A STUDY OF THE ASSOCIATION BETWEEN THE SCOPE OF THE SUPERVISED FARMING PROGRAM OF HIGH SCHOOL STUDENTS OF VOCATIONAL AGRICULTURE AND THE STUDENT'S IMMEDIATE POST HIGH SCHOOL ENDEAVORS

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CHAPTER I

THE PROBLEM

Introduction

The early vocational acts limited instruction in agriculture to those who "have entered upon or are preparing to enter upon the work of the farm." The Smith-Hughes Act also specifically provided "that such schools shall provide for directed or supervised practice in agriculture, either on a farm provided for by the school or other farm, for at least six months per year."

For a period of more than one-third of a century, and particularly since the passage of the Smith-Hughes Act of 1917, supervised farming has been considered not only a vital part but central to instruction in vocational agriculture in secondary schools.

Those who developed the Smith-Hughes Act entertained a concept of 'supervised practice' as broad enough to include many of the work experiences undertakings which may have developed since that time. They stressed a 'learning by doing' approach and confidently expected that this would prevail in all areas of vocational education in agriculture.

The term 'supervised practice', as originally used, could well be understood as including practice in our school agricultural-mechanics shops, practice in cooperation and leadership within chapters of Future Farmers of America, and practice in speaking on agricultural subjects or in using parliamentary procedures in group or community meetings.

However, activities of supervised practice directly related to farming have comprised the bulk of and perhaps the vital part of vocational education in agriculture.

Analyses of census data and other information clearly reveal that the number of farmers in the United States has been declining at a steady rate since the beginning of World War II, and that farms are growing larger, becoming more mechanized, requiring much more costly financing, and demanding ever increasing abilities in management by those who survive in the business of production agriculture. However, the general public is not as well aware of the fact that more of the work in agriculture is now being done by specialists and there are many persons whose work requires agricultural knowledge in order to effectively perform tasks in those industries that process, market, manufacture, distribute and retail supplies and products produced and used on the farm. The fact remains that while farms have become fewer and larger, the number of agriculturally trained workers needed to fill non-farm jobs have correspondingly greatly increased.

Many studies reveal that for some time only about one-third of high school graduates in vocational agriculture actually enter farming, while about one-fourth have been attending college in preparation for professional work in agriculture. The remainder have entered non-farm agriculture occupations, non-agricultural occupations, the armed forces, or are deceased.

The challenges of change were laid before us with the vocational education act of 1963 which included an amendment to the George-Barden and Smith-Hughes Acts which broaden the base of instruction in vocational agriculture. A key statement in the Act is that 'any amounts

allotted (or apportioned) under such titles, Act or Acts 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 of the farm or of the farm home, and such education be provided without directed or supervised practice on a farm'.

The amendments have followed suggestions outlined by the President's Panel of Consultants who, during 1961 and 1962, reviewed the entire program of vocational education. In the amendment, the Congress recognized many of the changes that have come about in the agricultural establishment and economy since the Smith-Hughes Act was passed in 1917. The vehicle of change has been provided, but change only for the sake of change must be challenged. Only through application of wisdom tempered by application of experience may we prevent radical adjustments that may actually thwart rather than enhance opportunities for individual action and self-advancement and perhaps discourage hope for reasonable success.

Nature of the Problem

The Purpose of the Study

The central purpose of the study was to determine if possible association might exist between the nature and extent of the individual supervised farm training program in vocational agriculture and the students immediate post high school endeavor.

A perfunctory examination and observation among professional workers in vocational agricultural education has, for several years, seemed to indicate that, nationwide, somewhat less than one-third of high school graduates in vocational agriculture actually entered

farming. However, an increasing number of graduates do continue preparation for professional work and employment, both in agricultural and non-agricultural occupations.

Since, in general, these students continue to meet the supervised farm training requirements of the earlier Smith-Hughes and George-Barden Acts, it is hoped a current study of their completed activities up to high school graduation will provide some basis for revision and establishment of a curriculum for those currently enrolled and those to be enrolled in future high school vocational agriculture classes. It is a further expectation that discovery of such association as is indicated in the study purpose will suggest means for better student retention in the vocational agricultural program. A further possibility would be that of enhancing provisions for those completing the high school program to have better opportunity to achieve their immediate goals and objectives.

Procedure

A random selection of sixteen school areas in the northwest district of vocational agriculture in Oklahoma was made. This comprised slightly more than 20 per cent of the vocational agriculture departments currently operating in the district.

Follow-up studies of all 109 students either graduating from or dropping out of vocational agriculture classes in these selected departments, were included in the study. The students' individual labor income and closing inventory values for 1964-65 were determined as well as his occupational status within the year immediately following graduation from high school or dropping from the program. Three

classification groups were established. These were established as differential for the upper one-third, the median one-third, and the lower one-third of student accomplishment in terms of total labor income and closing inventory values of supervised farm training program, for the year 1964-65.

An attempt was then made to determine possible association existing between the high school graduates' or dropouts' average labor income and inventory values of their total supervised farm training program and their immediate endeavors following graduation. These endeavors were classified as follows: (1) establishment in farming, (2) establishment in agricultural occupations, (3) establishment in non-agricultural occupations, (4) pursuit of studies in post high school and higher education--(a) agriculture, (b) non-agriculture. Further classifications included (5) dropouts from vocational agriculture classes, and (6) entrance into armed services and ranks of the unemployed.

Variables Considered

Even though the variables of inventory value and labor income are, in general, dependent upon each other, they were tested separately in the study. Many dependent variables such as opportunities for farming, types of farming, geographic location of home community related to college location, characteristic of vocational agriculture teacher, total financial conditions and many more personal and situational variations could not be appropriately and effectively separated within the limitations of the study. An effort was made to offset these factors by including in the study all students characterized in various ways

in the respective school district involved. It was felt that this would tend to effect at least a limited control of such variable factors and thus tend to offset their effect upon data tested.

