THE EFFECTIVENESS OF THE OKLAHOMA FFA AGRICULTURAL MECHANICS INTERSCHOLASTIC CONTEST WITH IMPLICATIONS TO NIGERIA

By

SOLADOYE OLUDAISI GBENJO

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Western Illinois University

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Thesis Approved:

Thesis Adviser

James P. Key

Robert Terry

Dean of the Graduate College

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CHAPTER I

INTRODUCTION

The Federal Republic of Nigeria is situated between latitudes 4^{o}N and 14^{o}N; and longitudes 2^{o}E and 15^{o}E. It is bounded on the south by the Atlantic Ociean, to the east by the Republic of Cameroun, to the north by Niger Republic, and on the west by Dahomey.

A population of about 58 million inhabit 923,786 sq. km, giving a population average of 63 people per sq, km. However, the real distribution of population varies from about 150 in the cities to under 10 in the rural areas (2).

Nigeria depended largely on her agricultural productivity until the "oil boom" and the current energy crisis escalation. Some 80 percent of the Nigerian population is engaged in the area of agriculture. The primary crops being produced are goundnuts, maize, sorghum, beans, and yams. The food crops and livestock producing areas are located to the north, while the southern region is more suited for cash crop production as dictated by the soil and climatic conditions.

Before Nigeria attained independence in 1960, the different regions of the federation were granted self-government status. Since then, Nigeria has created tremendous changes. Involved among these changes was the educational emphasis. In the past education has been directed toward white collar employment. As a result of the rapid changes in needs, wants, and the standard of living of the Nigerian

people, the educational institutions emphasizing a liberal education can no longer supply all the needs of the developing nation.

Enrollment in schools has increased rather sharply, especially with the introduction of Free Primary Education in the western region and the eastern region. Actual enrollment in the primary schools rose from 2 million in 1957 to 4.4 million in 1972. An additional increase in enrollment is expected with the Federal-Funded Universal Primary Education (UPE) starting in the fall of 1976.

Today, the primary and secondary schools are not necessarily popular grounds for disseminating agricultural information. There are about 66 agricultural education institutions in Nigeria. They are referred to severally as Schools of Agriculture, Farm Schools, Farm Centre, Farm Institute, etc., depending on the educational level, objectives, procedures and goals. The School of Agriculture, Akure (training extension agents) is the largest of the agricultural institutions with a student population often times in excess of 500.

Education in these institutions has not taken advantage of peer-centered, out-of-class competitions on both inter- and intra-school basis. This philosophy of education, not only limits the scope, interest, and experience on the part of the students, but also leads to complacency which may result in low standards of performance on the part of the teachers and a great loss to the agricultural industry and the economy as a whole.

The large number of youths in these agricultural institutions could, therefore, be organized and motivated to compete in many areas of competition involving the world of work and especially in farming and agri-business. Preparation for and participation in such competitions

could help students to learn facts, develop skills, think and build interest and attitudes in group and community settings. Students can also understand problems more completely-solving procedures, making decisions, and profitable evaluations affecting their respective chosen agricultural occupations.

Presently peer-centered organizations in high schools operate as literary and debating societies for leadership and public speaking trainings, "house" grouping for interhouse sport competitions. Organizations like the Young Farmers' Club and the 4-H Clubs, as youth arms of the agricultural extension services, have their bases in high schools and are not involved in academic competitions. Since the schools are not set up for vocational education of any type, there are no facilities or equipment for occupational training.

Agricultural mechanics is one of the phases of the instructional programs in vocational agriculture. Along with production agriuclture, marketing, management of the farm business, conservation of resources, development of leadership, beginning and advancing in farming make up a complete instructional program in vocational agriculture. The various methods employed in teaching agricultural mechanics in schools aim at developing skills through experiences involve the areas of doing (planning job activities), and education through trials and errors beginning from the simple to the complex.

In addition to skills, the learning experiences in agricultural mechanics should develop other types of abilities such as: the understanding of materials, techniques, and jobs involved in agricultural mechanics occupations; the reasoning, and judgement of abilities required for solving common managerial problems relating to the use of

machinery and equipment; the importance of attitudes, and ideals, in relation to materials, tools, and equipment used to enhance workmanship.

The course content and methods employed in teaching the student provide excellent opportunity for leadership development and activities in a competitive atmosphere. The use of operation sheets, job sheets, information sheets, blueprints, assignment sheets, references, etc., make it possible for students to learn agricultural mechanics activities in depth at their individual rates. This provides an avenue for students to compete for excellence. Successful competition within the peer group generates enthusiasm and momentum aimed at attainment of noble goals. When a student excels in any area of competition he may become motivated to learn more in related subjects. Students excelling in the areas of agricultural mechanics contests are encouraged with recognition awards and are more apt to become leaders in such areas.

Statement of the Problem

To improve the educational process, constant evaluation and revision must be incorporated into the planning process. As stated earlier, instruction in Nigerian schools has been directed toward, primarily, the white collar worker. Recent efforts have been made to redirect the educational emphasis to that of meeting the needs of all people regardless of employment direction.

Limited effort has been made to include competition among students as a means of inspiring the educational process in Nigeria. Therefore, it would seem helpful that educators need to view contests involving competitions among students and determine if educational benefits do, in fact, exist. If educational benefits are identified, the problem

becomes one of incorporating such activities into the Nigerian educational system.

Purpose

The purpose of this study was to identify and compare selected educational benefits and opportunities resulting from participation in the Oklahoma FFA Agricultural Mechanics Contest as perceived by students and teachers of Vocational Agriculture.

Concurrent with this purpose, efforts were made to determine if the educational benefits resulting from competition created significant contributions to effective learning and how the contributions could be adapted to the Nigerian educational system.

Research Objectives

In order to achieve the purpose, the following objectives were selected:

1. To secure and analyze Vocational Agriculture teachers' perceptions of the nature and extent of educational benefits acrueing to students participating in the Agricultural Mechanics Contest of the Oklahoma FFA Interscholastic Competition.
2. To secure and analyze Vocational Agriculture students' perceptions of the nature and extent of education benefits acrueing to the students participating in the Agricultural Mechanics Contest of the Oklahoma FFA Interscholastic Competition.
3. To identify differences that exist between the perceptions of

the Agricultural Agriculture teachers and students in terms of the educational benefits.

4. To determine if student contestants at the Oklahoma FFA Agricultural Mechanics Contest were more aware of the world of work in agricultural mechanics than non-contestants.
5. To determine and analyze through records how well students are achieving the skills expected by the Agricultural Mechanics experts who developed the contest.
6. To determine if Agricultural Mechanics teachers' and students' perceptions as to how the preparation for, and participation in, the Oklahoma FFA Agricultural Mechanics Interscholastic Contest have motivated and encouraged students to stay in school

Need for the Study

The greatest problem facing Nigeria today is the underdevelopment of her human resources. After 15 years of independence, Nigeria is direly attempting to develop her own identity. To do this successfully, Nigeria has to build up her human capitals, that means improving the education, skills, hopefulness, and, thus, the mental and physical health of the Nigerian peoples.

Towards this end, the existing school curriculum of the overall school system will have to be reorganized, planned and programmed in line with proven educational philosophies of this age.

For those students motivated to look towards employment in the agricultural mechanics area, the high school must provide the necessary technical training aimed at skill development. Since educators across

the nation have spent much time and effort in preparing for and carrying out contest activities, the author feels that there are some educational benefits in using contests as a teaching tools.

The investigator, therefore, felt that there existed a need to find out the educational benefits of contests and competition in teaching agricultural mechanics in high schools in the state of Oklahoma. If benefits do exist, it is hoped that if such benefits can be incorporated into the Nigerian educational systems the teaching-learning situation can be improved.

Scope of the Study

Thirty-eight vocational agriculture departments in Oklahoma who placed within the top five of the state FFA agricultural mechanics interscholastic contests during the period of 1970-1975 were included in the survey. The scope of this study was limited to finding out the advantages derived from agricultural mechanics contests as assessed by teachers and students of vocational agriculture in high schools.

Students from vocational agriculture departments who qualify for this study were students who:

1. Had been enrolled in vocational agriculture and the FFA.
2. Participated in the FFA agricultural mechanics contest during the 1975 Oklahoma Interscholastic meet.

Limitations of the Study

Limitations of this study recognized by the writer are:

1. Only vocational agriculture departments placing within the top

five in the Oklahoma FFA Agricultural Mechanics interscholastic contest during the period 1970-1975 were included in the survey.

2. Questionnaires were mailed to the chapter advisor for distribution among the contestants.
3. Only the three student contestants who had competed in the 1975 State Agricultural Mechanics contest were surveyed in any chapter.
4. Only chapter advisors who prepared students for the contest could be used for the survey.

Time, material, cost, and attitude of the target population were great limiting factors. Personal visits were made to some schools so as to be familiar with the programs and methods of training for the contest.

Definition of Terms

Technical Education. Education at the semi-professional level provided ordinarily in one or two year programs beyond high school which emphasizes science and mathematics in addition to laboratory procedures and technical information related to the occupations for which the students are being prepared.

Vocational Education. Specialized education for work in a particular non-professional occupation or a cluster of non-professional occupations.

Vocational Agriculture. Training of present and prospective farmers for proficiency in farming.

Chapter. Synonymous with School, Team, or Department in this study.

Administrator. The term administrator will refer to persons or personnel in the educational system above the Vocational Agriculture teacher. Included in this category are supervisors, program planning specialists, curriculum specialists, teacher trainers, etc.

P.I. Professional Improvement Course.

Curriculum. This includes all the planned learning activities or outcomes along which the Agricultural Mechanics contest is set.

Consistency. Here, it will refer to schools regularly taking part in the State FFA Interscholastic Competitions.

Award. An award is a material gift granted in recognition of an accomplishment or achievement.

Out-of-Class Time. All training hours not in the regular school schedule put in to prepare students for the FFA (Agricultural Mechanics) contests. Such periods do not fall between 8:00 a.m. and 4:00 p.m. on school days and can be anytime on weekends. Moonlighting hours are out-of-class hours.

Best. The word "best" should be understood as to the performance of teams at contests. When a team ranked within first-fifth, the teacher classified that area of Agricultural Mechanics as the best area of performance.

Written Examination. This is a phase of the Agricultural Mechanics Contest which consists of simple, mulitple choice questions over each of the selected instructional areas.

Problem Solving. This is a phase of the Agricultural Mechanics contest which consists of identifying materials or solving problems related to the instructional areas selected. Each contestant will solve problems in each of the selected instructional areas.

Mechanics Skills. This is a phase of the Agricultural Mechanics Contest which consists of specific manipulative activities in the instructional areas selected.

CHAPTER II

REVIEW OF LITERATURE

Sustaining the interest of Nigerian youths who choose to become involved in agriculture as a way of life "is a task that must be done." This, as it shall be pointed out later, is because the people of Nigeria, especially the youth at all levels of the educational systems, have a poor image of agriculture as a means of earning a livelihood.

Agricultural Education in Nigeria

Approximately 80 percent of the total working male population in Nigeria is engaged in agriculture. Food for survival accounts for 80 percent of the total agricultural production (2). Indigenous agricultural education in Nigeria is vocational in nature but lacks institutionalization. Studies have indicated that as agriculture was the mainstay of the Nigerian economy; therefore, serious attention was given to the teaching of children on how to produce good crops (13).

