NEW TEACHERS' PERCEPTION OF THE PRE-SERVICE AGRICULTURAL EDUCATION PROGRAM AT OKLAHOMA STATE UNIVERSITY

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CHAPTER I

INTRODUCTION

There have always been and always will be powerful comments by the public expressing opinions about education. Most of these comments constitute various forms and degrees of evaluation of the educational system by the public. Accountability seems to be the "chant" now. It would appear that accountability is being used by the public in the same frame of reference that educators have always used evaluation. This is the public's form of communication to let educators know they want more relevant and powerful evaluations to keep education in tune with society's needs.

Many professional educators and laymen are convinced that the educational system, like other service agencies, can and must be held accountable for the results of its activities. Miller (1) feels the major factor which has precipitated accountability is the skyrocketing cost of education and improved teachers' salaries. Taxpayers want to be sure they are getting results from their investment.

Fenner (2) reported that:

> Leaders of our nation's educational establishment have lost public confidence over the last six years. A 1966 survey showed that 61 percent of the public had a great deal of confidence in education leaders; a 1971 survey, only 37 percent; and the 1972 one, 33 percent.

The call for accountability in education has been heard at the federal level. Stenner (3) reported:

> An excellent example of a policy declaration at the federal level was made by President Nixon in his 1970 education message when he said: 'From these considerations we derive another new concept -- accountability. School administrators and school teachers alike are responsible for their performance, and it is in their interest, as well as the interest of their pupils, that they be held accountable.'

Little disagreement exists as to the need and desirability of a policy for accountability; however, much controversy exists over the methods of implementation. It is quite clear that the accountability concept has entered into the American educational scene.

Evaluation, which should be an integral part of any educational endeavor, is necessary to develop and maintain an effective educational program that meets the demands of the public and the needs of the students it serves. Colleges and universities, like other educational systems, can use a continuous evaluation program to answer the calls for accountability. This evaluation must incorporate a systematic appraisal of the total effectiveness of programs.

There are numerous sources to use when appraising the effectiveness of an educational program. Bender (4) pointed out:

> Former students know better than anyone else how well-prepared they were to make an acceptable beginning as well as advance in a profession. They are the logical source of information for determining the strengths and weaknesses of the program. Perhaps no other group can provide a more valid appraisal to serve as a basis for improving the program.

The Agricultural Education Department at Oklahoma State University has a policy that gives the students the opportunity to evaluate the total program upon completion of their student teaching experience. The graduates have been asked to evaluate certain segments of the program, including curriculum. However, there have been no research studies to evaluate the total pre-service training program or curriculum specifically.

Statement of the Problem

The need for evaluation of efforts and outcomes is axiomatic if a department of education is concerned with its direction and growth. In some departments there may be hesitancy to enter into a total program evaluation because of the dangers inherent in attempting to evaluate one's own performance.

The staff of the Department of Agricultural Education at Oklahoma State University looks at evaluation as a means to an end. The ultimate results of any evaluation should be the improvement of the total program. Realizing the competencies needed by new teachers of Vocational Agriculture have increased tremendously during the past two decades, many changes have been incorporated to improve the program. The critical issue is to determine if the changes in the department are developing the competencies needed by beginning teachers of vocational agriculture.

To evaluate success in the development of these competencies, it seemed reasonable to obtain the opinions of the former graduates who have been engaged in the profession.

Purpose of Study

The primary purpose of this study was to determine how the recent graduates of the Agricultural Education program at Oklahoma State University, who have actively engaged in the profession, assess their pre-service training and if they utilize the areas of competencies stressed.

Objectives of the Study

In order to accomplish the purposes of the study, the following specific objectives were formulated:

1. To determine the degree of competence graduates felt they possessed in the areas of:

   a. Agricultural Economics
   b. Agronomy and/or Plant Sciences
   c. Animal Sciences
   d. Mechanized Agriculture
   e. Sciences Related to Agriculture
   f. Professional Education
   g. Vocational Agriculture Occupational Training (VAOT)
   h. Future Farmers of America (FFA) Advisor
   i. Young and/or Adult Farmer Advisor

2. To determine where the graduates felt these competencies were developed.
3. To determine the extent to which competencies taught were needed or used by teachers in their profession after they entered the world of work.
4. To determine if the graduates felt they needed more instruction in these competencies after their experience in the profession.
5. To determine if those graduates who went out-of-state to teach perceived their pre-service training differently than the graduates who stayed in Oklahoma to teach.
6. To determine if graduates who transferred from another college perceived their pre-service training differently than students who received all their training at Oklahoma State University.
7. To determine if the graduates felt they had a sufficient opportunity for personal and professional development within the program.

Rationale for the Study

The basic rationale behind this study was the belief that former agricultural education graduates who have engaged in the profession can and will indicate their perceptions of the quality of the pre-service training they received. The teacher education staff at Oklahoma State University have implemented some new ideas and approaches to the pre-service program and want the feedback from the people who are putting these ideas into practice. The concern was to find out if these changes are encompassing the much broader scope of responsibilities of today's Vocational Agriculture teachers.

The scope of Oklahoma Vocational Agriculture teachers' duties as outlined by Holley (5) are:

1. Classroom Instruction
2. Farm Mechanic Instruction
3. Supervisor
    a. Farm Training Programs
    b. Agriculture Occupational Training Programs
4. Community Activities
5. Professional Improvement
6. Adult and Young Farmer Educational Activities
7. Advisor for Future Farmers of America
8. Maintenance of Physical Facilities
9. Guidance and Counseling of Students
10. School Activities (other than FFA)
11. Departmental and State Reports

Love (6) implied that teacher educators in agriculture have been very successful in preparing teachers; however, the role of the teachers

of agriculture has changed, is changing, and will continue to change at a rapid rate. Consequently, teacher education programs in agriculture will need to be continuously restructured in years ahead.