Hypotheses Tested

The major hypothesis of the study was formulated to imply expectation of a significant difference between groups of students following various selected post high school endeavors and the extent of their total supervised farm training program in terms of inventory value and labor income. Acceptance of such an hypothesis would possibly imply that an acceptable extensive total supervised farm training program not only tends to increase the number of students established in farming, but also contributes to the establishment of the individual in other worthwhile endeavors such as an agricultural business or professional occupation. Some possible association might also be established implying the value of extensive supervised farming programs in effecting student retention in vocational agriculture classes.

The hypotheses listed in this study were formulated as null hypotheses. This was done in order to facilitate testing by application of appropriate statistical treatment. They were combined into the following statement:

> Between students having successfully completed acceptable extensive supervised farming programs and students having completed less acceptable and less extensive programs, significant differences do not exist regarding their immediate post high school endeavors as follows;
>
> (1) establishment in farming

(2) establishment in non-farm agricultural occupations

(3) pursuit of studies in post high school and higher education

(4) ceasation of high school studies prior to graduation.

Treatment of Data

After data were obtained and tabulated, they were then subjected to both statistical and non-statistical techniques. The "Chi-square" statistical treatment was used in testing the formulated null hypotheses. The level of significance established as required for rejection of null hypotheses was set at the five per cent level. As a non-statistical technique percentages were calculated and recorded for purposes of analysis.

Definition of Terms

The term "supervised farm training program" refers to farming enterprises conducted by the student during the year and recorded in his permanent record.

The term "total closing inventory value" refers to the total dollar value placed upon the inventory of farming assets owned by the student at the close of the year.

The term "post high school" refers to the period of time elapsed or activities engaged in by the student subsequent to graduation from high school.

The term "higher education" refers to any type or kind of formal training received or being received by the student above and beyond the high school level.

The term "drop outs" refers to those former students not graduating from high school. These students were previously enrolled but were not enrolled in high school vocational agriculture classes at the time the study was conducted.

The term "post high school endeavor" refers to the major gainful activity engaged in by the student immediately after high school graduation.

The term "non-farm agricultural occupation" refers to any occupation not conducted on the farm, but inclusive of endeavors of an agricultural nature or those associated with farming. In general, such an occupation would not be classified as production agriculture but more inclusive of activities of servicing, distribution, or marketing.

The term "farmer" or "farm operator" refers to a person who operates a farm, either doing the work himself or directly supervising the work being done. Farm laborers are included in this definition.

CHAPTER II

REVIEW OF LITERATURE

Introduction

In recent years agriculture in the nation has changed in a startling fashion and at amazing speed. Berg (1) indicates that the function of agribusiness has grown so rapidly that six million people now make a living in handling and processing farm products of seven million farmers and farmworkers. There are another 13 million people engaged in servicing, supplying, and producing for farmers and in the distribution of farm products. Altogether these forces make up 40 per cent of our total work force in this country.

Many agricultural communities have become town-country communities with diversified interests. In light of these changes, timely adjustments must be made in our objectives and instructional programs in vocational agriculture if we are to meet the educational needs of present-day agriculture and the needs of youth and adults who will live and work in rural areas.

Since most of the information pertaining to this problem is current in nature most of the literature reviewed will be in professional journals, theses and statistical composites of recent publications. They have been grouped into the following categories for analysis in this study:

Developing Modern Agriculture Programs

Studies Relating to Occupational Choice

Related Studies

Summary

Developing Modern Agriculture Programs

Campbell (2) recognized that fewer students can enter the occupation of farming, but an increasing number of rural boys will look for employment opportunities offered in off-farm occupations and related fields. Therefore, the objectives in the vocational agriculture program have been broadened to encompass the broad field of agriculture which includes: (a) the processing and marketing of farm products; (b) farm production; and (c) the providing of services and supplies for the farmer. A study by Campbell (3) and Staff in Virginia indicated over 62 per cent of all former students of vocational agriculture were employed in some phase of agriculture or related occupations.

As a result of this study, a "Guide for Developing the Instructional Program for Vocational Agriculture in Virginia" was prepared and distributed throughout the state. This Guide offered suggestions for developing the instructional program by years up to five years, and including programs for young and adult farmers. Special emphasis is given to certain basic units of instruction which can be applied not only to farm production but also will prepare youths for responsibilities in other agricultural careers, agricultural college entrance, and other work requiring competence in agriculture.

With respect to current requirements in the area of supervised farming, more consideration will be given to work experience on commercial farms, particularly for students who have limited opportunities

for conducting farming programs at home. Other students may receive work experience in an area of agriculture other than production in keeping with their major interest and goals.

Novak (4) asserts that within the field of agriculture itself there is a wide latitude in careers with many levels of skills, aptitudes, and education. The high school agriculture teacher must make available to his own pupils, to the student body as a whole, faculty, parents, and community, information on the hundreds of agricultural and agriculture-related occupations, together with information on agencies and institutions providing further training.

Bentley (5) found in his study, "Significantly more freshmen were influenced by teachers of agriculture than by any other professional person."

In an article by Ebbert, Clouse, and Darby (6) it was emphasized that young people must be regarded constantly, not only as future agriculturists, but as individuals with hopes, aspirations, emotions, and needs.

Throughout the automated instruction movement its devotees have ignored this complexity of the organism with whom we are working--the human learner. The human organism is not only inherently variable, but is constantly in search of variability in his environment, sometimes for more, some times for less. He is curious. To present him with a sequence of steps, each of equal size, each equally demanding, or understanding, each structered so he is "right" will virtually guarantee his boredom. And when he is bored, he quits.