Agriculture in Nigeria can be correctly referred to as muscle farming. The Nigerian farmer depends on his hoe and matchet for practically all farm operations. Oyenuga (36) explained the hardship of the farmer as follows: "Of the main afflictions that befall the West African farmer, that of using his own unaided energy to produce the nation's food is the worst and most devastating (p. 31)." Attempts are

being made to mechanize Nigerian agriculture through the use of animal power and tractorization.

Purvis (40) in his study of the economics of tractor use in the Oyo Division of Western Nigeria found that the annual tractor use was on the average of 535 hours. Of this, 70 percent of the use was between February and July. This provided a yearly average of less than 2.2 hours per day. The very low number of hours resulted from the tractor being used on a small range of crops with the actual use being limited to the preparation of the seedbed or in some situations being used as a farm truck.

Probably a more cognant reason for this was given by the Commissioner for Agriculture in the Western State of Nigeria when he commented: "...that the purpose of the tractor hiring unit is to demonstrate the advantages of mechanized farming to the farmers in the Western State. It is not to provide tractor services for all those who want it." (p. 40)

Problems associated with the use of tractors in Western Nigeria were identified as follows:

1. Seasonality of the workload
2. Low intensity use of tractor equipment
3. High cost of operations
4. Rather expensive projects
5. Attempts at studying the economics of tractor use not made.

To improve the image of Nigerian agriculture and make it a worthwhile profession, Okorie's surveys (32, 33, 34) of students, teachers and parents revealed the following:

1. To be a good farmer requires more than secondary school education.

2. Lack of interest and seriousness in agriculture are great deterents to the development and progress of agriculture in secondary schools.

3. Better trained teachers are needed.

4. There is an acute shortage of books and materials.

5. Use of the hoe and matchet for farm activities essentially taught them nothing.

6. The teachers and the students were much concerned about the indifference of the government towards agriculture."

7. Journals, bulletins, magazines, and other teaching aides were not available in most schools.

8. School syllabus is designed basically to enable the student to pass their comprehensive final examinations.

9. Students expressed the need for individual farm projects.

From the above, it appears that one of the more effective ways of improving the farming coperation and thus opening avenues for agri-business in Nigeria is through the introduction of vocational education in agriculture. The methods and philosophies employed in teaching vocational agriculture and the activities involved in carrying out the teaching-learning transactions can be sure remedies for getting Nigerian agriculture on to the road of success.

Ojo (35) indicated from his study that:

> In order for young Nigerians to show interest and become attracted to farming as a career, the rewards from it should be made nearly comparable to that of other occupations; the schools should teach love for the rural area as well as the dignity in working with ones own hands (p. 71).

Reducing the drugery in farming through mechanization will invariably increase the interest of young Nigerians in agriculture.

Agricultural Mechanics

Successful agricultural mechanization has its foundation on Agricultural mechanics education. Agricultural mechanics includes all the unspecialized and some specialized mechanical activities that a progressive farmer or a non-farm agricultural worker should perform with the kinds of tools and equipment within his reach. Agricultural mechanics activities cover the following broad areas:

1. Farm power and machinery
2. Farm structures and environment
3. Soil and water management
4. Electric power and processing
5. Agricultural construction and management

These areas are based on broad scientific principles and requires intensive, precise manipulative skills.

Because of the broad scope and its requirements, teacher educators and agricultural engineers do not agree on how vocational agriculture teachers are to be prepared for teaching agricultural mechanics. While agricultural engineers preferred the academic approach, agricultural educators preferred the problems approach.

The problems approach involves:

1. The operative aspect -- with the "hands on" "learning by doing" philosphy.
2. The managerial aspect -- the decision making function of business (20, p. 123).

The problem approach is a positive approach as it relates more to the needs of the community, available facilities, tools and equipment,

priorities of investment and needs of people employed in agriculture and agribusiness.

To ensure that teachers are well prepared, Jacobs (23) stated that top level training of teachers of agricultural mechanics should be accomplished primarily through preservice teacher education.

The main problem in teaching agricultural mechanics is not how to teach but what to teach and the priority levels of the different agricultural mechanics areas relative to the needs of the community. Fog and Bear (14) stated that a teacher in agricultural mechanics should be encouraged to keep pace with the needs of their community.

Agricultural mechanics programs in high schools aims at developing the student's ability and attitude to:

1. Construct or repair suitable equipment essential for the supervised agricultural experience program.
2. Form good judgement.
3. Think creatively.
4. Use tools and equipment effectively.
5. Select, maintain and use tools safely.
6. Have interest in procuring and maintaining a good farm-home shop.
7. Create a desire to develop the abilities required to do good quality work.

These objectives provide an array of contest areas for the high school student. No other part of the vocational agriculture program offers a greater opportunity to the teacher for immediate visible tangible results.

Carter (6) found that the students who participated in the farm-shop contest during 1967-1969 scored considerably higher in mechanical

ability tests involving arithmetical computations, identification and use of tools, spartial relationships, and checking measurements than non-contestants. Both groups scored about the same on reading and interpretation of drawings and blueprints.

Contest involving competitions in agricultural mechanics are carried out in three phases; written examination, problem solving, and manipulative skills. Contests enable persons charged with the responsibility of organization to:

1. Identify the meaningful and teachable insturctional areas of agricultural mechanics.
2. Provide opportunity for students with high mechanical and manipulative standards to be recognized.
3. Create public awareness on the importance of agricultural mechanics in the curriculum.
4. Stimulate improved communications between instructors, teacher educators, state supervisory staff and national leaders in vocational agriculture concerning teacher preparation, curriculum, facilities and needs for insturctions in agricultural mechanics.

What Constitutes Effective Teaching

Effective teaching is not static, but of dynamic quality. It is action and reaction by the teachers and the students in any particular suituation.

Effective teaching depends upon the relationships existing among the teachers, the pupils, the community, the situation, time, and the expected outcome.

From the review of literature, it appears that the following prerequisites are imperative -- some to a high and some to a lesser

degree -- for teaching to be effective:

1. The teacher must be competent in subject mastery, teaching skills, and teaching personally.

2. He must be able to think ahead of the class -- innovative as the Protecting Farmers' Investment (PFI) program of Mississippi (29, p. 221).

3. Must be able to work harmoniously with all kinds of people. He must possess the elusive quality called empathy.

4. A teacher should be attentive to the physical conditions of the classroom, beginning and ending class promptly. He should not do all the talking nor permit unnecessary discussions.

5. He must be able to keep accurate records.

6. He must be "...commited wholeheartedly to the belief that the true educational experience was an experience in which the activities leading towards goal attainment should occur throughout the learning period" (39, p. 74).

8. He must be able to organize and use youth groups.

Effective teaching in vocational agriculture is ensured through the activities of the Future Farmers of America (FFA). The FFA is a youth organization

> ...that functions as an intricate piece of machinery, working together to produce an end product of an honest, capable, dependable young person whose life is built around leadership, cooperation, character and citizenship (31, p. 14).

Youth Organizations and Learning Experience

Youth organizations provide one of the most effective ways of maximizing learning opportunities. It can be a vehicle for developing leadership and cooperative attitudes. Youth organizations provide an opportunity for youths to display their talents and abilities in a cooperative spirit and therefore assist youths in becoming more effective members of the society.

For an organization to be truly effective, its activities must be challenging for its membership. Such activities must be conducted on an organized basis with specific goals, feasible ways and means of attainment, and a provision for evaluating the degree of success duly spelled out.

A well planned, carefully written program is an essential ingredient of successful chapters (11, p. 84). The importance of planning was further stressed by Griffith (17) as he reported: "An active complete FFA program can be a source of motivation and an instructional tool that can expose its members to careers in agriculture" (p. 223). There are six national youth organizations in vocational education within the United States:

1. The Future Farmers of America -- FFA
2. The Future Homemakers of America -- FHA
3. Distributive Education Club of America -- DECA
4. Vocational Industrial Club of America -- VICA
5. Future Business Leaders of America -- FBLA
6. Office Education Association of America -- OEA

Each organization represents a different area of vocational education but a common goal is the development of youth in terms of career related motivations, attitudes and capabilities.

The objectives of youth organization in vocational education are (30):

1. To create a peer-centered environment for groups and individual achievement through cooperation.
2. To develop an understanding of the civic, social and moral responsibilities of individuals to society.
3. To create high ethical standards.

4. To provide for the exploration of occupational opportunities in specific fields of interest.

5. To encourage respect for occupational preparation and desire for continuing acquisition of related skills, knowledge and attitudes throughout one's life.

The attainment of these objectives and the subsequent effects on the instructional programs resulted in support, confidence, and acceptance from the community. Johnson (25) reported that youth organizations are accepted and supported by top level spokesmen in business, labor, and agriculture. The USOE publicly supports youth organizations which are related to the instructional program in order to improve the quality and relevance of instructions, develop youth leadership, and provide wholesome experiences for youth not otherwise available within the schools.

Mason and Haines (30) wrote:

> Authorities agree that those activities requiring member participation, member direction, and member evaluation can have learning outcomes relevant to student occupational endeavors (p. 296).

They agree that youth organizations directly benefit the young people, the parents, the teachers, the school, the community, and the nation as a whole.

The sponsorship of youth activities help the vocational teacher provide tangible substance to his commitments to youth. He must consider himself an educator who thinks in terms of developing the total individual.

For many years, involvement in contests has been used as a tool to motivate youth into action. The instinctive ambition to excel and the wish to be recognized inspire and challenge youths into action.

Contests and Competitions

Competitions in FFA contests have assisted instructors in determining relative levels of achievement of individual students. It has provided a means of checking the student's level of proficiency in activities related to vocational agriculture and citizenship. This method of evaluating the performance of students bears directly on the teacher, the curriculum, and, finally, the educational system.

Contests used in vocational agriculture programs stimulate interest and promote learning. If contests are to serve their prime objective, they must be related to the instructional program. The area of agricultural mechanics instruction covers a wide area of technology.

Some subject matter areas require detailed scrutiny to arrive at a sufficient number of contest activities. This is not the case with agricultural mechanics. Contest areas and competition in agricultural mechanics can only be limited by relevance to the curriculum.

Everyone likes to be recognized for a job well done. Contests involving competitions provide a means of truly rewarding and recognizing achievement, and a yardstick for normative evaluation and measurement. Contests and awards motivate FFA members to carry out chapter work and thus develop individual abilities. Used properly, FFA recognition awards and participation programs at the local, state, and national levels are a tremendous motivating force for students and an invaluable teaching aid for the instructor (11).

Contests which measure practical abilities essential to success in the world of work are not only desirable but should be stressed by the advisor. They serve as motivators to careers. They expose the

students to resource personnel, facilities, and materials. Students who are motivated into competitive contest spirit can also be motivated at the same time to career opportunities offered in the training and teaching experience.

Fuss (15) reported that 56.9 percent of the student contestants at the State FFA Agricultural Mechanics Interscholastic Contest of 1967-1969 later on majored in various areas of agriculture. In a great many cases, students majored in the exact areas in which they competed at the contests. He recommended that teachers should motivate, inspire, and challenge the students to place high value on such areas of achievement recognizing that this would be a potential area of study to be pursued later.