Several graduates of the Agricultural Education Department at Oklahoma State University go to other states to teach vocational agriculture each year. The feeling among the staff in the Agricultural Education Department is that there is essentially no difference between the graduates who remain in or leave the state to secure their first employment. However, if the department is going to continue to adequately qualify graduates for vocational agriculture positions in other states, there needs to be feedback from the graduates about their perceptions of their pre-service training; that is, there is a need to know how well the department is preparing graduates to perform as vocational agriculture teachers in other states as well as in Oklahoma. There is also a large number of the graduates of the department who have transferred to Oklahoma State University from other colleges. The curriculum has been designed so that students can transfer to Oklahoma State University in the Agricultural Education Department and proceed through the course of study as effectively as those who complete all requirements at Oklahoma State University. Their perception of the pre-service training needs to be compared to the non-transfer students'. Therefore, it was decided to analyze the respondents, in addition to their overall response, according to where they entered the teaching profession and their transfer status.

The problem all teacher educators face in program planning involves the task of properly perceiving the future role of the teachers. This study should give strong signal as to the degree of success the

Department of Agricultural Education at Oklahoma State University has had in reaching their objectives.

Assumptions and Limitations of the Study

Assumptions

For the purpose of this study, the following assumptions were accepted:

1. That the statements on the questionnaire, developed with the assistance of a steering committee, would adequately measure the effectiveness of the total pre-service program for Agricultural Education graduates.
2. That inservice teachers are the best qualified to evaluate the pre-service training program because of their teaching experience.

Limitations

The following limitations of the study were recognized by the investigator:

1. Only graduates engaged in the Vocational Agriculture teaching profession will be included in the study.
2. Only the graduates who have been through the program with the present Agricultural Education staff were included. This involved the 1971 and 1972 graduates inclusively.
3. No effort was exerted to analyze the graduates on factors such as:

    a. Personality
    b. Previous experiences
    c. Degree of success in the college program
    d. Degree of success in profession

Definition of Terms

Certain terms have special meanings as applied to this study. Definitions of these are offered below.

Accountability -- A means of holding an individual or group responsible for a level of performance or accomplishment for their students.

Evaluation -- The process of making value judgments on the basis of information gathered about the educational program.

Competencies -- The skill ability and the degree of specialization the teacher has in occupational areas.

Professional Education -- Courses and activities designed to develop competencies in understanding people, instructional methods, and instructional materials and student teaching. Includes courses in Agricultural Education, Educational Psychology, and Technical Education.

New Teachers -- Refers to Vocational Agriculture teachers who received their degrees from Oklahoma State University in Agricultural Education and who met the requirements for the teacher certification. Only the teachers that completed their college work in 1971 and 1972 and entered into the Vocational Agriculture teaching profession were included in this study.

Pre-service program -- Refers to the curriculum requirements that prospective Vocational Agriculture teachers must have satisfactorily completed before they were certified to teach.

Technical Agriculture -- Courses and activities designed to develop competencies in agriculture areas and the related sciences. Includes courses in Agricultural Economics, Plant Science, Animal Science, Mechanized Agriculture, and science.

Agricultural Economics -- Refers to courses of instruction in Farm Management, Farm Credit, Marketing, Price Trends and Cycles, Insurance, and Income Taxes.

Agronomy and/or Plant Sciences -- Refers to courses of instruction in Plant and Seed Identification, Fertilization, Soils, Plant Growth and Reproduction, Legal Land Descriptions, Landscaping, and Greenhouse Operation.

Animal Sciences -- Refers to courses of instruction in Livestock Selection, Care and Breeding, Feeds and Feeding, and Artificial Insemination.

Mechanized Agriculture -- Refers to courses of instruction in Electricity, Plumbing, Small Gas Engines, Arc and Gas Welding, Farm Level, Blueprint Reading, Farm Machinery Repair, and Farm Buildings.

Sciences Related to Agriculture -- Refers to courses of instruction in Plant Insects, Plant and Animal Disease, Animal Parasites, and Chemical Control.

Professional Education -- Refers to courses of instruction in Teaching Methods and Skills, Visual Aids, Motivational Methods, and Student Management and Control.

VAOT - Vocational Agriculture Occupational Training -- Refers to conducting learning experiences in Career Selection, Selection of Training Centers, Student Placement, and Human Relations.

FFA - Future Farmers of America Advisor -- Refers to preparing students and projects for fairs, shows, and contests; planning and conducting training projects; Project Record Books; Program of Activities; and State and Local Reports.

Young and/or Adult Farmer Advisor -- Refers to setting up and conducting a Young and/or Adult Farmer Chapter.

Oklahoma Teachers -- These are 1971 and 1972 graduates of the Agricultural Education Department at Oklahoma State University who taught vocational agriculture at least one year in Oklahoma.

Out-of-State Teachers -- These are the 1971 and 1972 graduates of the Agricultural Education Department at Oklahoma State University who taught vocational agriculture in another state outside of Oklahoma.

Transfer students -- These are the 1971 and 1972 graduates of the Agricultural Education Department at Oklahoma State University who transferred college hours from another institution of higher education.

Non-Transfer students -- These are the 1971 and 1972 graduates of the Agricultural Education Department at Oklahoma State University who received all of their college training at Oklahoma State University.