"How should we train the young men who will farm in the year 1980?" Lange (7) reports this as the question which the Faculty of Agriculture

at the University of Manitoba attempted to answer when he redesigned its "Diploma Course in Agriculture" in 1958. This course, established in 1906, was the first formal agriculture course in Canada west of the Great Lakes. At present, students enroll for two six-months periods and a "Diploma in Agriculture" is granted by the University following the successful completion of the course. Seventy-three students were enrolled in 1963-64.

The immediate objectives of this course are:

1. To train mature young men, possessing ability and a genuine interest in farming, in the skills necessary for successful farm management and for community leadership.

2. To give these men as broad and basic a training as possible, thus preparing them to meet the change and challenges of the future more effectively.

In this way, it is hoped that the broader objectives of the course may also be attained; namely, that the agricultural community and industry may be assisted and strengthened for the benefit of the nation as a whole.

Production information remains important in any agricultural course. It must, however, be integrated in a realistic way and tied to the farm of the student.

In order to achieve these ends, the students in the Diploma Course are first exposed to basic courses in plant, animal, soil and mechanical sciences, and to the principles of farm business management and sound decision-making. This information is then coordinated in a course in "Farm Business Planning" taught jointly by staff members of five faculty departments.

This course utilizes the farm business records and a land-use mapping obtained from each student for his own farm. In his farm plan, which constitutes the final assignment of the course, the student must justify his management recommendations and defend them orally before a committee of instructors. This might be likened, in some way, to the "orals" of a graduate student, since much of the information gleaned in this course is focused on this assignment.

The close involvement of the parents in this part of the course is a distinct advantage, since it bridges the gap between the two generations, maintains interest and facilitates the implementation of new ideas.

Landon's study (8) reported a need for changes in curriculum for teaching non-farm students.

> This study recommended considering non-farm students for enrollment providing they were willing to develop adequate experiences in farming or related occupations. Such experiences could be obtained through farming programs on farms of relatives or cooperative farmers and through use of small acreages for specialized intensive crop projects. The study also urged that special efforts be made to involve all non-farm students in FFA activities to supplement their experiences in vocational agriculture, and that teachers be enabled more readily to exchange ideas on how the instruction of non-farm students might become more effective.

McKenzie (9) reports that through the Manpower Development and Training Act of 1962, the state of Nebraska and surrounding states make agribusiness training a reality. First, thousands of farmers are leaving the farm each year, primarily because of economic conditions. Second, vast numbers of agriculturally related industries in the Midwest are in need of entry-level trained personnel. When those two factors are equated, it takes little imagination to see what may provide a partial solution to the urgent problem that exists.

The courses of study are developed jointly by various members of the State Vocational Education Department, the Vocational Education Department of the Lincoln Public Schools and the industries involved. No effort is made to identify these programs with a pre-existing structure of vocational education.

During the first eight weeks all trainees are given a broad basic background in those skills which appear to be common to all agribusiness occupations. This includes work in business practices, business arithmetic, record keeping, interpersonal relations, business English, and study in such areas as feeds, fertilizers, chemicals, and crops. If necessary, the student is given the basic education skills which will allow him to pursue a vocational skill. During this time students are tested, given extensive individual counseling and directed toward that occupational skill which seems to best suit their talents and interests.

There are no laboratories or shops at the Agribusiness Training Center. After hundreds of contacts with employers in and around Lincoln, all students are placed in the industry for varying lengths of time. Employers and instructors work closely to develop those experiences necessary to make the trainee employable. Thus the shops exist, but in the industry. This program is highly experimental as well as highly flexible, however it still contains the "work experiences" of many former programs.

Jones (10) discusses the problem of educating farm boys in his editorial. The outlook for farm boys is a direct challenge to education. Modern farming is a highly specialized, complex business. It is clear that the nation will need more--not fewer--well trained, efficient farmers. A premium will be placed upon farm managerial ability in the

next decade. Flexibility and knowledge will become more important. A key test of a good farmer will be his ability to adapt quickly to changes in technology and economic conditions.

This educational challenge is directed primarily toward the Land-Grant colleges and vocational agriculture. A thorough examination needs to be made of the educational needs not only for those going into farming, but for those who will be dispersed throughout the economy. Special emphasis should be given to the type training needed for jobs in businesses related to agriculture.

Stenholm (11) found in his study:

> Twenty-seven per cent of the graduates were employed in occupations classified as professional; 19 per cent were in sales and clerical; 20 per cent were in nonmanufacturing; 10 per cent were farming; 6 per cent were in managerial or office; 4 per cent were business proprietors; 3 per cent were foremen; 3 per cent were in agriculture-related occupations; 2 per cent were in semiprofessional occupations; 2 per cent were in the armed services; 3 per cent were students; and 1 per cent were making the military a career.

A corresponding study by Jones (12) in Ohio found:

> The occupational status showed 35 per cent of the 144 graduates were employed in nonfarm occupations; slightly over 26 per cent were full-time farmers; 17 per cent were part-time farmers; 13 per cent were engaged in farm occupations; 6 per cent were attending college; and 2 per cent were serving in the armed forces.

Studies Relating to Occupational Choice

Students electing vocational agriculture may not necessarily pursue it after graduation. They may shift majors before finishing school, since some change is inevitable as pupils mature. The agriculture teacher needs to provide reliable information that will lend to the making or revising of choices.

Perhaps the most influential research in this area was done by

Ginsberg and Associates (13). Although other researchers do not agree with every detail, the Ginsberg study has been found valid and is generally accepted as a sound basis for assisting young people to make their occupational choices. The study suggests that occupational choice progresses through three periods with ages and stages, "Fantasy Choices age 6-10, Tentative Choices age 11-17, Realistic Choices age 18."