Opinions are divided on the value of contests. Some educators feel that the negative results of contests overshadow the advantages. Generally, educators believe that a good contest should not:

1. Lay too much emphasis on the first place or any part of the curriculum.
2. Take too much time of the teacher.
3. Be judged by guessing.
4. Allow students to outsmart the teachers or judges.
5. Only create interest among participants and capture attention of the public.
6. Be an end in itself but a means to an end.

Teachers involved in training teams for contests generally agree that contests and competition are advantageous in:

1. Bringing about motivations for self improvement by providing satisfactions and a feeling of accomplishment.
2. Encouraging members to carry out chapter activities and indirectly better individual abilities and accomplishments.

3. Encouraging students to increase the kind, amount, and quality of the activities they engage in.

If contests are to have a positive value influence and are to make a maximum contribution to the insturctional program, they must be carefully and properly conducted, using sound educational principles.

Watkins (45) in his study of the practices and procedures used by selected teachers in preparing vocational agriculture students for competition in the state FFA interscholastic contests revealed that vocational agricultural teachers:

1. Placed emphasis on the number of contests in which their FFA teams participate in.
2. Used about 15 hours of class time annually and up to 41 hours out-of-class time preparing students for contests.
3. Used more freshman and sophomore hours for general contest preparation while junior and senior class hours were devoted to specific competition.
4. Regarded desire, intelligence, age, and willingness to follow instructions and maturity as great essentials for students to succeed at contests (p. 48).

Summary

Agricultural mechanics instruction is an integral part of vocational education in agriculture. The success of mechanized farming programs is directly related to the degree of knowledge of the farm operator in vocational agriculture. Courses of study in agricultural mechanics are usually designed to train pupils in making decisions and performing the operations and skills needed in farm and agricultural mechanics occupations.

Krebs (22) suggested that teachers should open their lessons with an interesting approach and then lead students in formulating goals and objectives. Learning can be considerably improved if the teacher

causes the students to analyse the situation and formulate questions to which they need answers. The total involvement of students in objective formulation generated the desire to excel and to be recognized.

Recognition award programs motivate students for achievement which can become a characteristic of personality. An awards program needs to be more than a method of selecting an individual or team winner. It needs to be an activity that is both rewarding to the individual at the time he is participating as well as have a positive effect on his life in later years.

CHAPTER III

DESIGN AND METHODOLOGY

The purpose of this chapter is to describe the methods and procedures used in conducting the study. The following areas identify the procedure used in conducting the study.

The Study Population

In determining the population, it was necessary to determine the schools that consistently participated during the past five years (1971-1975) in the Oklahoma FFA Agricultural Mechanics Interscholastic Contest sponsored by the Oklahoma State University. From the list of schools consistently participating, the chapter advisor and chapter teams that ranked in the top five of the contests were selected.

The population, therefore, conducted of two groups. The first group was represented by the teachers of vocational agriculture. The second group consisted of students who were members of the team. Selection of student participants for the contest was based heavily upon those who participated in the April 26, 1975 contest.

It was possible that some of the 1975 participants might have graduated and moved out of the school district. To make up the possible losses here, any student who participated in the State Agricultural Mechanics Interscholastic Contest within the period 1971-1975 would, therefore, qualify.

A total of 38 schools were surveyed. The sample, therefore, consisted of 38 teachers and 114 students.

Development of the Questionnaire

Some guidelines were followed in developing the instrument. The guidelines ensured that the questionnaire was presented in an acceptable, understandable form, and at the most receptive period by the respondents.

Concerning appearance and effectiveness of the instrument:

1. The questions were color coded - the blue questionnaire for the teachers and the golden questionnaire for the students.
2. Part II of the questionnaire was laid on a stem: STUDENT CONTESTANTS AT THE STATE FFA AGRICULTURAL MECHANICS INTERSCHOLASTIC CONTESTS. This stem was presented in capitals to stress the importance of the stem to each of the 18 numbered items.
3. A space was left between every question for clarity and to avoid confusion.
4. All efforts were made to put all of the questions on two pages.

The focal point of the questionnaire was the educational benefits of the FFA Agricultural Mechanics Interscholastic Competition. Other points to which questions were directed included the effectiveness of the contest as a teaching tool, as a public relations tool, as giving advantages to the world of work, and motivating potential drop-outs to stay in school.

The questionnaire was set out in two parts. Part I dealt with the background information of the sample population. Part II dealt with the

focal point of the survey.

The major items in the background information aim at determining:

1. The level of experience of the advisor at teaching Vocational Agriculture and leading FFA.
2. The importance of Agricultural Mechanics in the school curriculum.
3. The nature and extent of training given to prepare students at the different grades.
4. The extent of out-of-class preparations for contests and for the Agricultural Mechanics contests in particular.

For the students, the background information aimed at:

1. Student knowledge and experience in Agricultural Mechanics by the time of participation.
2. Student experience and participation in the FFA.
3. Student priority levels of objectives for joining the FFA.
4. Student priority levels of objectives for offering Agricultural Mechanics.

Part II of this questionnaire dealt with:

1. Educational benefits of the contest.
2. Motivation received as a result of participation.
3. Public relations and support.
4. Information as regards the world of work unveiled as a result of preparing for and participating in the contest.

This section of the survey was the same in design, setting and wording for both the students and staff. To insure that every respondent understood and answered all the questionnaire, respondents were given the following request:

> "For every statement which does not seem very clear to you, please respond as you may best understand it. Please put a question mark (?) in front of such questions."

This strikes a compromise between the researcher's convictions and the suggestions given by the test population.

Testing the Questionnaire

In developing the questionnaire, adequate consultation was made with the staff members of the Agricultural Education Department and the 4-H Club section of the Department of Extension Services. After completion of the draft, the questionnaire was tested with the Agricultural Education Class 5982 (Educational Aspects of Occupational Behavior) at Oklahoma State University.

This class consisted of experienced Vocational Agriculture teachers, supervisors, superintendents of schools and other graduate students who are presently studying either for the Master or Doctoral degree. All but two members of this class previously had the course in research design (Agricultural Education 5980 -- Research Design in Occupational Education). All class members are presently involved in research studies of their own.

Suggestions were made to insure adequate communication between the researcher and the respondent so that the questionnaire would gather the desired information. The final questionnaire was drawn with the major advisor supervising. This questionnaire collated all suggestions, additions, and subtractions and other necessary corrections as mentioned by the test population and the advisor.

Administering the Questionnaire

Because of the geographical distribution of the population and the distance from the writer, it was decided that a mailed questionnaire would be sent. However, the research decided to visit such chapters that may not respond through the mail.

This visit served as multi-purpose:

1. The researcher could familiarize himself with the school or chapter programs, ficilities and equipments, and other possible problems.
2. The researcher could hand out another questionnaire and/or collect the completed questionnaire.
3. Such a visit would greatly help increase the percentage of returns which goes a long way in assuring validity of the research.

The package mailed to the teachers contained the following items:

1. A covering letter to the teacher soliciting support.
2. The color coded questionnaires for the teacher and the students.
3. A stamped, self-adressed envelope.

This package was sent out on December 4, 1975. A reminder was sent on January 5, 1976, soliciting the returns. The use of the WATTS line to call some of the teachers was a great blessing to this paper as it went a long way in enhancing the returns.

Selecting Method of Analysis

The responses received in this study were grouped in certain areas:

1. Objective type responses, e.g. Yes or No

2. Numerical type responses.

3. Check type questions from a multiple of possibilities

4. Priority rating checks

The major section, Part II, was laid out on a Likert-type response scale which had a continuum from the strongly disagree to the strongly agree. For purposes of analysis, numerical values were assigned as follows:

Strongly Disagree	1
Disagree	2
Neutral	3
Agree	4
Strongly Agree	5

Being descriptive research, arithmetic counts, percentages and numerical ratings were made for presenting the data. A range of degrees on the Likert scale was made as follows:

Strongly Disagree	1.00 - 1.49
Disagree	1.50 - 2.49
Neutral	2.50 - 3.49
Agree	3.50 - 4.49
Strongly Agree	4.50 - 5.00

Thus, if the mean response to a particular statement was 4.52, it is regarded that the respondents strongly agreed to the statement. A mean score of 2.46 was representative of a disagree while a 3.51 will denote agreement to the statement.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The data presented in this chapter was secured from mailed questionnaires and personal visits with teachers of vocational agriculture and student participants of the state FFA agricultural mechanics interscholastic contest. The selection of respondents was based on consistency in participation and performance at contests over the last five years. All supervisory districts of the State Department of Vocational Technical Education in Agriculture were represented with 38 FFA chapters being involved in the study.

The research instrument was developed in two parts. Section I was designed to obtain background information of both the teacher of vocational agriculture and the student participants of the contest. Section II dealt with the purpose and objectives of the study.

Respondents were asked to indicate their perceptions of the effectiveness of the agricultural mechanics contest as regards:

1. The educational benefits resulting from the agricultural mechanics interscholastic contests.
2. The use of contests involving competition as a feedback for evaluation of the curriculum and programs.
3. The degree of awareness for the world of work resulting form student preparing for and participating in the contests.
4. The value of knowledge and information gained as a result of

participating in the contest.

5. The public opinion on the contest, curriculum and programs as demonstrated through public support and patronage.

The results of this study are presented in the following sections:

1. Background information.
2. Educational benefits resulting from agricultural mechanics contests.
3. Feedback information for use as an evaluation device to determine if the agricultural mechanics curriculum is meeting the needs of students at the farm, home, and world of work in agricultural mechanics.
4. Knowledge gained by preparing for and participating in the contests.
5. Awareness to the world of work and requirements in agricultural mechanics occupations received by preparation for and participating in the contests.
6. Motivational aspects of the contest.
7. Public support and patronage of the contest, the agricultural mechanics curriculum and the high school program.
8. Student performance.

Description of Population and Return

The population sample for this study consisted of 38 vocational agriculture teachers and 114 students who participated in the state FFA agricultural mechanics contest of April 1975.

Twenty-five (65.8 percent) teachers of vocational agriculture returned completed questionnaires. In addition to the teachers of

vocational agriculture, three questionnaires were sent for distribution among the student participants of which 53 (46.5 percent) were returned.

Background Information

The 25 teachers of vocational agriculture reported an enrollment of 1,513 students in vocational agriculture. The number of students enrolled in a full-time agricultural mechanics class was 488 (32.3 percent). The number of teachers in a department varied from one to three depending upon the number of students enrolled. About 52 percent of the participating schools were single teacher departments, while 35 percent reportedly being two teacher departments and 13 percent were three teacher departments.

The data presented in Table I indicates that 10 (76.9 percent) teachers in single departments have more than five years experience teaching as compared to 6 (50 percent) teachers in multiple departments.

TABLE I

YEARS OF TEACHING EXPERIENCE IN VOCATIONAL AGRICULTURE

	Years Experience							
	>5		3-5		2-3		<2	
	n	%	n	%	n	%	n	%
Single Teacher Departments	10	76.9	0	0.0	2	15.4	1	7.7
Multiple Teacher Departments	6	50.0	2	16.6	2	16.7	2	16.7
	16	64.0	2	8.0	4	16.0	3	12.0

Training in Agricultural Mechanics

Responses from Table II indicate that teachers in multiple departments tend to spend more time teaching agricultural mechanics in vocational agriculture than teachers of single departments. For instance, six (50 percent) of the teachers in multiple departments indicated that more than 50 percent of their time in vocational agriculture was devoted to agricultural mechanics while no teachers in the single departments devoted as much time.