Development of Study

The investigator became interested in evaluating the Oklahoma State University Agricultural Education program after working with the student teachers for more than a year during the course of his graduate studies program. A part of his responsibilities was to assist in obtaining student teachers' evaluations of the total program at the seminar which was held after they had completed their assignment. It occurred to the author that their analyses of the program and suggestions for improvement could have been more valuable had they been more experienced. Some of their suggestions were well-founded and have been implemented in the pre-service program. However, it was felt that many times it was not possible for the graduates to see the relevancy of certain activities

until after they had completed the program and had the opportunity to look back on the program with the eyes of the experience.

The department had a major turnover in staff in 1969, which allowed the opportunity for new direction and emphasis in the program. Therefore, it seemed reasonable to evaluate only the graduates who started and completed the program under the present staff.

A review of literature and research relating to the study was conducted and is presented in Chapter II.

CHAPTER II

REVIEW OF RELATED LITERATURE AND RESEARCH

The review of related literature and research helped the investigator explore several areas relevant to this study. This does not imply that it comprises an exhaustive list of factors related to the topic. However, the author felt it clarified the subject enough to aid in delimiting and developing the research effort. The material is presented under major topical headings in order to facilitate clarity and organization.

Directions in Teacher Education

The traditional patterns for the preparation of teachers of agriculture which, for many years, were somewhat standard across the United States are now in a transition in most states. Stevens (7) confirmed this when he reported that a survey of leading agricultural colleges found that more emphasis was being placed on education for long-term intellectual growth and less on how-to-do-it training in techniques for the first job. The four main trends cited by Stevens (7) were:

1. Increase in general education requirements
2. Reducing the number of technician training courses in agriculture
3. Fewer tightly-prescribed specialized curricula
4. Emphasizing flexibility so a student, with the help of his counselor, can work out a suitable individualized program

According to Simpson and Ellis (8) the vocational teacher education curriculum is an area of neglect and challenge. Major changes are needed if the field of vocational education is to respond to the social problems of the day and the educational needs of those whom it should serve. Traditionalism has ruled too long in teacher education. The price of preserving old identities has been the failure of the field to respond to its needs and challenges.

The following recommendations were presented by Simpson and Ellis (8) for curriculum revision:

1. Give support to basic research in the philosophical and social foundations of vocational education which is needed to provide direction, rationale, and justification for program development.

2. Provide an understanding of the role and function of vocational education with respect to the nation's social, political, and economic goals.

3. Determine methodology for the integration of vocational and general education, and prepare teachers accordingly.

4. Determine scope and sequence, content, and methodology for a lifelong program in career education.

5. Explore alternatives to curriculum organization based on existing fields of service. Provide for research and developmental projects in terms of viable alternatives.

6. Give increased emphasis to program planning and budgeting as content in vocational teacher education programs.

7. Give increased attention in the vocational teacher education curriculum to:
   a. Women and the world of work
   b. Individuals with special needs
   c. Cultural subgroups
   d. Gifted students
   e. Vocational education at post-secondary levels
   f. The aging who need retraining and upgrading
   g. Orientation to the world of work at the elementary level

8. Emphasize quality rather than quantity in work experience requirements and course work.

9. At both the preservice and inservice levels, provide across-the-board vocational teacher education courses emphasizing commonalities with respect to content, methodology, and socio-legal consideration.

10. Prepare teachers broadly for work in the informal, as well as the formal setting.

11. Give some emphasis in teacher education programs to new concepts of industry-based and home-based career education.

12. Provide prospective teachers with confrontation experiences with students having special needs.

13. Include in the program of teacher education experiences with multi-media instruction, including the use of computers in teaching.

14. Include the 'politics of education' as content in the vocational teacher education program.

15. Emphasize the 'career-ladder concept' in the total program of vocational teacher education.

16. Provide teacher education experiences in using the community as a learning laboratory.

17. Prepare teachers to make effective use of advisory committees and to utilize business and industry in developing cooperative education programs.

18. Help teachers become increasingly aware of the ancillary services available and needed to enhance vocational development.

To conclude, it is apparent that the entire curriculum in vocational teacher education is in need of intensive examination and revision. 'Patching up' will not answer the present need and challenge.

Clark (9) stated that:

It is clear that teachers of Vocational Agriculture for the future need different training than is being provided for teachers now being trained. New technology has brought about the need for teachers to acquire new understanding and skill. New developments in farming and agricultural business, and new teaching methods and material will require constant modification of teacher education programs in terms of technical subject matter content and teaching techniques. It is equally apparent that new developments in our knowledge of learning, of teaching methods and of other aspects of professional understanding and abilities will require constant

> modification of the program for the professional education of teachers. In this connection, it is well to keep in mind that the competency of the teacher is more important than the number of courses or credit hours accumulated on a transcript or the amount of occupational experience the teacher has had. A long-time aim of teacher educators should be to move away from present methods of certifying teachers and move toward:
>
> 1. A carefully developed list of competencies needed by the teacher.
>
> 2. A carefully developed set of criteria for measuring the competence of the teacher or prospective teacher in terms of his performance.
>
> 3. Certification on the basis of demonstrated performance and on recommendations of the training institutions.

Change appears to be an inevitable phenomenon for educators preparing Vocational Agriculture teachers. The direction of this change appears to be somewhat less certain. The Vocational Education Act of 1963 as amended in 1968 states (10):

> It is not possible to provide at this point a prescription with specific directions to either approach or to solve immediate problems of the teacher educator. This is a problem of national concern requiring massive effort at the Federal level.

Peterson (11) implies the critical issue facing teacher educators in agriculture is preparing teachers who understand the complexities of today's agriculture as well as the diversity of interest, motivation, and ability of today's student.