Research in the area of vocational maturity is closely related to the area of occuaptional choice. In fact, maturity is one of the major factors in occupational choice. The research done by Super and Associates (14) on vocational maturity says:

> Making vocational decisions and adjusting vocationally are processes--that is, they are a series of related behaviors rather than a limited number of discrete acts, and are behaviors which change with time, generally in the direction of increasing complexity and greater specificity.

Little (15) of the University of Wisconsin reports "a surprising agreement" between occupational hopes expressed by Wisconsin's 1957 male high school graduates and their attainment at the age of 26. He studied 4,200 (about one quarter) of the state's male graduates of eight years ago, with his principal focus on the noncollege-going group. Some 43 per cent have attended college, 16 per cent have taken vocational studies, and 41 per cent got no further schooling. Only 58 were unemployed, 378 were still in school or college, and 447 in military service.

The young man's climb up the occupational ladder has a "definite and positive relationship" to the extent and form of his post-high school education, Little says. But attainment also depends on personal qualities--general ability, habits of achievement, and family background.

The number of graduates who attended a vocational or trade school was almost twice the number who had planned such study. Their background characteristics were a virtual cross-section of the 1957 graduating class.

Contrasting with the J. Kenneth Little findings, Project TALENT (16), a continuing nationwide study of high school students, has discovered that nearly three out of four boys change career plans after graduation from high school.

The Project TALENT report is based on the data from 48,000 students surveyed in the eleventh grade in 1960 and again a year after graduation. One major purpose of the study is to provide information helpful in developing better career counseling for students.

Only 27 per cent of the boys surveyed in 1960 were still planning the same careers a year after high school graduation. (Girls were not included in the part of the study dealing with career plan changes.)

Only in the field of medicine and religion were as many as 50 per cent of the group of students in the 1960 survey still planning the same career.

Of particular interest to this study was the fact that the occupations continuing to attract more than a third of the original group included farming.

A study in this area by Martin (17) of five representative counties in Wisconsin included these findings:

> It was found that 7.3 per cent of the youth listed the same occupational choice in 1962 as they had in 1958. It was found on the followup questionnaire that 288 youth aspired to be professional workers by 1972 as compared to 183 who had indicated that they would like to be professional workers at the time the original questionnaire was administered to them as sophomores.

> Approximately two-thirds of the 1962 group were pursuing further education and could be expected to achieve their occupational goals.

A study concerning occupational selection by McEwen (18) in Idaho revealed these findings:

> The present occupations of the former students surveyed were: Farming, 68, or 33.2 per cent; agriculture-related, 20, or 9.7 per cent; nonagricultural, 81, or 39.5 per cent; college students, 36, or 17.6 per cent.
>
> The former students' high school supervised program was rated by the instructors. It was found that 45.6 per cent of the students engaged in farming were rated excellent on their supervised farming program. Only 23.9 per cent of the students in a nonagricultural occupation received a rating of excellent on their supervised farming program.
>
> One hundred students had attended college or were attending at the time the questionnaires were completed. Of these, 45 per cent were studying some phase of agriculture.
>
> Seventy-two per cent of the students who were farming were influenced by the high school vocational agriculture program. Fifty-five per cent of the students in an agriculture-related field were influenced by the high school vocational agriculture program, and 23.4 per cent of the students in a nonagricultural field were influenced by the high school vocational agriculture program.

Related Studies

Burkett (19) states:

> Preparatory trade and industrial education, that part of vocational education which we are talking about today, has as its major objective the preparation of a student to enter into an occupational area. (You would also find the same objective applying to other areas of vocational education, namely distributive education, agricultural education, home economics, and office and secretarial training.) I'd like to stress the words "enter into" because, of course, training in a particular job skill does not end at the end of a course. In other words, we try to give the student some basic skills, knowledge, and concepts that will help them move into their first job. After he leaves us, he will probably have to go into an apprenticeship program that will give him on-the-job experience.

Hayles (20) found in his study that:

> Forty-seven per cent of the graduates entered institutions of higher learning. Their farm experiences and vocational agriculture training influenced 23.1 per cent of the college students to major in agriculture.

Snider (21) implies the events of the past decade have caused most thinking citizens to become more concerned than ever with regard to what happens not only to those youth who for some reason or other fail to complete their high school education, but also with the question of what happens to the high school student who completes a program and graduates.

He believes the concern must include a deep interest in what happens to all graduates. The high school graduate who upon completion of the high school program attempts to find a place for himself in the world of work in his immediate community or elsewhere is a matter of interest and concern not only to the school which provided him with his education but also to the community in which he lives. His lack of success in this endeavor may mean one more difficult problem for the community, state, and nation.

Dunlap and Hobbs (22) provide us with some data concerning these high school graduates in Oklahoma. They found that while there may be individual exceptions, it is generally true that the larger the high school, the greater the percentage of its graduates enrolled in college. The facts indicate that a student who attends one of the smaller high schools in Oklahoma is disadvantaged in two ways. He not only tends to show up comparatively worse on a test designed to measure his ability to achieve in college, but he also finds that his chances of going to college are inhibited by as much as 10 per cent in comparison with his counterpart who is attending one of the state's larger high schools.

It is possible that the difference in the college-going rates of the two groups was as much a function of parental income as size of high shcool attended.

From Sahlstrom (23) interviews on questionnaires with 718 capable seniors of central Minnesota it was found that:

> Distance from college was not a significant factor; home background was an important factor; high school rank was an important factor; income level of a family did affect college attendance but was not a significant factor in itself; advice of high school counselors and instructors was a most significant factor; education of parents was an important factor; working mothers seemed to have no effect on whether the children planned to attend or not attend college.
>
> Students named preparation for a career as the most important factor. For students who were not planning on college, lack of financial means was given as the most important factor in their decision.

A Kansas study by Armstrong and Harder (24) indicated some similar findings. The fact that "academically capable" youths do not continue their education beyond high school has been cause for many conjectural opinions as to the reasons. The major reason given with greatest frequency in each instance has been the problem of finances.