Table II also shows that 11 (56.6 percent) teachers of vocational agriculture in single departments and eight (66.6 percent) teachers in multiple departments devoted more than 30 percent of their in-school time to skill development at the ninth grade level. At the tenth grade level, 12 (92.3 percent) instructors in single departments and 10 (83.3 percent) teachers in multiple departments devoted more than 30 percent of full-time in agricultural mechanics to skill training. It was interesting to note that six (46.2 percent) single teacher departments reported that 30-40 percent of their school time was devoted to skill development during the twelfth grade.

As illustrated in Table II, vocational agriculture teachers devoted about the same percentage of time in training teams for agricultural mechanics contests. A majority of the teachers of vocational agriculture in single and multiple departments reported spending less than 20 percent of their agricultural mechanics time to training contestants for agricultural mechanics contests.

Instructor time in agricultural mechanics devoted to skill development decreased slightly at the eleventh and twelfth grade levels.

TABLE II

RESPONSES IN REGARD TO PERCENTAGE OF SCHOOL TIME IN VOCATIONAL AGRICULTURE DEVOTED TO AGRICULTURAL MECHANICS, SKILL DEVELOPMENT IN THE LABORATORY AND TRAINING TEAMS IN AGRICULTURAL MECHANICS

Statement and Response Group	Distribution by Percentages Time Devoted to Agricultural Mechanics									
	More than 50			40-50		30-40		20-30		Less than 20	
	N	n	%	n	%	n	%	n	%	n	%
School Time in Vocational Agriculture Devoted to Agricultural Mechanics											
Single Teacher Departments	13	--	----	2	15.4	6	46.1	4	30.8	1	7.7
Multiple Teacher Departments	12	6	50.0	2	16.6	4	33.4	--	----	--	----
Instructors' Time in Agricultural Mechanics Devoted to Training Agricultural Mechanics Teams											
Single Teacher Departmemts	13	--	----	--	----	2	15.4	2	15.3	9	69.2
Multiple Teacher Departments	12	--	----	--	----	1	8.3	5	41.7	6	50.0
Instructors' Time in Agricultural Mechanics Devoted to Skill Development in the Laboratory											
Single Teacher Departments											
9th Grade	13	6	46.2	2	15.4	3	23.1	1	7.7	1	7.6
10th Grade	13	4	30.8	5	38.5	3	23.0	--	----	1	7.7
11th Grade	10	1	10.0	2	20.0	2	10.0	4	40.0	1	10.0
12th Grade	13	1	7.7	--	----	6	46.2	2	15.4	4	30.7
TOTALS		12	24.5	9	18.4	14	28.5	7	14.3	7	14.3
Multiple Teacher Departments											
9th Grade	12	3	25.0	2	16.6	3	25.0	4	33.4	--	----
10th Grade	12	5	41.7	3	25.0	2	16.6	1	8.4	1	8.3
11th Grade	12	2	16.7	2	16.6	3	25.0	3	25.0	2	16.6
12th Grade	11	--	----	1	9.1	2	18.2	3	27.3	5	45.4
TOTALS	47	10	21.3	8	17.0	10	21.3	11	23.4	8	17.0

Eight (72.7 percent) and five (41.7 percent) teachers in multiple departments devoted less than 30 percent of instruction time in agricultural mechanics skill development at the twelfth and eleventh grades, respectively. In contrast about 50 percent of the teachers in single departments devoted less than 30 percent of instruction time in agricultural mechanics to skill development at both the eleventh and twelfth grade levels.

Findings from Table III tend to suggest that single teacher departments devote a greater number of hours to training FFA teams preparing for contests than multiple departments. For example, eight (58.6 percent) teachers in single departments devoted more than 40 hours out-of-class time to prepare FFA teams as compared to five (41.7 percent) teachers in multiple departments. On the average, 13 (52 percent) teachers devoted more than 40 hours out-of-class time, while 10 (40 percent) teachers devoted less than 30 hours to prepare for contests.

Findings in Table II show that all but two (8 percent) teachers reporting devoted more than five percent of the out-of-class hours to training agricultural mechanics teams. Eight (61.6) teachers in single department devoted more than 15 percent out-of-class hours to training agricultural mechanics teams. In contrast, five (41.7 percent) teachers in multiple departments devoted more than 15 percent out-of-class time training agricultural mechanics teams.

Table V indicates that teachers of both single and multiple departments with more than five years teaching experience tend to place more emphasis upon teaching a team for the Farm Shop Skills contest. It was also reported that teachers in multiple and single departments do not place much emphasis on contest in Farm Electrification or Farm

TABLE III

RESPONSES IN REGARD TO NUMBER OF HOURS ALLOTED FOR OUT-OF-CLASS TIME DEVOTED TO ALL FFA TEAM PREPARATION

Statement and Response Group	Distribution by Number Out-of-Class Hours									
	More 50		40-50		30-40		20-30		Less 20	
	n	%	n	%	n	%	n	%	n	%
Number of Hours Out-of-Class Devoted to Preparing for all FFA Contests										
Single Teacher Departments N=13	5	38.5	3	23.1	1	7.7	2	15.3	2	15.4
Multiple Teacher Departments N=12	3	25.0	2	16.7	1	8.3	4	33.3	2	16.7
Total 25	8	32.0	5	20.0	2	8.0	6	24.0	4	16.0

TABLE IV

RESPONSES IN REGARD TO PERCENTAGE OF HOURS ALLOTED OUT OF SCHOOL TO TRAIN TEAMS IN AGRICULTURAL MECHANICS

Statement and Response Group		Response Category (Percent)									
		≥20		20-15		15-10		10-5		<5	
		n	%	n	%	n	%	n	%	n	%
Instruction Time Out of Class Devoted to Training Agricultural Mechanics Teams											
Single Teacher Department	N=13	4	30.8	4	30.8	2	15.4	2	15.3	1	7.7
Multiple Teacher Department	N=12	3	25.0	2	16.7	3	25.0	3	25.0	1	8.0
Total	25	7	28.0	6	24.0	5	20.0	5	20.0	2	8.0

TABLE V

THE MOST POPULAR AGRICULTURAL MECHANICS CONTEST AREAS WITH TEACHERS BY YEARS OF EXPERIENCE

Popular Agricultural Mechanics Contests	N	Years of Experience: More Than 5		3-5		2-3		Less Than 2	
		n	%	n	%	n	%	n	%
Single Teacher									
Farm Shop Skills	7	5	71.4	1	14.3	--	----	1	14.3
Farm Power and Machinery	3	1	33.3	--	----	1	33.3	1	33.4
Soil and Water Conservation	2	2	100.0	--	----	--	----	--	----
Farm Electrification	2	1	50.0	1	50.0	--	----	--	----
Farm Structures	1	1	100.0	--	----	--	----	--	----
Total	15	10	66.7	2	13.4	1	6.6	2	13.3
Multiple Teacher									
Farm Shop Skills	10	8	80.0	--	----	2	20.0	--	----
Farm Power and Machinery	1	--	----	--	----	1	10.0	--	----
Soil and Water Conservation	4	2	50.0	1	25.0	--	----	1	25.0
Farm Electrification	--	--	----	--	----	--	----	--	----
Farm Structures	--	--	----	--	----	--	----	--	----
Total	15	10	66.7	1	6.7	3	20.0	1	6.6

Structures. Some of the reasons given by teachers for training in Farm Shop Skills area included: "Our program is based on arc welding and oxyacetylene cutting and welding," "The contest is more understandable," "This is an area where students get the most practice."

Findings from Table VI indicate that 18 (72 percent) teachers agreed that the participation of the students at the contests was worth the investment of their time while five (20 percent) were undecided. Seventeen (68 percent) teachers agreed that the performance of the students in the contest was worth the investment of time, while six (24 percent) were undecided.

Background information pertaining to the students is rather incomplete and appears that more time from the respondents was expected than they were prepared to offer. Thus there were many questions left unanswered by the students.

Responses shown on Table VII indicate that at the time of participation in the contest, 24 (45.3 percent) students were enrolled in full-time agricultural mechanics course. Thirty-nine (73.6 percent) students were enrolled in vocational agriculture classes in which agricultural mechanics was taught as part of the course content.

Findings from Table VIII indicated that the students had been involved in the FFA and they already had some time to decide where they wanted to go and why. The returns revealed that 18 (35.3 percent) students had been in the FFA for more than three years while 24 (47.1 percent) had at least two years in the organization.

TABLE VI

RESPONSES IN REGARDS TO WORTH OF PARTICIPATION AND PERFORMANCE OF STUDENTS AT CONTESTS AS PERCEIVED BY THE TEACHERS OF VOCATIONAL AGRICULTURE

Statement and Response Group	N	Yes		Undecided		No		No Response	
		n	%	n	%	n	%	n	%
F_1									
STD	13	10	76.9	2	15.4	--	---	1	7.7
MTD	12	8	66.7	3	25.0	--	---	1	8.3
TOTAL		18	72.0	5	20.0	--	---	2	8.0
F_2									
STD	13	9	69.2	4	30.8	--	---	--	----
MTD	12	8	66.7	2	16.6	--	---	2	16.6
TOTAL		17	68.0	6	24.0	--	---	2	8.0

F_1 = Participation of Students at Agricultural Mechanics Contests Worth Investiment of Teachers' Time and Energy.
F_2 = Performance of Students at Agricultural Mechanics Contests Worth Investment of Teachers' Time and Energy.
STD = Single Teacher Department
MTD = Multiple Teacher Department

TABLE VII

COURSE ENROLLMENT AT THE TIME OF PARTICIPATING IN THE AGRICULTURAL MECHANICS CONTEST

	Yes		No		No Response	
	No.	%	No.	%	No.	%
Full-time Agricultural Mechanics Class N=53	24	45.3	26	49.1	3	5.6
Agricultural Mechanics Class as Part of Vocational Agriculture N=53	39	73.6	7	13.2	7	13.2

TABLE VIII

NUMBER OF YEARS BELONG TO THE FFA

	No.	Percent
More than 3 years	18	35.3
2 to 3 years	24	47.1
Less than 2 years	9	17.6
No Response	2	----

N=51

Objectives for Joining the FFA

Findings from Table IX show that students view highly the selected objectives for joining the FFA. No of objective received less than a 4.00 rating indicating a high objective and thus a rank order was established as follows:

1. To develop leadership qualities
2. To win awards
3. To travel and meet other FFA members
4. To supplement my learnings in vocational agriculture.

Table X reports the objectives for enrolling in a separate agricultural mechanics course in rank order as follows:

1. To develop necessary mechanics skills for farm operations
2. To win awards in agricultural mechanics
3. To qualify for employment in agricultural mechanics

An interesting point was that no student rated any of the objectives less than average.

Findings from Table XI indicate that students received the greatest amount of training for contests at the tenth grade level. Twenty-seven (56.3 percent) students reported having some training at the ninth grade while 26 (68.4 percent) and 28 (75.7 percent) students reported they had much training at the tenth and eleventh grade levels, respectively.