Need for Evaluation

There has been widespread attention given to and criticism leveled at the education of American teachers. Bender (4) feels the criticisms have been good in that they stimulated personnel directly involved in the process of educating teachers to use more searching and critical evaluation of their preparation programs.

The Dictionary of Education (12) defined evaluation as "the process of ascertaining or judging the value or amount of something by careful appraisal."

Troyer and Pace (13) gave the following explanation of evaluation in education:

> It is the process of judging the effectiveness of an education experience. It includes gathering and summarizing evidence on the extent to which educational values are being attained. It seeks to answer the questions: 'What progress are we making? and What success is our educational program having?'

Evaluation, like any other educational activity, must be built upon basic principles or guidelines which provide the framework for its implementation. Many principles of evaluation have been developed for evaluating various educational endeavors. For the most part, the following principles may be applied to the evaluation of a teacher education program:

1. Effective evaluation is based upon the previous establishment of clearly defined purposes or objectives.
2. Evaluation should be a planned process.
3. Evaluation process should have continuity.
4. Evaluation should be a cooperative undertaking of all persons concerned with or affected by the evaluation.
5. Evaluation should be comprehensive concerning all aspects of the teacher education program.
6. Evaluation process should take advantage of a variety of techniques, instruments, and methods.
7. Evaluation must be based on valid information.
8. Evaluation should include both subjective judgment and objective appraisal.
9. Evaluation should consider both the beginning status and the growth or progress toward specific goals.

10. Evaluation results should be analyzed and interpreted into a clear picture.

11. The end results of the evaluation should be the improvement of the total teacher education program. (Bender, 4)

Bender (4) also stated that to continue an activity without evaluating it is somewhat analogous to the marksman who continues his shooting with no heed as to what is happening to the target. This truism is especially applicable to university departments because of the inherent fluidity in such situations. People can be changed, course content can be modified, and programs of courses can be rearranged.

Agricultural Education Program Evaluations

There have been several studies on program evaluation showing that educators are interested in revising their programs to keep up with the changing agriculture.

Gadda (14) conducted a study of South Dakota's pre-service training program in 1963. The major objectives were to determine the extent the program was reaching its objectives and meeting the needs of beginning teachers. The competencies were classified in three major areas and further subdivided into competency categories. Two rating scales measured (a) the actual competency developed and (b) the recommended extent of development. There were 66 teachers who were beginning teachers from 1956 to 1960; their school administrators and their supervising teacher who directed their student teaching were involved in the study. The Chi square technique was used as the statistical method. The findings revealed the best developed competencies were associated with establishing and maintaining relationships and advising the FFA, while the competencies least adequately developed were associated with

guidance service, young and adult farmers, public relations, teaching in-school classes, and supervising farming programs.

A five-year study is currently being conducted at Ohio State University by Guiler (15) to determine how first-year teachers perceive their abilities in ten areas of competence. The first-year teachers respond at the beginning of the year and again at the end of their first year. Only fully qualified, beginning teachers in single-teacher departments are involved in the report. The instrument used has two rating scales: one measures degree of ability and the other measures degree of help needed. It was interesting to note that two major and important areas of competency, agricultural mechanics and conducting young and adult farmer programs, were rated lowest in perceived ability by one group of the beginning teachers included in the study.

An evaluation of the pre-service Agricultural Education curriculum at West Virginia University was conducted by Kelley (16). The purpose of this study was to determine how the competencies needed by teachers of Vocational Agriculture were being developed. The areas of competencies studied were:

1. General Education
2. Professional Education
3. Agricultural Economics and Farm Management
4. Agronomy
5. Animal Science
6. Agricultural Mechanics

The rating scale was designed to measure the degree of competency the beginning teacher had after completing the pre-service program. The questionnaire was returned by 54 teachers (who had graduated between

January, 1957, and August, 1964), 36 principals, and 5 state supervisors that these teachers worked under during their first year. The mean, standard deviation, and t value were calculated on each competency listed. The Chi square test was applied to determine associations between groups.

Kelly's (16) findings were:

1. The teachers' and principals' responses did indicate a strong association, except for five competency items in the areas of general and professional education.

2. The teachers were significantly inadequate in one general education competency, as indicated by the principals.

3. The supervisors indicated the teachers were inadequate in thirteen professional education competencies, while teachers felt inadequate in only two.

4. The supervisors and principals indicated the teachers were significantly adequate in the broad technical agriculture categories.

5. The teachers indicated they were adequate or more than adequate in all but three of the competencies in agricultural economics and farm management.

6. The teachers indicated they were adequate or more than adequate in all but one of the agronomic competencies listed.

7. The teachers indicated adequacy for all competencies of animal science.

8. The teachers thought themselves to possess adequate or more than adequate competency in all but three items in agricultural mechanics.

9. The teachers indicated that sixteen of the fifty-five courses making up the undergraduate curriculum were of no significant help to them during their first year of teaching.

In a follow-up study of Agricultural Education graduates from North Carolina Agricultural and Technical University, Johnson (17) reported that 82.65 percent felt the professional courses in the agricultural education curriculum contributed very highly towards their success. It

was also indicated that 71.05 percent felt general education contributed and 68.15 percent felt technical courses contributed to their occupational success.

The 1972 Follow-Up Survey (18) of graduates from Oklahoma State University in teacher education revealed the supervisors of Vocational Agriculture teachers rated the 1971 graduates lower in overall effectiveness than the average of all teacher education fields. The vocational agriculture teachers' supervisors rated 39 percent of the teachers superior in overall effectiveness and 34 percent above average in comparison to the average rating in all fields of 53 percent receiving superior and 37 percent above average.