It is interesting to observe that in very few instances the desires of the student himself are considered when studying this problem. Also ignored is the possibility that maybe all capable youths do not necessarily "need" to go to college.

It is believed that the first step in solving the increased demand for highly trained human resources is to ascertain the reasons for their not continuing their education. If these reasons can be clarified, it is possible that they can form a basis for reasonable and effective plans to encourage high school graduates to continue their education.

Information concerning the post high school activities of all 1963

graduates and their rank in class was obtained from all the high schools in Kansas during March of 1964. A questionnaire was then submitted to a sample of randomly selected non-college going students who ranked in the upper half of their graduating class of 1963.

Forty-six per cent of the boys in this group considered the lack of funds as a major reason for not going on to college. To a subsequent question, asking if they could have made it financially had they decided to continue, 50 per cent of the boys thought that they could obtain sufficient funds to continue had they desired to do so. The consistency of the findings concerning desire to continue and major reason for not continuing suggests that approximately half the boys do need financial assistance to continue on to college.

When asked directly concerning whether or not they wanted to continue their education, 57 per cent of the boys replied in the affirmative. This finding coupled with the facts that 65 per cent of the boys intended to enroll in a college at some time in the foreseeable future and that 60 per cent of the boys did not regret not going right on to college suggests that they were just not ready to attend college immediately following graduation, though many may enroll at a later time in their lives.

Generally, it is believed that the availability of financial assistance, no matter what its form, would remedy a major portion of the problem of capable students not going on to college. Young people, however, react differentially according to the suggested source of this assistance.

It is interesting to note that only 29 per cent of the boys were interested in obtaining loans. It is possible that these percentages

would have increased in all categories had the availability limit been higher. However, the statement of "half the cost" seemed to be a realistic figure and sufficiently conservative to elicit responses associated with genuineness of purpose.

Many factors other than those discussed in this article were found to be deterrents to capable students' entry into college. However, the aforementioned shed considerable light on the "so-called" problem of talented youth not going on to college.

These findings suggest that about one-half of those from the upper half of their graduating classes do not desire to enter college immediately after graduation.

It appears that high school students are very conservative with respect to their views on borrowing money to finance college education. With the current trend in financial assistance to students being in the direction of loan programs, it seems that there is a great need to disseminate information and even possibly educate high school students concerning the possibilities of financing higher education with borrowed money.

Summary

The new vocational education act of 1963 has created much confusion in high school vocational agriculture programs. Numerous expressions by individuals and groups regarding its impact have appeared in print. One of the major points of controversy has been the place of the supervised farm training program in the curriculum.

Most of the findings in the literature indicate either a strong supervised farm training program or an equally strong supervised work

placement program. This is according to the type of program with which they are concerned.

Findings in studies of immediate post high school students indicate a high percentage seeking higher education. These graduates are of approximately eighteen years of age, a time of realistic choices of occupations.

The influence of vocational agriculture programs and teachers has been found repeatedly in this literature. The favorable findings of this influence tends to support its value to these students regarding their occupational choice. It issues a challenge to teachers and schools alike to develop the type of modern program in vocational agriculture that fits the needs of these students. Just as a desirable program will provide desirable outcomes, it may be assumed negative outcomes could develop from inadequate programs and teachers.

One of the major factors in providing additional post high school training includes finances. While this is not reflected in all literature reviewed it appears a factor in several studies. We have been concerned for several years with the "school dropout" problem. Several studies reviewed in this literature are equally concerned with the "academic capable" student that could continue in education beyond high school. This study shows a high percentage of students attending some form of higher education. Most of these students are found in the high ranking group relative to the value of their supervised farming program. It is then possible that the economic earning power of these students may provide the financial assistance needed for further education.

There appears a general agreement in the literature of a need for a modern approach to our vocational agriculture curriculum. A need for

strong "on the job" or "experience by doing" activities is supported by most of the literature.

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CHAPTER III

PRESENTATION AND ANALYSIS OF DATA

Statistical Presentation and Analysis

Sixteen schools in the northwest district of vocational agriculture were randomly selected to provide a basis for beginning this study. A list of all students that were enrolled in vocational agriculture in 1964-65, but not enrolled in 1965-66 was obtained for each of the sixteen schools. The present status of these students regarding their present occupations as of January 1, 1966, was indicated by the vocational agriculture teacher in the respective school. These local teachers also indicated whether or not these students had graduated from high school in 1965. When these lists were compiled a population sample totaling one hundred and nine students from sixteen different areas of northwest Oklahoma was obtained for the study. The students were then categorized into the following groupings: (1) establishment in farming, (2) establishment in non-farm agricultural occupations, (3) pursuit of studies in post high school and higher education--(a) agricultural studies, (b) non-agricultural studies, (4) non-agricultural occupations, (5) dropouts from vocational agriculture classes, and (6) entrance into armed services and ranks of the unemployed. Each of these students had experienced one or more years of vocational agriculture training in high school classes by the close of the school year of 1965.

From the annual final all day reports of these schools on file with the State Department of Vocational Agriculture, both the total labor income and total value of their closing inventory was obtained for all one hundred nine students. These total closing inventory values totaled $143,593.00. The average closing inventory of each supervised farm program determined as $1,317.00 constituting an investment in the supervised farm training program. When this amount was divided into three equal groupings, the lower segment fell between $0.00 and $439.00, the middle segment between $439.01 and $878.00, and the upper one third above $878.00. The one hundred nine students comprising the population sample were then categroized into these respective groupings, and also categorized into groupings delineating immediate post high school endeavor. The Chi square test with two degrees of freedom, was then applied to data to test the divergence of observed results from expected results testing an hypothesis of equal probability. Results of this testing are presented in Table I.