The degree of training increased gradually from the ninth grade, and peaked at the eleventh grade. The amount of training received at the different grade levels in rank order is as follows:

1. Highest amount of training at tenth grade.
2. Higher amount of training at eleventh grade.

TABLE IX

OBJECTIVES FOR JOINING THE FFA

		Highest		High		Average		Low		Very Low		No Response	Cumulative Score	Average Score
	N	n	%	n	%	n	%	n	%	n	%			
To Develop Leadership	42	20	47.6	15	35.7	7	16.7	--	----	--	----	11	181	4.31
To Win Awards	38	14	36.8	20	52.6	4	10.6	--	----	--	----	15	162	4.26
To Travel and Meet Other FFA Members	44	20	45.5	14	31.7	8	18.2	1	2.3	1	2.3	9	183	4.16
To Supplement My Learnings	34	14	41.2	10	29.4	6	17.6	6	4.8	--	----	19	136	4.00

N is maximum response for any objective. It is used for computation of average scores.

TABLE X

OBJECTIVES FOR ENROLLING IN A SEPARATE AGRICULTURAL MECHANICS COURSE

		Highest		High		Average		Low		Very Low		Cummulative Score	Average Score
	N	n	%	n	%	n	%	n	%	n	%	n	%
To develop necessary skills for farm operations	36	26	72.3	7	19.4	4	8.3	--	---	--	---	175	4.9
To qualify for employment	30	15	5.0	9	3.0	6	2.0	--	---	--	---	89	2.96
To win awards	20	13	48.1	5	18.3	9	33.5	--	---	--	---	112	4.15

TABLE XI

GRADE LEVELS AND AMOUNT OF TRAINING RECEIVED FOR THE AGRICULTURAL MECHANICS CONTEST

	N	None		Some		Much		No Response	Total	Average Score
		n	%	n	%	n	%			
9th Grade	48	5	77.8	27	56.3	16	33.3	5	107	2.23
10th Grade	38	--	----	12	31.6	26	68.4	15	112	2.95
11th Grade	37	1	2.7	8	21.6	28	75.7	16	101	2.73
12th Grade	32	--	----	18	56.2	14	43.8	21	78	2.44

For Purpose of analysis:

1. The degree of training is rated thus; none=1, some=2, much training=5.
2. N is maximum response for the grades, i.e. total of all responses on the degree of training of any particular grade level.
3. Average score is used for ranking.

3. High amount of training at ninth grade.
4. Low amount of training at twelfth grade.
5. Very Low (almost no training) below ninth grade.

Educational Benefits

Table XII contains the comparison of teachers and student perceptions as to educational benefits of the FFA agricultural mechanics interscholastic contests.

Both the teachers and the students agree to the statement Number 1 that student contestants at the Oklahoma FFA agricultural mechanics interscholastic contests learn the skills tested for in the contes more completely than non-contestants.

It is interesting to note the (a) four (16 percent) teachers and eight (15.1 percent) students strongly disagreed and disgreed with this statement, (b) fourteen (56 percent) teachers and 31 (58 percent) students agreed with the statement.

Respondents generally disagreed with the statement Number 2 that student contestants at the Oklahoma FFA agricultural mechanics interscholastic contests learn all agricultural mechanics skills for the world of work less completely than the non-contestants. Five (20 percent) teachers and 17 (32.1 percent) students strongly disagreed to the statement, while 13 (52 percent) teachers and 23 (43.4 percent) students disagreed.

Respondents were neutral to the statement Number 3 that student contestants at the Oklahoma FFA agricultural mechanics contest require more practice in the interpretation of sketches, diagrams, and simple constructional details than non-contestants.

TABLE XII

COMPARISONS OF TEACHER AND STUDENT PERCEPTIONS OF THE RELATIVE EDUCATIONAL BENEFITS OF THE AGRICULTURAL MECHANICS CONTEST

Objective		Responses										Average Score	Average Response
		Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree			
		n	%	n	%	n	%	n	%	n	%		
Student Contestants													
1. Learn All Agricultural Mechanics Skills Tested in Contests More Completely	T	1	4.0	3	12.0	--	----	14	56.0	7	28.0	3.92	A
	S	3	5.7	5	9.4	8	15.1	31	58.5	6	11.3	3.60	
2. Learn All Agricultural Mechanics Skills for the World of Work Less Completely	T	5	20.0	13	52.0	4	16.0	3	12.0	--	----	2.20	D
	S	17	32.1	23	43.4	7	13.2	3	5.7	3	5.6	2.09	
3. Require More Practice in Interpretation of Sketches, Diagrams, and Simple Construc-tional Details	T	--	----	9	36.0	6	24.0	8	32.0	2	8.0	3.12	N
	S	--	----	8	15.1	15	28.3	25	47.2	5	9.4	3.50	
7. Produce a Higher Percentage of Uniform Welds with Arc and Oxyacetylene Equipment	T	1	4.0	2	8.0	--	----	10	40.0	12	48.0	4.20	A
	S	3	5.7	1	1.9	9	17.0	26	49.0	14	26.4	3.88	
13. Receive More of a Challenge for Skill Development	T	--	----	--	----	7	28.0	15.	60.0	3	12.0	3.84	A
	S	3	5.7	5	9.4	13	24.5	22	41.5	10	18.9	3.58	

1	2	3	4	5
SD - Strongly Disagree	D - Disagree	N - Neutral	A - Agree	SA - Strongly Agree

The teachers rated highest the statement, Number 7, that student contestants at the Oklahoma FFA agricultural mechanics interscholastic contests produce a higher percentage of uniform welds with arc and oxyacetylene equipment than non-contestants. Twelve (48 percent) teachers and 14 (26.4 percent) students strongly agreed to the statement. Although students did not rate this statement very high, only less than 10 percent disagreed with it.

Determination to develop skills raises all forms of challenge. Findings from Table XII showed that teachers and students surveyed agreed to the statement, Number 13, that student contestants at the Oklahoma FFA agricultural mechanics contest received more of a challenge for skill development than non-contestants. All teachers acknowledged this fact while eight (16.1 percent) student respondents did not. Twenty-two (41.5 percent) students agreed and 10 (18.9 percent) strongly agreed with the statement. Treating this table as a unit, it was discovered that teacher and student rankings of the objectives were the same.

Knowledge Gained

Table XIII shows a comparison of teacher/student ratings of the knowledge gained as a result of participating at the Oklahoma FFA Agricultural Mechanics Contests. The knowledge gained is expressed as attitude at work, efficiency and dexterity at manipulating tools and equipment, care at maintenance activities, etc.

Twenty-six (49.1 percent) students strongly agreed with an average score 4.05 with the statement, Number 4, that student contestants at the Oklahoma FFA agricultural mechanics contest demonstrate more safety

TABLE XIII

COMPARISON OF TEACHER AND STUDENT PERCEPTIONS OF THE KNOWLEDGE GAINED AS A RESULT OF PARTICIPATION AT THE AGRICULTURAL MECHANICS INTERSCHOLASTIC CONTEST

Objective		Responses										Average Score	Average Response
		Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree			
		n	%	n	%	n	%	n	%	n	%		
Student Contestants													
4. Demonstrate More Safety with Hazardous Materials and Equipment	T	3	12.0	5	20.0	4	16.0	10	40.0	3	12.0	3.20	N*
	S	2	3.8	6	11.3	5	9.4	14	26.4	26	49.1	4.08	A
5. Perform Preventive Maintenance on Farm Machinery More Completely	T	2	8.0	7	28.0	3	12.0	10	40.0	3	12.0	3.20	N
	S	1	1.8	8	15.1	15	28.4	22	41.5	9	17.0	3.68	A
8. Make Lower Scores on Written Examinations	T	7	20.0	11	44.0	1	4.0	6	24.0	--	----	2.24	D
	S	24	45.3	21	39.6	7	13.2	--	----	2	3.8	1.83	D
9. Make a Higher Score on Problem Solving	T	--	----	3	21.0	3	12.0	15	60.0	4	16.0	3.80	A
	S	--	----	6	11.8	11	21.6	28	54.9	6	11.8	3.67	A

* SD - Strongly Disagree, D - Disagree, N - Neutral, A - Agree, SA - Strongly Agree
1 2 3 4 5

with hazardous materials and equipment than non-contestants. The teachers were rather neutral to the statement.

The two groups of respondents did not reach a same conclusion on the statement, Number 6, that contestants perform preventive maintenance on farm machinery more completely than non-contestants. The students agreed to the statement while the teachers were neutral. Ten (40 percent) teachers and 22 (41.5 percent) students agreed.

Respondents disagreed to the statement, Number 8, that contestants make lower scores on written examinations than non-contestants. Twenty-four (45.3 percent) students and seven (28 percent) teachers strongly disagreed, while 11 (44 percent) teachers and 21 (about 40 percent) students disagreed with the statement. Respondents generally agreed to the statement, Number 9, that contestants make a higher score on problem solving than non-contestants. Fifteen (60 percent) teachers and 28 (54.9 percent) students agreed to the statement.

World of Work

From Table XIV we see that respondents generally disagree to the statement, Number 12, that contestants were not as well prepared for the world of work. The very low average scores and rankings will suggest that the corollary holds true.

Respondents also disagreed to the statement, Number 14, that student contestants at the Oklahoma FFA agricultural mechanics inter-scholastic contests are less aware of the world of work and its requirements than non-contestants.

TABLE XIV

STUDENT/TEACHER PERCEPTION AS REGARDS THE PREPARATION FOR THE WORLD OF WORK IN AGRICULTURAL MECHANICS

	Objectives		Responses										Average Score	Average Response
			Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree			
			n	%	n	%	n	%	n	%	n	%		
Student Contestants														
12.	Are Not as Well Prepared for the World of Work in Agricultural Mechanics	T	5	32.0	9	36.0	6	24.0	--	----	2	8.0	2.16	D*
		S	17	32.6	25	48.1	2	3.9	5	9.6	3	5.8	2.04	D
14.	Are Less Aware of the World of Work and its Requirements	T	7	28.0	9	36.0	5	20.0	4	16.0	--	----	2.24	D
		S	11	21.2	29	55.8	4	7.5	6	11.5	2	3.8	2.12	D

* SD - Strongly Disagree, D - Disagree, N - Neutral, A - Agree, SA - Strongly Agree
1 2 4 5 6

Public Support and Patronage

Table XV shows the perception of teachers and students of vocational agriculture as regards the benefits of the agricultural mechanics FFA interscholastics contests in relation to public support.

Average scores and ranks were high here. Twelve (48 percent) teachers and 30 (56.6 percent) students agreed to the statement, Number 16, that student contestants at the Oklahoma FFA agricultural mechanics interscholastic contest help encourage business corporations and private agencies to donate awards and support for the agricultural mechanics program. Five (20 percent) teachers and 14 (26.4 percent) students strongly agreed to this statement. The overall score was 3.98.

Regarding parental and local support, teachers were neutral with an average score of 3.416, while the students agreed with an average score of 4.018. The high rating given by the students boosted the overall average to 3.72.

The high rating may result from the view point of prize and award donation. It appears that students looked very high on awards and prizes donated by parents and other patrons.