The Follow-Up Study (18) included graduates who had three years teaching experience, 1969 graduates, and one year of experience, 1971 graduates. The graduates were asked to make recommendations in curriculum emphasis, course requirements, and instruction requirements. The author felt the important findings relative to this study were that both groups of graduates indicated more practical emphasis should be placed on course requirements and instructor's requirements. It also revealed that both groups felt additional field specialization should be incorporated into curriculum.

Degree Requirements for Certification and Objectives

The program of studies in the Agricultural Education Department at Oklahoma State University was designed to provide both comprehensive and specialized training in preparation for a career as an educator in agriculture (19). The Agricultural Education Department at Oklahoma State

University has identified some important types of performance that graduates should be able to exhibit upon completion of the program. These have been adopted as the basic objectives of the program and are as follow (20):

1. Effectively recognize and identify occupational opportunities and needs
2. Effectively counsel and advise individual students in occupational choice
3. Perform effectively as a planner
4. Apply functional methods in motivating students as learners
5. Effectively supervise group and individual learning experiences
6. Direct and supervise students in on-the-job and cooperative training situations
7. Enthusiastically advise Vocational-Technical youth and adult organizations
8. Function as an integral part of an educational team
9. Relate to the individual student as a person and to thereby develop in the student a feeling of adequacy

In order for students to reach these objectives and to meet the requirements for certification, the Agricultural Education Department has set up the following course requirements (21):

1. Agricultural Economics - 10 hours
2. Plant Science - 10 hours
3. Animal Science - 10 hours
4. Mechanized Agriculture - 10 hours
5. Science (in field of specialization) - 6 hours
6. Electives in Agriculture - 12 hours
7. Communication - 12 hours
8. Social Science - 10 hours
9. Natural Science - 20 hours
10. Psychology - 3 hours
11. Math - 3 hours
12. Humanities - 4 hours
13. Defense or Physical Education - 2 hours
14. Practical Arts - 4 hours
15. Professional Education - 22 hours

The State Department of Vocational Agriculture also has objectives and requirements for Vocational Agriculture teachers in Oklahoma. Their general objectives state:

> Vocational Education in Agriculture in Oklahoma shall be designed to meet the needs of persons who have entered upon, or are preparing to enter upon the work of the farm or farm home, or any occupation involving knowledge and skills in agriculture subjects, whether or not such occupation involves work of the farm or farm home. Sufficient time shall be provided in the teacher's schedule to adequately supervise the supervised training program and the Future Farmers of America.

The State Department of Vocational Agriculture's requirements for certification state:

> Vocational agriculture teachers shall hold a valid Standard Vocational Agriculture Teaching Certificate. Temporary or provisional certificates will not be issued if qualified teachers are available. The State Board for Vocational and Technical Education and the Agricultural Education Department of Oklahoma State University shall determine the validity of Vocational Agriculture teaching certificates. The Certification Department of the State Department shall issue the certificates.
>
> The course requirements shall be 58 hours of technical agriculture, 50 hours of general education, and 22 hours of professional course work, including seven hours in student teaching (22).

CHAPTER III

DESIGN AND CONDUCT OF THE STUDY

The purpose of this chapter is to describe the methods and procedures used in conducting this study. These were dictated by the central purpose of the study, which was to determine how the recent graduates of the Agricultural Education program at Oklahoma State University assessed their pre-service training and if they utilized the areas of competencies stressed. Specific objectives of the study also provided guidance for the design and conduct of the investigation. These objectives were:

1. To determine the degree of competence graduates felt they possessed in the areas of:

   a. Agricultural Economics
   b. Agronomy and/or Plant Sciences
   c. Animal Science
   d. Mechanized Agriculture
   e. Sciences Related to Agriculture
   f. Professional Education
   g. Vocational Agriculture Occupational Training (VAOT)
   h. Future Farmers of America (FFA) Advisor
   i. Young and/or Adult Farmer Advisor

2. To determine where the graduates felt these competencies were developed.

3. To determine the extent to which competencies taught were needed or used by teachers in their profession after they entered the world of work.

4. To determine if the graduates felt they needed more instruction in these competencies after their experience in the profession.
5. To determine if those graduates who went out-of-state to teach perceived their pre-service training differently than the graduates who stayed in Oklahoma to teach.
6. To determine if graduates who transferred from another college perceived their pre-service training differently than students who received all their training at Oklahoma State University.
7. To determine if the graduates felt they had a sufficient opportunity for personal and professional development within the program.

In order to collect and analyze data pertaining to the purposes and objective developed for guidance of this study, it was necessary to accomplish the following tasks:

1. Determine the population for the study.
2. Develop the instrument for data collection.
3. Develop the procedure for data collection.
4. Select the method of data analysis.

The Study Population

The population of this study was comprised of a sample taken from the certified graduates of the Agricultural Education Department at Oklahoma State University. In order to obtain current data on the preparation program, this sample consisted of only the 1971 and 1972 graduates who entered the teaching profession. This provided a total group of 83 graduates, with 55 being employed as Vocational Agriculture instructors in Oklahoma and the other 28 being employed as Vocational

Agriculture instructors in ten different states. Of the 83 graduates, nine had entered into another profession after one year as a Vocational Agriculture teacher.

Development of the Instrument

The most effective means of collecting the data was felt to be a mailed questionnaire because of the wide distribution of the graduates.

In constructing the questionnaire, the following recommendations concerning appearance and effectiveness were considered (23):

1. Questions should be separated by dotted lines or extra spaces, distinguished by boldface type, etc., to ensure that the respondent will answer the right question.