Results were accepted as significant at the .05 level and as highly significant at the .01 level on the grounds that divergence as observed from expected results is too unlikely of occurrence to be accounted for solely by sampling fluctuations. On this basis the null hypothesis that no significant differences exist between student completion of acceptable extensive supervised farming programs and immediate endeavors in (1) farming, (2) agriculture occupations and (6) armed forces or unemployment cannot be rejected.

However, those segments of the null hypothesis which were tested regarding endeavors of (3) non-agricultural occupations, (4) pursuit of studies in higher education both (a) agriculture and (b) non-agriculture

and (5) ceasation of enrollment in vocational agricultural class were rejected, with the level of significance at the .05 level or less.

TABLE I

INVENTORY VALUES AS ASSOCIATED WITH PROGRAM CESSATION OR IMMEDIATE POST HIGH SCHOOL ENDEAVOR

Endeavor	Total Number High	Middle	Low
Farming	3	0	1
Agriculture Occupations	5	0	5
Non-Agriculture Occupations	0	2	6*
Higher Education	41	8	18**
(a) Agriculture	27	5	4**
(b) Non-Agriculture	14	3	14*
Program Dropouts (Pre-graduation)	0	0	15**
Armed Forces and Unemployed	1	1	3
TOTAL	50	11	48

*Significant
**Highly Significant

This would seem to indicate that there is a significant difference between the groups of students regarding the extent of supervised farming inventories and their pursuit of non-agriculture occupations, higher education, both in agriculture and non-agriculture, and a tendency to become a program dropout.

The significant level of .01 in (4) higher education, (4a) agriculture education and (5) program dropouts indicates a very strong position for these areas in relation to the supervised farm program inventories of students and their immediate post high school endeavor

in vocational agriculture or agriculturally related efforts. The strong implication was observed that students engaging in less extensive programs of supervised farm training were more likely to be those students who also entered non-agricultural occupations.

The labor income from the supervised farm training program of the one hundred nine students was obtained in the same way as the closing inventory values. This information was treated in the same manner, arranging the students in categories regarding (1) occupational endeavor and (2) level of labor income.

The one hundred nine students in this study had a total labor income of $65,314.00. Their average labor income was $599.00. The lower one-third was calculated at $199.66, and below, with the upper one-third being $399.33 and above. The middle one-third included individual labor incomes falling between these figures. The number of students achieving labor incomes categorized in each of these groupings was then determined and collated as to their occupational status and rankings of high, middle or low regarding their labor income. The Chi square test was applied to these groupings with results as presented in Table II.

Acceptance of these results as significant at the .05 level prevents rejection of the null hypothesis for those segments testing the categories of (1) establishment in farming, (2) establishment in non-farming agricultural occupations, (3) non-farming occupations, (4b) pursuit of studies in non-agriculture higher education and (6) entrance into armed forces or ranks of the unemployed.

On a similar basis the null hypothesis as formulated, could not be accepted for segments testing the categories of (4) pursuit of a higher

education studies in agriculture education and (5) ceasation of enrollment in vocational agriculture (dropouts). Strengthening evidence in non-acceptance of the hypotheses is that the test of significance was effected at the .01 level. This would indicate that divergence of observed results from expected results in these areas would occur only once in 100 repetitions of this study. This significance places added emphasis upon the association of an adequate extensive supervised farm training program to the tendency of students to continue an educational program of higher education, more specifically in the area of agriculture. A strong association between the supervised farm training program and the retention of students in vocational agriculture classes is also indicated by the finding of significance at the .01 level.

TABLE II

LABOR INCOME ASSOCIATED WITH PROGRAM CESSATION OR IMMEDIATE POST HIGH SCHOOL ENDEAVOR

Endeavor	Total Number High	Middle	Low
Farming	3	0	1
Agriculture Occupations	2	2	6
Non-Agriculture Occupations	1	3	4*
Higher Education	40	13	14**
(a) Agriculture	25	7	4**
(b) Non-Agriculture	15	6	10
Program Dropouts (Pre-graduation)	1	1	13**
Armed Forces and Unemployed	1	0	4
TOTAL	48	19	42

*Significant
**Highly Significant

Percentage Presentation and Analysis

Since it was anticipated that this study might be reviewed by students with a limited understanding of statistical procedures and significance data was also presented as percentage relationships. In Table III the investigator sought to present the same basic information presented earlier in Table I, differing in that it was expressed in terms of the percentages of sample population.

TABLE III

INVENTORY VALUES AS COMPARED WITH PROGRAM CESSATION OR IMMEDIATE POST HIGH SCHOOL ENDEAVOR

Endeavor	Per Cent in Groupings: High	Middle	Low	Per Cent Total
Farming	2.75	0	.91	3.66
Agriculture Occupations	4.58	0	4.58	9.17
Non-Agriculture Occupations	0	1.83	5.50	7.33
Higher Education	37.61	7.33	16.51	61.46
(a) Agriculture	24.77	4.58	3.66	33.02
(b) Non-Agriculture	12.84	2.75	12.84	28.44
Program Dropouts (Pre-graduation)	0	0	13.76	13.76
Armed Forces and Unemployed	.91	.91	2.75	4.58
TOTAL	45.87	10.09	44.03	100.00

It is readily observed from Table III that students comprising the major percentage of the sample did pursue some type of studies in higher education after completing their high school vocational agriculture program. The highest percentage of students pursuing such studies were found to be those completing farming programs with higher inventory

values. In the collation separating the pursuit of study in agricultural education from studies in non-agricultural education substantially the larger percentage of those with the higher inventory value continued studies in the area of agricultural education, while consideration of the group of students pursuing non-agricultural studies shows an equal distribution between those with farming programs of relatively high and low inventory values. Further analyses reveal that students comprising the agricultural education studies group markedly decline in their achievement of a high inventory value through the middle to low groups, respectively.