Value of Contest as an Evaluation Tool

Findings from Table XVI show that both the teacher and student disagreed with the statement, Number 5, that student contestants at the Oklahoma FFA agricultural mechanics interscholastic contest have weaker agricultural production programs. Respondents also disagreed to the statement, Number 18, that contestants view the contest activities as being too difficult and demanding for students in high schools than

TABLE XV

STUDENT/TEACHER PERCEPTIONS AS TO THE BENEFITS OF AGRICULTURAL MECHANICS CONTEST IN RELATION TO PUBLIC SUPPORT AND PATRONAGE

Selected Objectives		Response Category: Strongly Disagree n	%	Disagree n	%	Neutral n	%	Agree n	%	Strongly Agree n	%	Average Score	Average Response
15. Help Encourage Parents and Other Local Patrons to Support the Agricultural Mechanics Programs	T	1	4.2	4	16.7	8	33.3	6	25.0	5	20.8	3.42	A
	S	2	3.8	--	----	8	15.1	28	52.8	15	28.3	4.02	
16. Help Encourage Business Corporations and Private Agencies to Donate Awards and Support the Agricultural Mechanics Program	T	--	----	--	----	8	32.0	12	48.0	5	20.0	3.88	A
	S	--	----	--	----	9	17.0	30	56.6	14	26.4	4.09	

SD - Strongly Disagree, D - Disagree, N - Neutral, A - Agree, SA - Strongly Agree
1 2 3 4 5

TABLE XVI

COMPARISON OF TEACHER/STUDENT RATINGS OF RELATIVE VALUE OF THE AGRICULTURAL MECHANICS CONTESTS AS A FEEDBACK SYSTEM ON THE CURRICULUM

Selected Objective		Response Category: Strongly Disagree n	Strongly Disagree %	Disagree n	Disagree %	Neutral n	Neutral %	Agree n	Agree %	Strongly Agree n	Strongly Agree %	Average Score	Average Response
5. Have Weaker Agricultural Production Programs	T	5	20.8	7	29.2	5	20.8	3	12.5	4	16.7	2.75	D*
	S	27	50.9	19	35.8	3	5.7	--	----	4	7.6	1.77	
17. Provides Teacher with Information for Determining the Adequacy of the Agricultural Mechanics Curriculum for the World of Work	T	--	----	--	----	5	20.0	14	56.0	6	24.0	4.04	A
	S	--	----	--	----	13	24.5	28	52.8	12	22.6	3.98	
18. View the Contest Activities as being Difficult and Demanding for the High School Student	T	4	16.0	13	52.0	5	20.0	2	8.0	1	4.0	2.32	D
	S	14	26.4	17	32.1	15	28.3	7	13.2	--	----	2.28	

*SD - Strongly Disagree, D - Disagree, N - Neutral, A - Agree, SA - Strongly Agree
1 2 3 4 5

non-contestants. On the agricultural production program, 27 (50.9 percent) students and five (20.8 percent) teachers strongly disagreed. Less than 10 percent of the population agreed with the statement. That 17 (6 percent) students and 31 (58 percent) teachers disagreed that student contestants view the contest activities as difficult implies that the activities are not difficult for the students.

It is interesting that none of the respondents disagreed in any way to the statement, Number 17, that contestants at the Oklahoma FFA agricultural mechanics contest provide teachers with information for determining if the local agricultural mechanics curriculum is adequate for the world of work. With the second highest average rating (4.04) by the teachers, it can be inferred that teachers perceived the performance of students at contests as a tool for evaluating the adequacy of the curriculum regarding the requirements of the world of work.

Contest Used as a Motivational Tool

There was a difference of opinion on statement Number 10 that student contestants at the Oklahoma FFA agricultural mechanics interscholastics contests are more interested in attending school than non-contestants. Findings from Table XVII show that the students felt that preparing for and participating in the contest motivated them to attend school. However, about 1 in every 3 respondents were neutral to this statement.

Respondents disagreed to the statement, Number 11, that student contestants are more prone to drop-out of school thatn non-contestants. Twelve (48 percent) teachers and 21 (39.6 percent) students disagreed to the statement. The very low average score of 1.880 and ranking 18th

TABLE XVII

COMPARISON OF TEACHER/STUDENT RATINGS OF RELATIVE VALUE OF AGRICULTURAL MECHANICS AS A MOTIVATIONAL TOOL

Selected Objective		Response Category										Average Score	Average Response
		Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree			
		n	%	n	%	n	%	n	%	n	%		
10. Are More Interested in Attending School	T	3	12.0	3	12.0	10	40.0	9	36.0	--	----	3.00	N*
	S	6	11.3	7	13.2	17	32.1	17	32.1	6	11.3	3.57	A
11. Are More Prone to Drop-Out of School	T	9	36.0	12	48.0	2	8.0	2	8.0	1	4.0	1.64	D
	S	23	43.4	21	39.6	7	13.2	1	1.9	1	1.9	1.79	

*SD - Strongly Disagree, D - Disagree, N - Neutral, A - Agree, SA - Strongly Agree
1 2 3 4 5

are indications of how the respondents disagreed with the statement.

Performance at the 1975 Agricultural Mechanics Contest

To gain an insight into the performance of the students at the contests, an analysis of the scores was made. This, it was hoped, could help determine the areas and levels of difficulty and the performance of the students in the different areas of the contest. The Oklahoma FFA agricultural mechanics contest covers activities in the areas of:

1. Farm Power and Machinery
2. Soil and Water Management
3. Farm Structures and Environment
4. Farm Shop Skills
5. Electric Power and Processing

Contest in each area involves at least two of these three phases: written examination, problem solving, and shop skills. A chapter team for each of the contests is made up of three members. The team placing first in each contest is awarded a trophy while the highest three individual contestants are awarded medals. Representatives for the national contest are selected as a result of performance at state contests. To qualify for the national contest, a chapter must enter a team in all the five areas. The placing received by the chapters in each of the designated areas are totaled to determine the national contest representatives for Oklahoma.

Summarizing Table XVIII on numerical basis, 19 (2.8 percent) students scored more than 45 points on only three of nine numbered

TABLE XVIII

DETAILED BREAKDOWN OF INDIVIDUAL PERFORMANCES
AT THE CONTEST

	N	Score										Minimum Score
		50*-45		44-40		39-35		34-30		Less Than 30		
Farm Shop Skills		n		n	%	n	%	n	%	n	%	
a. Oxy-Acetylene	108	--	----	3	2.8	10	9.3	30	27.8	65	60.2	0
b. Arc Welding	108	--	----	6	5.6	6	5.5	38	35.2	58	53.7	0
c. Written Examination	108	--	----	9	8.3	13	12.1	24	22.2	62	57.4	14
d. Identification of Tools	108	1	0.9	12	11.1	11	10.2	20	18.5	64	59.3	0
Farm Power & Machinery**	66	11	16.9	21	31.8	14	21.2	4	6.1	15	22.7	5
Electric Power & Processing												
a. Electric Motor and Skills	48	7	14.6	3	6.3	2	4.2	3	6.3	33	68.8	15
b. Identification of Elecrical Tools, etc.	48	--	----	4	8.3	10	20.8	4	8.3	30	62.5	15
c. Electric Motors	48	--	----	--	----	--	----	3	6.3	45	93.7	11
d. Written Examination	48	--	----	--	----	1	2.1	1	2.1	46	95.8	10
Totals	690	19	2.8	58	8.5	66	9.7	127	18.4	418	60.6	

*Maximum Mark Obtainable -- 50 points per item **Eleven participants from two schools were examined on six items -- Details not available.

contest items. Four hundred and eighteen (60.6 pecent) students scored less than 30 points on all items. Performance was best in the area of Farm Power and Machinery with 11 (16.9 percent) students scoring very high, i.e. 45 or above. Fifteen (22.7 percent) students scored less than 30 points in this area. Performance in the Electric Motor contest area was poor with three (6.3 percent) of 48 students scoring more than 60 percent.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study can be simply stated as follows:

To identify the perceptions of the students and teachers of vocational agriculture as regards:

1. The educational benefits of the agricultural mechanics contest of the FFA interscholastic competition.
2. The knowledge gained by the students as a result of preparation for and participation in the FFA agricultural mechanics interscholastic competition.
3. The contest as a feed-back mechanism with respect to the adequacy of the curriculum regarding the needs of the community and the world of work.
4. Whether the student became more aware of the world of work in agricultural mechanics and its requirements or not.
5. Whether preparation for and participation in the contests motivated students to attend and stay enrolled in school.

Methods and Procedure of the Study

A list of all the schools represented in the Oklahoma FFA agricultural mechanics interscholastic contests for the period 1970-1975 was carefully studied. Chapters consistently participating in the contests were identified. Thirty-eight teams that ranked within the

top five were selected for the survey. Questionnaires were forwarded to the 38 vocational agriculture teachers and 114 vocational agriculture students. The responses were placed on a Likert type scale continuous from strongly disagree to strongly agree.

Findings of the Study

The study was concerned with determining and comparing the perceptions of students who participated in the state FFA agricultural mechanics contests and teachers of vocational agriculture who had prepared students for the contests. Five specific objectives were developed to guide the conduct of the study. The background information of the respondents and the research findings for each area of the study are reported below.

Background Information. The first aspect of the study was concerned with the amount of experience that the teachers had in teaching vocational agriculture. Other aspects of the teacher background information included the importance of agricultural mechanics in the curriculumm, the time input in preparing agricultural mechanics teams, and the respective grade levels at which skill trainings are given.

The study showed that 1,513 students are enrolled in vocational agriculture in the 25 schools responding. Of these, 488 students were enrolled in separate agricultural mechanics courses. Thirteen of the 25 schools participating in the survey are single departments, while three schools have three teacher departments. More than 64 percent of the FFA advisors in these schools taught vocational agriculture for more than five years. This agrees with the existing situation in the

state of Oklahoma in which about 60 percent of the vocational agriculture teachers are reported as having 10 years experience.

Skill Development. Teachers in multiple departments tend to spend more time teaching agricultural mechanics in vocational agriculture than teachers of single departments. General skill training is done at the ninth and tenth grade levels while training for specific contests are done at the eleventh and twelfth grade levels. In training teams for contests a majority of teachers of vocational agriculture in single and multiple departments reported spending less than 20 percent of agricultural mechanics time to training teams for contests.

Out-of-class time spent preparing participants for the FFA contests averaged 32.6 hours. As a comparison, 11 of the 25 schools responding were below this average with the highest amount being 50 hours.

Popular Areas of Contests

Teachers with more than five years teaching experience seemed to have specialized in farm shop and tend to interprete agricultural mechanics as welding. Most of the agricultural mechanics programs in vocational agriculture are based on arc welding and oxyacetylene cutting and welding. Thus, the farm shop skill contest area was the most popular with almost all chapters having a team entered in the contest. The rank order of popularity was as follows:

1. Farm Shop Skills
2. Soil and Water Management
3. Farm Power and Machinery

4. Rural Electrification
5. Farm Structures and Environment

Teachers generally agreed that the participation and performance of the student contestants were worth the investment of their time.

Student Background Information

Background information on the students was concerned mainly with the objectives for joining the FFA, enrolling in agricultural mechanics, and the nature and amount of training at the different grade levels.