2. The type should be varied to emphasize the important words, phrases, or instructions.

3. Check lists, fill-ins, and multiple choice questions should be conveniently arranged. Category designations and space for answers should be placed close together to avoid the possibility of error in the response. Where confusion is possible, a series of dots leading from the category to the answer space is helpful.

4. When the questionnaire is necessarily very long, it should look as short as possible. Printing, use of both sides of the page, double columns, and reduced size can make the printed questionnaire appear less than one third of its mimeographed size.

The following guides for construction of a questionnaire are a summary of comments made by several students of the field (Suchman /24/, Parten /25/, Wallace /26/, Levine /23/, Donald /27/). These guidelines were utilized to insure a systematic format:

1. The questions should be stated simply and clearly in words commonly used by the respondents; they must be relevant and meaningful; the categories to be checked should cover the full range of answers the respondent can give to the questions.

2. Questions should be worded so that it will not be easier for the respondent to answer one way than another.
3. The position of a question in relation to other questions frequently affects the response.
4. Whenever possible, a simple and convenient response system should be used.
5. It may be advisable to encourage the respondent to supply additional information not adequately tapped or specified by the questionnaire, because adhering to the categories or alternatives of a rigidly structured questionnaire may prove frustrating to some respondents. A final question may be provided at the end of the questionnaire, or at the end of a specific section, which invites the respondent to discuss any problem that is important to him.

The instrument utilized was an adaptation of one developed by Hodges (28), who adapted it from the 1971 Project Able study conducted in Quincy, Massachusetts. The instrument was developed in two parts (refer to Appendix B). In the first part nine major variables were identified by the author and his dissertation advisor which included a major proportion of the duties required of a teacher of Vocational Agriculture and also identified most of the agricultural course areas included in the program. These variables were:

1. Agricultural Economics
2. Agronomy and/or Plant Science
3. Animal Science
4. Mechanized Agriculture
5. Sciences Related to Agriculture
6. Professional Education
7. Vocational Agriculture Occupational Training (VAOT)
8. FFA Advisor
9. Young and/or Adult Farmer

The core curriculum developed for Vocational Agriculture teachers by the State Department of Vocational Technical Education was used to clarify and help insure that all areas of the teachers' duties were covered. These variables were subjected to four different types of treatment by each respondent. The first asked teachers to rate their competence on a five-point Likert type scale; the second asked them to rank seven different sources according to importance in their development of the competencies; the third was another five-point Likert type scale on how often they had need of the competencies; and the fourth was to determine if they felt a need for additional training in the competencies.

The second part was developed to help determine if the graduates felt they had a sufficient opportunity for personal and professional development within the program. There were eight statements developed for a response on a five-point Likert type scale. The statements were developed from the author's experience of serving on several evaluating teams from the State Department of Vocational and Technical Education and suggestions from the Agricultural Education staff at Oklahoma State University.

The questionnaire was reviewed by the members of the author's advisory committee and revised according to their suggestions. The revised questionnaire was given three different trial runs to insure that the questionnaire was clearly and easily understood and covered the needed information. The questionnaire was given minor revision the first two times, but no revisions were suggested on the third trial. Each trial included Vocational Agriculture teachers, graduate students (masters and doctorates), and student teachers in the Agricultural Education Department at Oklahoma State University.

Collection of Data

The questionnaires were mailed out on September 26, 1973, to each Vocational Agriculture teacher included in the study. A self-addressed, stamped enveloped was enclosed to encourage their response. A cover letter, attached to the questionnaire, had a personal salutation to each teacher and the personal signature of the author. Parten (25) pointed out that a personal touch in the letter of transmittal is quite effective in bringing in returns. A postscript which looks as if it were hand written or a personal signature of the sender has proved effective. The cover letter stressed the importance of the respondent's input into the study and the importance of the study, as Linksy (29) indicated this would induce response. The cover letter also included a sample showing how to fill out the questionnaire (refer to Appendix A).

Forty-nine completed questionnaires had been received by October 17, 1973. On October 17, 1973, a follow-up letter was mailed that again stressed the respondent's importance to the study and the need for a 100 percent return (refer to Appendix A). Another questionnaire was enclosed in case the respondent had misplaced the first one. Thirteen additional questionnaires were received by October 31, 1973.

On November 1 and 2, the author personally contacted all non-respondents in Oklahoma by telephone and asked if they would fill out the questionnaire. One teacher indicated that he would not participate in the study. These phone calls produced 13 more returns.

On November 12, 1973, a personal letter was typed for each of the seven non-respondents. The four Oklahoma teachers and the three out-of-state teachers received different letters telling the response of their respective group (refer to Appendix A). Dr. H. Robert Terry wrote a

personal note at the end of each letter. This encouragement produced four more responses. The cut-off date was November 26, 1973, at which time 79 questionnaires had been received, which was more than 95 percent return.

Analysis of the Data

The following description of the analysis procedure is included to provide the reader an overview of the statistical treatment of the data collected.

The questionnaire developed contained two main parts with the first part being subdivided into nine different competencies and one open-ended response. Four different responses were secured on each competence. The respondents were first asked to rate their competence in each area on a five-point Likert type scale which was a continuum from outstanding through average to none. To permit statistical treatment of the data, numerical values were assigned to the categories according to the following patterns:

Outstanding = 5

Above Average = 4

Average = 3

Below Average = 2

None = 1

This allowed the computer to calculate mean responses and thus provided inputs for the computer to compute the analysis of variance. The analysis of variance utilized to analyze this data was in the Statistical Analysis System designed and implemented by Barr and Goodnight (30) at North Carolina State University.