That portion of the population falling within the middle segment or grouping according to inventory value, while comprising only a small per cent of the study, does include 7.33 per cent of the sample pursuing studies in higher education. Further analysis of the middle segment reveals that of the total sample proportion comprising this smaller group over 70 per cent are pursuing studies in higher education. This corresponds to above the same two to one ratio between agriculture and non-agriculture studies segments found in the group ranking high in inventory values achieved.

Data show that all of the program dropouts are found in the low grouping of inventory value attainment. These are the students not re-enrolled in vocational agriculture or having not graduated from high school. The value of an extensive supervised farm training program is thus indicated as a factor possibly encouraging retention of students in the agriculture training program in high school.

Information presented in Table IV is the same data presented in Table II, but expressed in percentages. The percentage of those engaged

in farming, while small, does possibly indicate a trend toward establishment in farming by those with higher labor incomes as contrasted with those low labor incomes. The numbers of those engaged in endeavors classified as agricultural occupations increases slightly from the high labor income grouping to the low labor income grouping. This could be construed as a possible indication that these students are interested in agriculture, perhaps either higher education or faming, but lack the financial resources to pursue it further. Many other studies have indicated the high cost and financial problems related to both higher education and farming. This same trend is indicated also in the areas of non-agricultural occupations and armed forces or unemployed.

TABLE IV

LABOR INCOME AS COMPARED WITH PROGRAM CESSATION OR IMMEDIATE POST HIGH SCHOOL ENDEAVOR

Endeavor	Per Cent in Groupings: High	Middle	Low	Per Cent Total
Farming	2.75	0	.91	3.66
Agriculture Occupations	1.83	1.83	5.50	9.17
Non-Agriculture Occupations	.91	2.75	3.66	7.33
Higher Education	36.69	11.92	12.84	61.46
(a) Agriculture	22.93	6.42	3.66	33.02
(b) Non-Agriculture	13.76	5.50	9.17	28.44
Program Dropouts (Pre-graduation)	.91	.91	11.92	13.76
Armed Forces and Unemployed	.91	0	3.66	4.58
TOTAL	44.03	17.43	38.53	100.00

The highest percentage of the samples when grouped according to labor income, is found in the area of endeavor classified as pursuit of studies in higher education. Most of these, some 36.69 per cent of the total sample, identified as having achieved high labor incomes. It is interesting to note that both those pursuing agricultural and those pursuing non-agricultural studies were found to have the higher percentage within the upper one-third grouping with regard to the amount of labor income earned from their supervised farming programs. Comparison of differences between the numbers falling within high and low groupings with regard to labor income who choose agricultural education as a field of study reveals a much greater percentage falling within the high grouping following this choice than those falling within the low grouping. Examination of data concerning the non-agricultural education study group reveals only slight differences between the high and low classifications regarding the size of labor income attained.

Findings presented in Table IV clearly reveal the fact that the majority of dropouts from the vocational agriculture program have achieved only a low labor income from supervised farming programs. This could possibly be interpreted as pointing out emphasis on assisting students to develop stronger programs. Immaturity of the student regarding his interest, motivation and desire for occupational guidance and choice may well be an associated factor.

Perhaps, the most significant finding of the investigation was the discovery that a higher percentage of the students with more extensive supervised farm training programs, measured both in terms of closing inventory values and labor income continued in pursuit of some type of studies in higher education.

At this point it may be recognized that supervised farm training programs, yielding substantial financial returns can often provide a basis for the financing necessary for the student to implement and pursue a program of post high school study. Financial assistance for the students continued educational pursuit could well be derived from profits of the supervised farm training program by its continued operation and the use of the labor income for further education.

A substantial inventory value assures a source of collateral that could prove quite useful in securing a loan to further the students educational plans, as well as provide assets that could be sold by the student in order to obtain further needed financing.

Findings of the study also reveal that 22.93 per cent of the total sample, pursuing agricultural studies subsequent to high school graduation, were found to have carried out financially high yielding supervised farming programs as compared to only 3.66 per cent of the sample following the same post high school endeavor but only having financially low yielding supervised farming programs while in high school. This would possibly tend to indicate that those students more responsive to the challenge of developing extensive supervised farming programs will be more likely to continue in the area of agriculture than those less responsive.

This same association was discovered with respect to data collected regarding closing inventory values of student farming programs. The high percentage of these students (61.46 per cent) enrolled in higher education emphasizes the widely recognized trend in our society for pursuit of study in higher education. This emphasis indicates that if these evolving needs and demands of society are to be met we must also

consider this as a part of our educational responsibility. Society will generally support any institution or any program that it believes to be needed but only to the extent that it contributes to the general welfare or to the achievement of the general objective toward which it is dedicated. If vocational agriculture education is to continue to receive wide acclaim and support it must include and further develop provisions motivating and challenging an increasingly large percentage of graduates to continue educational pursuits beyond the high school.

The low percentage of students actively engaged in farming and agriculture occupations as an immediate post high school endeavor can possibly be somewhat attributed to these ever enlarging expectations and demands of society with regard to a college education or some type of advanced study. It can be assumed, from information obtained from many other studies, that as these students receive further education and mature in age and responsibility, many may return to the farm or other agricultural related endeavors for a lifework.

CHAPTER IV

SUMMARY AND CONCLUSIONS

Summary

Literature studied and reviewed appears to indicate general agreement that some revision to the present approach and implementation of the supervised farm training program in vocational agriculture be considered as desirable. Supervised practice and work experience seems to be the subject of considerable attention in many discussions of new programs of vocational agriculture. As vocational educators and supervisors move from the requirement of a supervised farming program for each student enrolled in vocational agriculture, it seems essential that they do retain some form of supervised practice program of work experience in agriculture for each student. "Learning to do by doing" is a sound educational principle, widely accepted, but perhaps not all educators are aware of all that is involved in the statement.