The findings were as follows:

1. Students generally enrolled in a separate course or in courses in which agricultural mechanics was taught during the semester that they participated in the contests.
2. Forty-two of the 53 students responding were members of the FFA for more than two years.
3. Students' objectives for joining the FFA were ranked in the following order:
   a. To develop leadership qualities
   b. To win awards
   c. To travel and meet other FFA members
   d. To supplement my learning in vocational agriculture
4. Students' objectives for enrolling in agricultural mechanics were as follows:
   a. To develop necessary skills for farm operations
   b. To win awards in agricultural mechanics
   c. To qualify for employment in agricultural mechanics

Educational Benefits of the FFA Agricultural Mechanics Contest

The educational benefits acrueing from the contest are noticed in terms of skills developed by the contestants which non-contestants perhaps did not develop. Findings from the survey reveals that student contestants at the Oklahoma FFA agricultural mechanics contests:

1. Learn all the skills tested for in the contest more completely than non-contestants.
2. Stand more to the challenge for skill development than non-contestants.
3. May not require more practice in the interpretation of sketches, diagrams, and simple constructional details than non-contestants.
4. Learn all agricultural mechanics skills for the world of work more completely than non-contestants. This shows that the activities tested for in the contest were closely related to the skills required in the world of work. Thus, a prospective contestant in the FFA agricultural mechanics interscholastic competition right from the time of practicing for the contest is being prepared for the world of work.
5. Produce better uniform welds with both gas and arc welding equipment than non-contestants. Welding is the most popular contest in agricultural mechanics. Most high school shops in the state have adequate welding equipment, tools, and appliances. Many schools base their agricultural mechanics courses on welding, while others prepare students soley for it

because (in the words of the teachers) "The contest is more understandable," "They like it and I like it," "This is the area where they get the most practice," etc. It appears that most teachers with more than five years of experience understand agricultural mechanics as welding.

Agricultural Mechanics Contests as a Feedback or Evaluation Mechanism

All programs that are well planned usually have built-in evaluative systems. If the activities of the FFA agricultural mechanics contest are well planned, designed, and arranged, faults and flaws can be detected easily.

As a result of the survey, it could be concluded that student contestants at the Oklahoma FFA agricultural mechanics contests:

1. Did not have weaker agricultural production programs than non-contestants.
2. Did not view the contest activities as being either too difficult or demanding for high school students.
3. Did provide teachers with information for determining if the local agricultural mechanics curriculum is adequate for the world of work.

Knowledge Gained as a Result of Preparation for and Participation in the Agricultural Mechanics Contests

Student contestants at the Oklahoma agricultural mechanics contests did not only learn the manipulative skills but also the

cognitive and affective aspects as revealed by the following conclusions.

Contestants:

1. Scored higher on problem solving activities than non-contestants. They are more able to intergrate the classroom learnings with the laboratory and farm-home situations than non-contestants.
2. Make higher scores on written tests than non-contestants.
3. Are more careful when working with hazardous materials and equipment.
4. Did not perform preventive maintenance activities on farm machinery more completely than non-contestants.

It seems there is a degree of contradiction here. Since the items in the written examination, problem solving, and safety activities are well related to the world of work and the farm-home situation as well as involved in preventative maintenance, it would be expected that student contestants at the Oklahoma FFA agricultural mechanics contest should be able to perform preventive maintenance activities on farm machinery more completely than non-contestants.

The World of Work

Findings from the study revealed that contestants at the Oklahoma FFA agricultural mechanics interscholastic contest:

1. Were more aware of the world of work and its requirements than non-contestants.
2. Were better prepared for the world of work in agricultural mechanics than non-contestants. This is a big boost for any

FFA member interested in agricultural mechanics occupations to "buckle-up" and try to excel at agricultural mechanics contests.

As a Motivational Tool

If youths are motivated and properly directed, they constitute a force that could "move mountains." From the results of the survey, it can be concluded that student contestants at the Oklahoma FFA agricultural mechanics interscholastic contests:

1. Were motivated to stay enrolled in school.
2. Were not necessarily more interested in attending school as compared to non-contestants.

One of the objectives as to why some students joined FFA was to get out of class. A contestant may be more interested in developing manipulative skills than in regular classroom learnings. He may, therefore, be more interested in attending laboratory classes than regular classes.

Public Relations and Patronage

Vocational learnings must be geared to the needs of a society. The parents, business companies, private agencies, and corporations are the prospecitive employers. This group also forms the community which the high school serves. The results of the survey showed that student contestants helped encourage business companies, other local agencies, parents, and corporations to support the agricultural mechanics program as well as to donate prizes for the contests.

The students ranked the donation of prizes and awards high which

seemed to suggest that they placed a great value on the awards following the excellent performance

Student Performance at State Contest as Revealed by Scores at the 1975 Competition

From the analysis of the scores, it was concluded that scores in the Electric Power and Processing and Farm Shop Skills contests were skewed to the extreme right. Possible reasons for this poor performance include:

1. The electric motor contest is rather new in the contest.
2. The teacher may not have adequate information on the range of items that students should expect on contest. Invariably teachers taught the general topics related to the world of work due to lack of specific information for the contest.
3. Some teams were not well prepared for the contests. This was evident from the fact that contestants actually present scored zero on the contest items.

The very high performance in the Farm Power and Machinery contest may be due to the fact that some of the students could be more familiar with the farm tractors and machinery. Many students from rural areas raised on mechanized farms, possibly have maintained and adjusted farm power and machinery from the "cradle."

Conclusions

Generalizations of findings of this study are limited to Oklahoma FFA agricultural mechanics interscholastic contest. Based upon the

analysis of the study, the investigator arrived at the following conclusions:

1. Vocational agriculture teachers tend to provide more time for skill development in agricultural mechanics at the ninth and tenth grade levels. It was generally reported that teachers devoted about the same percentage of time in agricultural mechanics to train team contestants.
2. There are educational benefits for contesting in the Oklahoma FFA agricultural mechanics interscholastic contest. Such benefits received by students participating included:
   a. the learning and developing of necessary skills for the world of work in agricultural mechanics.
   b. the production of better uniform welds with both gas and arc welding equipment.
   c. scoring high on examinations involving written, problem solving and manipulative skill items.
   d. being more careful when working with hazardous materials and equipment.
3. Student participants at the Oklahoma FFA agricultural mechanics contest are more aware of and prepared for the world of work in agricultural mechanics.
4. The contestants did not perform well in the area of Electric Power and Processing as compared with the areas of Farm Shop skills and Farm Power and Machinery. Performance of students at the agricultural mechanics contest is an indication of the depth of treatment of the curriculum, contest activities, and relevance of the curriculum to the world of work. The

contest activities were not difficult and did benefit both the teachers and the students. Caution should however be exercised in using the outcomes of contests as basis for evaluation.

5. Public corporations and business companies have the opportunity to contribute to the welfare and development of rural youth by donating prizes for recognition awards at contests. This affords the business companies the opportunity for favorable publicity.
6. Preparation for and participation in the Oklahoma FFA agricultural mechanics interscholastic contest have motivated and encouraged students to stay enrolled in school but not necessarily to attend regular classes.

Recommendations

The opinion of the writter is expressed in the following suggestions and recommendations based on the data presented in this study for consideration by those who are involved in training vocational agricultural teachers and students.

1. Vocational agriculture teachers should not specialize in only one area of the contest. The contest area of Farm Shop Skills is always overcrowded with competitors while areas of Rural Electrification and Farm Machinery barely have ample numbers of competitors.
2. Participation and performance in the Rural Electrification is far below average. The investigator recommends that a general survey be made across the state and possibly the

nation to bring out the importance and the position of electricity in agriculture as an energy saver.

3. Professional Improvement Courses should be organized for agricultural teachers in Rural Electrification, and Farm Structures and Environment to bring out the importance of these areas in the farming enterprise and agri-business.
4. District and local contests should be patterned after the state contest. This would result in more consistency in the contest system.
5. The investigator would like to recommend that a further study be conducted to find out how the student contestants at the Oklahoma FFA agricultural mechanics interscholastic contests perform at preventive maintenance activities on farm machinery, as well as, in reading and interpretation of sketches, drawings, and blueprints.

Implications to Nigeria

The need to educate Nigerian youths for the world of work in the technologically developing world had been felt by educators for more than a century. Tai Solarin (42), an educational innovator, wrote:

> The need for a change has been felt all the time, but usually by individuals who themselves, invariably were not in the positions to substantiate the dreams that haunted them. Way back in 1852, a Mr. Henry Venn, the General Secretary of the Church Missionary Society in London, declared that they wished to avoid the type of literary grammar school they had created in Sierra Leone. 'We are not' he said, 'to educate a few young gentlemen, but to make a model, self-supporting, educational institutions by combining industrial labor (with book learning)'(p. 121).

Henry Venn had the foresight that with the changes brought about by the industrial revolution literary education cannot produce the type of worker required in the developing world of work. The investigator, therefore, feels that there is a need for a change in the Nigerian educational system.

The introduction of vocational agriculture into the Nigerian high schools will enable youths to develop ability to study, think, and solve problems in the areas of farming and agri-business. Farming and farm products are the only renewable natural resources -- the foundation stone of Nigeria. The "learning by doing" philosphy of vocational agriculture through the FFA organizagtion provide students an opportunity to move away from the rote learning system of the classroom into an atmosphere conducive to the world of work.

The farmers of America constitute about four percent of the population but supply about 40 percent of the nation's strength. America with her agricultural has become the breadwinner of the world. Through education programs such as that made possible through vocational atriculture, other countries could provide for greater abundance of world food.

Education Through Youth Organizations

All concerned in shaping the course and content of education in Nigeria should do whatever is practicable within their power to encourage youth organizations. Organizations such as the FFA are a must to foster the growth of agricultural development.

The 4-H Club and the Young Farmers' Club are based in the high schools but have not been intergrated into the high school curriculum.

The present condition under which the 4-H Club and the Young Farmers' Club have been organized and managed in Nigeria are not conducive to effecient operation.

The educational authorities should not lose sight of the fact that youth organizations encourage respect for occupational preparation and a desire to acquire skills, knowledge, and attitudes for good citizenship throughout life. This study has showed that contests in youth organizations are great motivators to excellent performance.

The FFA is the oldest National Vocational Youth Club in America. Through the years, it has distinguished itself as the framework around which vocational education in agriculture is built. The researcher therefore, recommends that youth organizations should be organized in Nigeria patterned after the vocational youth clubs in America, especially the FFA.

The organization of vocational agriculture youth clubs in Nigeria could be an effective and dramatic method of increasing training, social, and economic opportunities in the towns and villages in the rural areas. It could be a method of evolving a new source of leaders committed to democracy, freedom, justice, and abundant life in rural and urban settings.

Contests and Competitions

One of the major activities with high motivational value in the FFA are contests involving competitions. The investigator feels that contests and competitions in all areas of vocational agriculture should be introduced into Nigerian high schools.

Competitive activities provide educational benefits to members by

encouraging them to excel or emulate the qualities of high achievers and taking personal responsibilities for attempting work. Nigerian high school students could shoot for goals of highest excellence and be eager to receive detailed knowledge of results. Worthy competitions would help Nigerian youth leaders to arrange learning aspirations and enjoy feelings of success. The youth can be programmed to learning experiences which involve development of skills, careers, and creativity.

The knowledge gained through such interaction would be realized as attitudes for other programs in the school, community, or nation. Preparation for and participation in the contest activities that are closely related to the school curriculum and the world of work actually help the teacher in accomplishing his task.

Existing situations in Nigeria are in the extremes, thus providing contest activities of great educational value expecially in agricultural mechanics. Giving youth a chance, their creative minds can bring up useful suggestions for consideration on how many of the imported machinery can be remodeled to suit the Nigerian situation.

Summary

If Nigeria is to improve her agricultural production and open avenues for agri-business, the youth must be attracted to farming as a career. Present day youth cannot and will not stand the backbreaders (hoe and cutlass) as the main tools for agriculture. Introduction of agricultural mechanics taught through the FFA dynamics could help students develop levels of proficiency for profitable farming enterprise.