The analysis of variance was utilized to determine if there was a significant difference between the Oklahoma teachers and Out-of-State teachers. The analysis of variance was also utilized to determine the difference between Transfer and Non-Transfer students and to check for interaction among the variables.

Popham (31) explained the method employed in the analysis of variance as follows:

> In essence, the method employed in the analysis of variance is to compute the variances of the separate groups being tested for mean differences. The scores of all subjects in the subgroups are then artificially combined into one total group. This is done by regrouping, for analysis purposes, all of the scores in the several groups as though they were one group. The variance of the total group is then computed. If the variance of the artificially combined total group is approximately the same as the average variance of the separate subgroups, then there exists no significant difference between the means of the separate groups. If, on the other hand, the variance of the artificially combined total group is considerably larger than the average variance of the separate subgroups, then a significant mean difference exists between two or more of the subgroups.

Popham also stated the source of variation in the analysis of variance can be viewed three ways:

> First, 'between groups' of the amount of variation resulting from mean differences between the separate groups; second, 'within groups' on the amount of variation represented by the sum of the variances of the separate groups; and third, the 'total' of the amount of variation present when the separate groups are considered as one pooled group. (31)

The next section of the instrument required the graduates to rank order seven selected sources where competencies were developed as they pertained to the duties of a Vocational Agriculture teacher. These seven sources and their identifying codes were as follow:

1. HS - High School
2. YC - Youth Clubs
3. WE - Work Experience

4. OC - Other Colleges

5. OSU - Oklahoma State University

6. ST - Student Teaching

7. T - Teaching

The computer calculated a mean response for each source. There were cases where the individuals indicated that no competence development had occurred at particular sources. To handle this situation, the author inserted a response of "9." For example, if a student ranked the competence sources as follows--HS - 0, YC - 0, WE - 4, OC - 0, OSU - 1, ST - 2, T - 3--then the author would insert responses as follows: HS - 9, YC - 9, WE - 4, OC - 9, OSU - 1, ST - 2, T - 3. Therefore, the mean rank calculated by the computer would be HS - 6, YC - 6, WE - 4, OC - 6, OSU - 1, ST - 2, T - 3.

The statistical analysis system designed and implemented by Barr and Goodnight (30) at North Carolina State University was used to calculate the mean rank for the sources. From the mean rank the author assigned the final rank of one to the smallest and continued until the largest mean rank received number seven in the final rank.

The third response requested the graduates to indicate how often they had need of the competence on another five-point Likert type scale ranging from constantly through never. To permit the statistical treatment, numerical values were assigned as follows:

Constantly - 5

Frequently - 4

Occasionally - 3

Seldom - 2

Never - 1

The same calculations and comparisons were made on this response as the first response.

The fourth response asked the respondents to respond on a "yes" or "no" basis as to whether or not they needed more instruction in each competence. The computer calculated the number responding in both categories. The number of responses in the "yes" and "no" categories was converted into a percentage response by the author.

The second major part of the questionnaire was comprised of eight statements dealing with the opportunity for personal and professional development, which allowed the graduates to respond on a five-point Likert type scale with a continuum from excellent through satisfactory to poor. Numerical values assigned to each category to permit statistical treatment were as follow:

Excellent - 5

Good - 4

Satisfactory - 3

Fair - 2

Poor - 1

The same calculations and comparisons were again made on each of these statements as in the first and third response in part one. These were the mean response and the analysis of variance between the Oklahoma teachers and Out-of-State teachers and Transfer and Non-Transfer students.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

As discussed in the previous chapter, the questionnaire was developed to assess the perceived value of the graduates concerning the pre-service training they received in the Agricultural Education curriculum at Oklahoma State University.

To facilitate comparison of the findings between groups through mean response, analysis of variance, and percentage, numerical values were assigned to the response scale as previously discussed in Chapter III.

Also, due to a need to determine the average response of the groups and because these mean responses resulted in decimal fractions, a range of numerical values was established for each degree of response category as follows:

Range	Degree of Competence Held	Need or Use of Competence	Statements
4.50 - 5.00	Outstanding	Constantly	Excellent
3.50 - 4.49	Above Average	Frequently	Good
2.50 - 3.49	Average	Occasionally	Satisfactory
1.50 - 2.49	Below Average	Seldom	Fair
0 - 1.49	None	Never	Poor

Population

The population of this study was comprised of the 1971 and 1972 graduates of the Agricultural Education Department from Oklahoma State University who entered into the vocational agriculture teaching profession. This sample consisted of 83 graduates. There was a total of 55 entering the profession in Oklahoma and 28 entering the profession in ten different states other than Oklahoma. Nine of the graduates had left the profession after teaching one or more years. Also, five of the 28 who went out of state to teach had returned to Oklahoma to teach; however, they were reported as Out-of-State teachers in the study.

A total of 79 (95 percent) questionnaires were completed and returned by the graduates. There were two Oklahoma teachers, one out-of-state still teaching, and another graduate who taught one year out-of state before leaving the profession that did not respond.

Of the 79 respondents, 67 (85 percent) were transfer students and 12 (15 percent) were non-transfer students. Twenty-two (33 percent) transfer students went out of state, and 45 (67 percent) stayed in Oklahoma to teach. The percentage was the same for non-transfers, with four (33 percent) going out of state and eight (67 percent) staying in Oklahoma.

The transfer students transferred in an average of 60.1 hours and were enrolled at Oklahoma State University for an average of 2.56 years. The non-transfer students were enrolled at Oklahoma State University for an average of 4.12 years. The transfer students had taught 1.43 years on the average, as compared to 1.5 years for non-transfer students.