However, there has been a tendency to take a good practice and make it a doctrine. In the process frequently the basic reason for the practice in the first place, namely, learning, may be lost. The theory and the underlying philosophy of supervised practice would probably stand up under any fair evaluation as sound educationally, not only for vocational agriculture but for any other subject. However, by the time the practice was firmly established as a route for better learning it had become the one and only route that anybody enrolled in vocational

agriculture would be allowed to take. Many such practices have been institutionalized and then great efforts have been exerted to enforce the practice, forgetting that the practice started as a way and means to reach a valid objective of learning. Although much of the literature reviewed strongly supported the value and need for supervised farm training, there was also repeatedly indicated a need for flexibility in its application.

Problem of the Study

The central problem of the study was to provide descriptive evidence for an appraisal of the supervised farm training program and its possible association with post high school endeavor.

The study involved the collection and analysis of data regarding: (1) the total labor income, (2) the total closing inventory values, (3) post high school endeavors and the indication of possible association that might exist between both items (1) and (2) and item (3).

Method and Procedure of the Study

The study was designed to discover possible associations and to test a formulated null hypotheses that no significant differences exist between the extent and financial productiveness of the students supervised farm training program and his immediate post high school endeavor.

Data were collected from permanent final all day reports of student activities and accounts submitted by the local vocational agriculture teacher. The population sample consisted of one hundred nine students from the sixteen randomly selected schools in northwest Oklahoma. These students had terminated enrollment during the 1964-65

school year either by graduation or by withdrawal for other reasons.

The statistical techniques used in testing of null hypotheses were the 'Chi square' test. The level of significance required for rejection of a null hypotheses was set at the five per cent level. Those rejected as significant at the one per cent level were considered differentially highly significant.

Summary of Findings in Regard to Supervised Farm Training Programs Investigated and Hypotheses Tested in Association with Post High School Endeavor

The data were tabulated and subjected to both non-statistical and statistical techniques. The following is a summary of the most important findings.

Hypothesis Regarding Closing Inventory Values and Post High School Endeavors

Tests of five of the eight selected categories relative to the null hypothesis revealed significant differences. Three of these five categories yielded data with differences and were highly significant at the one per cent level. It was found that significant differences did exist between the closing inventory values and categories (3) establishment in non-agriculture occupations, (4) pursuit of higher education both (a) agriculture and (b) non-agriculture and (5) ceasation of high school studies prior to graduation.

Hypothesis Regarding Total Labor Income and Post High School Endeavor

Tests of five of the eight selected categories relative to the null hypothesis yielded data with differences which were not significant.

It was found that a significant difference did exist between the total labor income and those with post high school endeavors in the areas of (4) higher education (a) particularly in agriculture and (5) ceasation of high school studies. These were found to be highly significant in this study.[3]

Conclusions

While no claims are made that this study isolated any single factor with regard to cause and effect status, there are strong indications that supervised farm training programs may be expected to be found associated with certain post high school endeavors under certain identified conditions rather than with others.

Enough evidence regarding association or non-association have been discovered to present a challenge to all who are concerned with the further growth and development of the supervised farm training program.

In summary, it can be said that this investigation indicates:

1. A great degree of association between the supervised farm training inventory and students immediate plans upon conclusion or ceasation of high school studies.

2. High school graduates achieving a high labor income from supervised farming programs also are identified as students more likely to pursue higher education, particularly agriculture curriculums.

3. High school graduates with large investments, indicated by substantially larger closing inventory values, tend to choose and implement immediate post high school endeavors related to areas of agriculture.

4. Conversely high school graduates with a low labor income tend

to engage in post high school endeavors not associated directly with agriculture.

5. High school graduates with small investments as indicated by more meager closing inventory values tend to pursue post high school endeavors of non-agricultural association.

6. Non-high school graduates ceasing to enroll in vocational agriculture classes tend to also be identified as students attaining only low labor income and low closing inventory values as a result of having very limited supervised farming programs.

Implications of the Study

From the findings of the study it is concluded that the nature and extent of the supervised farm training program of students in high school vocational agriculture classes provides a strong indication of what these same students may choose and implement as an immediate post high school endeavor upon conclusion of high school studies in schools located in the northwest district of Oklahoma. A high percentage of students in the study were found to be pursuing some type of further education. A large majority of those were also found to have achieved high labor incomes and high inventory values in their supervised farming programs.

It is indicated that an association exists between achievement of a high labor income and closing inventory and the likelihood that the students in northwest Oklahoma will choose to continue to be identified with agriculture in some capacity, either occupation or further studies.

It was further indicated from this study of one hundred nine students in sixteen schools representative of the northwest district of

Oklahoma, that students terminating enrollment before graduation were more likely to be those who also maintained supervised farming programs with low inventory values and yielding a low labor income.

It is further concluded that this study establishes an association between certain measurements of strength of the individual student's supervised farm training program and the student's immediate post high school endeavor; and that this association is of such extent and magnitude as to be considerable value in attempting to plan for increased retention of students in high school classes. Likewise consideration of these results should prove of value to teachers and others in the guidance and motivation of students to continue some selected form of post high school education. This would tend to indicate that emphasis should definitely be placed on the supervised farm training program as basic and essential to the more effective functioning of the vocational agriculture program. It is recommended that further studies of this nature be made in other sections of Oklahoma and in other states in order that the effect of the supervised farm training program could be predicted on a much wider basis.

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VITA

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DOCTOR OF EDUCATION

Thesis: A STUDY OF THE ASSOCIATION BETWEEN THE SCOPE OF THE SUPERVISED FARMING PROGRAM OF HIGH SCHOOL STUDENTS OF VOCATIONAL AGRICULTURE AND THE STUDENT'S IMMEDIATE POST HIGH SCHOOL ENDEAVOR

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