Introducing contest involving competitions in the area of agricultural mechanics will enable a large portion of the engineering construction and marketing companies in Nigeria to contribute to youth development. High school students will have an opportunity to graduate with marketable skills. In fact, some may prefer to be self-employed. Many mechanical tools and equipment had been remodeled by Nigerian engineers with many of these new "models" setting in the workshops only as monuments of individual engineer achievements. The introduction of agricultural mechanics contests will provide an arena for youths to understand that most of the machinery and equipment presently imported into Nigeria must be remodeled to Nigerian situations.

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APPENDIX

QUESTIONNAIRE

TEACHERS
PART I

Please answer these questions as completely and accurately as possible.

1. Name of school_____
2. Number of students enrolled in vo-ag_____. Number in ag-mechanics_____
3. Number of teachers in vo-ag department? 4_____ 3_____ 2_____ 1_____
4. Do you teach an ag-mechanics class? Yes_____ No_____
5. How many years have you taught vo-ag? More than 5 years_____ 3-5 years_____ 2-3 years_____ Under 2 years_____
6. Approximately what percentage of school time in vo-ag is devoted to ag-mechanics, including separate ag-mechanics classes? Above 50%_____ 40-50%_____ 30-40%_____ 20-30%_____ Under 20%_____
7. What percent of the time in ag-mechanics is devoted to training the ag-mechanics interscholastic teams? Above 50%_____ 40-50%_____ 30-40%_____ 20-30%_____ Under 20%_____
8. What percent of instructors time in ag-mechanics is devoted to skill development in the laboratory at the different class levels?

Please check	Below 9th Grade	9th Grade	10th Grade	11th Grade	12th Grade
Greater than 50%					
50%					
40-50%					
30-40%					
20-30%					
Less than 20%					

9. Out of class time, what is the extent of training hours given during a semester to prepare students for the FFA Interscholastic Contests?
   ____More than 50 hrs. _____40-50 hrs.
   ____30-40 hrs. _____20-30 hrs.
   ____ 10-20 hrs. _____Less than 10 hrs.
10. What percentage of this "out of class hour" is devoted to training FFA Interscholastic Ag-Mechanics teams?
    _____More than 20% 20-15%_____ 15-10%_____ 10-5%_____ Less than 5%_____
11. In what area of ag-mechanics does your chapter perform best at contest?
    ____Farm Shop Skills _____Farm Electrification
    ____Farm Power and Machinery _____Farm Structures
    ____Soil and Water Conservation

    What do you think is responsible for this? Please explain.

12. Do you really think that participation by students from your school at the FFA Interscholastic Ag-Mechanics Contest is worth the investment of your own time and energy?
    Yes_____ Undecided_____ No_____
13. Does the quality of performance by the students from your school at the FFA Interscholastic Ag-Mechanics Contest justify the investment of your time and energy?
    Yes_____ Undecided_____ No_____

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II. Please respond to each of the following statements in terms of your best judgement as to the validity of the statement. Circle the symbol which most nearly represents your feelings about the particular statement as it relates to the national ag-mechanics contest of the Future Farmers of America (FFA). For the statement which does not seem very clear to you, please respond as you may best understand it. Please put a question mark (?) in front of such questions. THANKS!

Judging Scale 1 (SD) — 2 (D) — 3 (N) — 4 (A) — 5 (SA)

SD - Strongly Disagree, D - Disagree; N - Neutral; A - Agree; SA - Strongly Agree

STUDENT CONTESTANTS AT THE OKLAHOMA FFA AG-MECHANICS INTERSCHOLASTICS CONTESTS

1.	Learn the skills tested for in the contest more completely than non-contestants.	SD	D	N	A	SA
2.	Learn all ag-mechanics skills for the world of work less completely than the non-contestants.	SD	D	N	A	SA
3.	Require more practice in the interpretation of sketches, diagrams, and simple constructional details than non-contestants.	SD	D	N	A	SA
4.	Demonstrate more safety with hazardous materials and equipment than non-contestants.	SD	D	N	A	SA
5.	Have weaker agricultural production programs than non-contestants.	SD	D	N	A	SA
6.	Perform preventive maintenance on farm machinery more completely than non-contestants.	SD	D	N	A	SA
7.	Produce a higher percentage of uniform welds with arc and oxyacetylene equipment than non-contestants.	SD	D	N	A	SA
8.	Make lower scores on written tests than non-contestants.	SD	D	N	A	SA
9.	Make a higher score on problem solving than non-contestants.	SD	D	N	A	SA
10.	Are more interested in attending school than non-contestants.	SD	D	N	A	SA
11.	Are more prone to drop out of school than non-contestants.	SD	D	N	A	SA
12.	Are not as well prepared for the world of work in ag-mechanics as non-contestants.	SD	D	N	A	SA
13.	Receive more of a challenge for skill development than non-contestants.	SD	D	N	A	SA
14.	Are less aware of the world of work and its requirements than non-contestants.	SD	D	N	A	SA
15.	Help encourage parents and other local patrons to support the ag-mechanics program.	SD	D	N	A	SA
16.	Help encourage business corporations and private agencies to donate awards and support for the ag-mechanics program.	SD	D	N	A	SA
17.	Provide teachers with information for determining if the local ag-mechanics curriculum is adequate for the world of work.	SD	D	N	A	SA
18.	View the contest activities as being too difficult and demanding for students in the high school.	SD	D	N	A	SA

Background Information--STUDENTS

Part I

Please answer the following questions as accurately as you can.

1. Name_____.

2. Name of your school_____

3. At the time you participated in the Ag-Mechanics contest were you enrolled

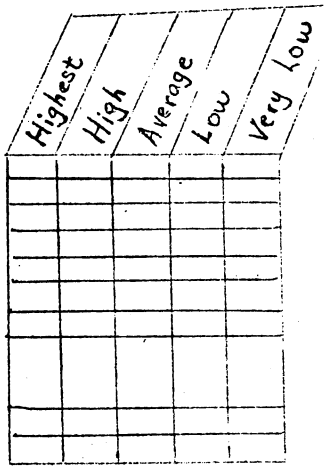
(a) in a full time Ag Mechanic class _____yes _____no

(b) in Ag-Mechanics as part of your Vo Ag. Class?_____yes _____no

If no did you enrol in any full time Ag-Mechanics instruction before participating?_____

4. Did you participate in the F.F.A. Interscholastic Ag-Mechanics contest within the last three years? _____yes _____no

5. For how many years have you belonged to the F.F.A?
More than 3 years_____
2-3 years_____
Less than 2 years_____



6. My objective for joining the F.F.A. was as follows:
(i) To develop leadership qualities
(ii) To win awards at contests.
(iii) To travel and meet other F.F.A. members.
(iv) To supplement my learning in Vo-Ag.
(v) Other. Please specify (a)
(b)
(c)

7. My objective for enrolling in Ag-Mechanics was:
(i) To develop necessary mechanic skills for farm operations
(ii) To qualify for employment in Ag-Mechanics
(iii) To win awards in Ag-Mechanics.

8. At what grade levels and what amount of training did you receive for the Ag-Mechanics contest?

	None	Some Training	Much Training
Below 9th Grade			
9th Grade			
10th Grade			
11th Grade			
12th Grade			

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OKLAHOMA STATE UNIVERSITY • STILLWATER

Department of Agricultural Education
(405) 372 6211, Ext. 44

74074

December 3, 1975

My Dear Vocational Agriculture Teacher,

May I have a moment of your time please? I realize that you are very busy but I need your help!

I am conducting a statewide survey to determine the perception of teachers of agricultural mechanics and student contestants in the state FFA Ag Mechanics Interscholastics Contest about the educational benefits, public relations and support, level of difficulty and other questions which have been raised concerning the contest. Your opinion and that of your students are essential to help improve the state interscholastic agricultural mechanics contest of the future and to the success of this study.

Please give the three gold questionnaires to three students who participated in the state ag mechanics contest and fill out the blue one yourself. In order to have a valid survey, each questionnaire should be completed and returned in the stamped, self-addressed envelope within the week of receipt if possible.

Thank you a thousand times in advance for taking the time to participate in this survey.

Yours Very Sincerely,

Gbenga S. O.

I would also like to thank you for giving us this information as it can help us improve the ag mechanics contests of the future.

Sincerely,

Verlin Hart

Verlin Hart
Ag Mechanics Specialist

Department of Agricultural Education
Oklahoma State University
Stillwater, Oklahoma 74074

January 5, 1976

My Dear Vocational Agricultural Teacher,

This is to remind you about the questionnaire for my survey on the agricultural mechanics contest in the FFA interscholastics competitions. I do hope you have not misplaced the questionnaire which I forwarded to you on the 3rd of December, 1975. It is very important to my study to receive from you.

I realize that this is a very busy season for you. Your time and information to this survey is greatly appreciated as your response and the response of your students are very important for my thesis. You could also be of great assistance by encouraging your students to fill out the questionnaire.

Please forward the completed forms in the stamped - self-adressed envelop sent previously to you.

Yours Very Sincerely,

Gbenjo, S.O.

THESE CHAPTERS PARTICIPATED

IN THE SURVEY

Guthrie

Blackwell

Jay

New Kirk

Thomas

Tishomingo

Madill

Vinita

Stillwell

Holdenville

Spiro

Achille

McLoud

Ponca City

Beggs

Checotah

Eufaula

Glencoe

Stillwater

Delaware

Fort Townson

Muskogee

Nowata

Tecumseh

Clinton

VITA

Soladoye Oludaisi Gbenjo

Candidate for the Degree of

Master of Science

Thesis: THE EFFECTIVENESS OF THE OKLAHOMA FFA AGRICULTURAL MECHANICS INTERSCHOLASTIC CONTEST WITH IMPLICATIONS TO NIGERIA

Major Field: Agricultural Education

Biographical:

Personal Data: Born in Igbajo Osun Division, Nigeria February 4, 1941 to Joseph and Eve Gbenjo. Married Deborah Dupe Gbenjo Ogbomose: December 12, 1967. Two daughters and one son.

Education: Graduated from Wesley School Ago Iwoye Ijebu Province, December, 1954. Received West African School Certificate from Baptist Boys High School, Abeokuta, 1959; Received the Agricultural Assistant Certificate from the School of Agriculture from Akure, 1961; Received diploma in Tropical Agriculture from Ibadan School of Agriculture, 1963; Received diploma in Farm Machinery Utilization for Rice Cultivation from Tbarak International Agricultural Training Center, Japan, 1971; Received B.S. in Agricultural Mechanics from Western Illinois University, 1974; Completed requirements for M.S. degree in May, 1976.

Professional Experience: Agricultural Mechanization Officer, 1964-1972.
Taught courses in Agricultural Mechanization in the School of Agriculture Akure.
In charge of School of Agricultural Mechanization Department, 1964-1972. Understudy to AID personnel posted to Akure School, 1964-1972. Assisted in construction of farm water supply, 1964-1965. Construction of School Farm Shop, 1965-1972.

Leadership Activities: Youth leader, First Baptist Church, Akure, 1964. Secretary, First Baptist Church, Akure, 1967-1970. Secretary, Baptist Boys High School Alumni Association, 1968-1972.

Memberships:

Professional Organizations: Member, National Vocational Agriculture Teacher's Association and Oklahoma Vocational Teacher's Association.
Member, Future Farmers of America Collegiate Chapter