—In one school, enrollment went from 38 students and one teacher to 108 students and three teachers in three years.

22. How valuable are the first three years of vocational agriculture as a prerequisite for training in agricultural-supply businesses?

—For this particular area of specialization the first three years seems to be very important. In the first three years students get their basic instruction in crops, animals, soils and fertilizers, and agricultural chemicals which constitute a foundation for sales and service work in agricultural-supply businesses.

23. How successful are students in getting and holding jobs after completing the training?

—Where the training was good some students stayed on as employees through the summer and longer; some students went on to take technical courses in agriculture; and others went to college to become professional men in agriculture. In September following the pilot period ending June 30, 1965, of the 20 students who participated in the program at Reidland during the 18 months, eight had enrolled in college to study agriculture, seven were employed in agricultural-supply businesses, two were doing custom work for farmers, two were in the armed forces, and one was enrolled in an area vocational school.

For the most part, the students enrolled in the pilot classes were

those who had limited farming programs. In three schools where pilot programs were conducted the 12th-grade students who had the limited opportunity for farming programs and establishment in farming were put in the pilot classes. The other students of vocational agriculture continued in the regular program of vocational agriculture.

Table 7 shows the employment (or other) status, in November, 1966, of students enrolled in the pilot and control classes for the school year 1964-65. Even though the evidence is not conclusive, there is a strong indication that the program encouraged a number of students to enter college and study agriculture. Nine or 23 percent of students in the pilot classes compared to an average of 15 percent for all students in pilot and control classes entered college to study agriculture. Eleven percent of students in pilot programs entered colleges (other than agriculture) compared to an average of 14 percent of all students. Twelve percent of students enrolled in pilot programs, compared to 4 percent of all students, entered agricultural occupations.

Conclusions

The findings from the pilot programs reveal that programs of systematic instruction in agricultural occupations for 12th-grade students of vocational agriculture can be successfully conducted to prepare students for "job entry" in agricultural-supply businesses— sales and service or for entry in an advanced educational program.

Students of vocational agriculture, parents, and school administrators are interested in training in agricultural occupations. Agricultural businessmen will cooperate in developing a training program. Teachers of agriculture can be trained to initiate and develop good programs of instruction.

Some conclusions on specific points in developing a program to prepare students for employment in agriculture-supply businesses include:

1. The school administration should be in on planning the program from the start.
2. A minimum of 200 hours of supervised work experience is needed to prepare students for job entry.
3. Working hours for students should be in minimum blocks of three hours.
4. That the time of year for supervised work experience should be at the convenience of the cooperating employers— when business is moving.
5. Students should be selected in April of junior year, for program

TABLE 7

Employment (or other) Status of Students 18 Months After Completing a Full Year in the Pilot Programs

Classes	Number of Students	Occupational (or Other) Status													
		Farming		Agriculture		Other College		Agricultural Business		Armed Service		Industry		Other	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Pilot O_1	40	6	15	9	23	3	7	5	12	10	25	7	18		
Control O_2	50	12	24	3	6	7	14	1	2	14	28	10	20	3	6
Control O_3	61	4	7	11	18	12	20			14	23	15	25	5	7
Total	151	22		23		22		6		38		32		8	
Percent			14		15		14		4		26		22		5

the following year, in order to determine the work hours required by the cooperating employers and to prepare student class schedules to meet the needs of the cooperators.

6. The class in agricultural occupations should be scheduled from 11 a.m. to 12 noon or from 12 noon to 1 p.m., in order that some students may work in the mornings and others in the afternoon.
7. The cooperating employers want the teacher to supervise the students by observing them work in the businesses and to counsel them later at school or elsewhere.
8. Cooperating employers will provide students with increasing responsibilities when they understand the program and where the teacher works closely with them.
9. The students, if properly trained, will be definite assets to the agricultural businesses.
10. Memorandums of understanding should be developed and agreed upon by the teacher, students, parents, and employers.
11. A thorough understanding of the program on the part of students, teacher, parents, and cooperators is a must if the program is to succeed. Here are four events that indicate a need for a good understanding of the program:

A. One teacher made arrangements with a cooperator for a student to have an interview (unknown to the student). The teacher had the student call on the man. The student went to the store, and having forgotten the name of the man he was to see, asked a helper if they had a job opening. The helper said there was no job opening—that there was not enough work to keep the present help busy. The student came back to class the next day and said to the teacher, "There is no job at that store." So the teacher analyzed what happened and they started all over.

B. One student was placed in an excellent agricultural business. His parents bought an extra car so he would have transportation. When he got the car, he got a girl; when he got the girl, he felt obligated to take her off the school grounds for lunch. This was against school policy and he was expelled. In order to get back in school he had to ride the bus to school; thus he had no way to get to work and he lost the job. When the teacher contacted the cooperating employer and asked if he could use another student the answer was, "I believe not." Thus, the use of a good work station was lost.

C. One Saturday in a Southern States store the assistant manager was in charge. He told a student to load a truck. The student said, "I won't do it, you didn't hire me." Thus, this training station was lost.

D. One teacher let two or three students enroll in his special class in sales and service who had good farming programs and whose dads were operators of good-sized farms. His feeling was it would be good for them. As a result when things "got moving" on the farms the students were needed there, and this was also the same time the cooperators had really planned to make effective use of the students. Thus a problem emerged which hurt the teacher's relationship with these cooperators.

18. Where there are five or more good agricultural-supply businesses located in the patronage area of the school, it is felt that they can be developed to provide adequate work experience for 10 or 12 students (a class), with good understanding of the program and proper scheduling of the class.
19. Programs in agricultural occupations— sales and service will result in many students becoming effective employees in agricultural businesses. Other students will discover a new and broader interest in the field of agriculture and go to a technical school or to college and prepare for a professional career in agriculture.
20. Teachers who are to develop programs in agricultural occupations, dealing with sales and service, should receive specialized training before launching such programs. Professional people in distributive education should be used in providing the specialized training for teachers.