For statistical reasons four of the transfer students' responses were not calculated in the results. These consisted of three Oklahoma teachers and one Out-of-State teacher. The responses not calculated were selected out at random in the computer center.

The rest of the study sample consisted of 75 respondents which will be discussed in the following groups:

Groups	Number	Percentage
Oklahoma--Non-transfer	8	67
Oklahoma--Transfer	42	67
Out-of-State--Non-transfer	4	33
Out-of-State--Transfer	21	33
All Non-Transfer	12	16
All Transfer	63	84
All Oklahoma	50	67
All Out-of-State	25	33
Overall	75	100

Findings of the Study

The following section of this chapter is an attempt to present and analyze data collected relative to the competencies and the statements. To facilitate presentation of these responses, this section will be divided into two main parts. The first section will present and analyze the nine competencies studied, and the second will cover the eight statements.

Tables were developed showing the different categories the graduates were separated into, number in each group, mean response, and percentage response. Additional tables were developed to show the mean and final rank of the graduates by groups on how they ranked the sources of development for the competence to the nine areas of teaching chosen

for investigation and the statements concerning the opportunities of students for personal and professional development.

Agricultural Economics

Inspection of the data in Table I indicates that the overall mean response as to the degree of competence held in Agricultural Economics by the teachers was 3.13, which was an average degree on the scale explained earlier. The mean responses by the groups ranged from a high of 3.75 (above average) for Oklahoma Non-Transfer teachers to a low of 2.98 (average) for the Oklahoma Transfer teachers. This data also revealed the Transfer students' mean response of 3.07 was slightly lower than the Non-Transfers' mean response of 3.50; however, both mean responses were in the average range. The mean response for Oklahoma teachers of 3.10 was very close to the mean response of 3.20 for the Out-of-State teachers.

The analysis of variance of differences in mean responses between the Oklahoma and Out-of-State teachers produced an F-value of .391, which was not significant at the .05 level. The analysis of variance of differences between the Transfer and Non-Transfer students' responses produced an F-value of 4.50, which was significant at the .05 level. Also, when the groups' responses were analyzed for the presence of interaction, an F-value of 5.38 was calculated, which indicated that there was a significant degree of interaction among the groups.

Oklahoma Non-Transfer teachers indicated by their 4.00 mean response in Table I that they had need of their competence in Agricultural Economics frequently. The Out-of-State Non-Transfer graduates had a mean response of 3.50, which indicated they used the competence

TABLE I

SUMMARY OF RESPONSES AS TO DEGREE OF COMPETENCE, FREQUENCY OF NEED, AND NEED OF MORE INSTRUCTION IN THE AREA OF AGRICULTURAL ECONOMICS

Respondent Group	Number	Degree of Competence Held (Mean Response)	Frequency of Need of the Competence (Mean Response)	Need of More Instruction			
				Yes		No	
				Number	Percent	Number	Percent
Oklahoma--Non-Transfer	8	3.75	4.00	6	75	2	25
Oklahoma--Transfer	42	2.98	3.62	30	71	12	29
Out-of-State--Non-Transfer	4	3.00	3.50	3	75	1	25
Out-of-State--Transfer	21	3.24	3.67	11	52	10	48
All Non-Transfer	12	3.50	3.83	9	75	3	25
All Transfer	63	3.07	3.63	41	65	22	35
All Oklahoma	50	3.10	3.68	36	72	14	28
All Out-of-State	25	3.20	3.64	14	56	11	44
Overall Response	75	3.13	3.67	50	67	25	33

occasionally. The overall mean response of 3.67 indicated that on the average the entire teacher group frequently used their Agricultural Economics competence. When divided into groups, it was found that the Oklahoma teachers used their competence slightly more frequently than did the Out-of-State teachers, as indicated by the 3.68 and 3.64 respective mean responses; however, both groups used the competence frequently. The Non-Transfer teachers' mean response of 3.83 indicated they used their competence more frequently than did the Transfer teachers, whose mean response was 3.63. But again, both groups' mean response was in the frequent category.

The F-value determined in the analysis of variance test of differences in mean responses between the Oklahoma and Out-of-State teachers groups was .050, which was not significant at the .05 level. In a comparison of the Transfer and Non-Transfer groups, the F-value of .75 was not significant. The test for interaction also produced a non-significant F-value of 1.27.

Further analysis of Table I revealed that 67 percent of the study population felt they needed more instruction in Agricultural Economics, while the remainder indicated they did not. Data from both the Oklahoma and Out-of-State Non-Transfer groups showed that 75 percent of the teachers wanted more instruction. The Out-of-State Transfers comprised the group revealing the least desire for additional training, with 48 percent indicating they did not want more instruction in Agricultural Economics. Three-fourths of the Non-Transfer teachers' group wanted more instruction, compared to only 65 percent of the Transfer group desiring more training in Agricultural Economics. It was revealed that 72 percent of the Oklahoma teachers as a group wanted more instruction,

whereas only 56 percent of the Out-of-State teachers felt the need for more Agricultural Economics instruction.

As pointed out earlier, the graduates were asked to rank certain sources in terms of their value for development of competence as it pertained to their role as a vocational agriculture teacher. In order to get an average ranking, mean responses were calculated; and the group rankings were derived from these means. The final rank was established on the basis of the order of mean ranks. It was expressed by some graduates that competence was not developed at all sources. In order to handle this situation, the sources which individuals did not rank or respond to were assigned the value of 9, and this figure was averaged in to arrive at the mean rank.

Data summarized in Table II showed that all respondents agreed that Oklahoma State University was where their Agricultural Economics competence was developed the most. A comparison of the mean responses for all the groups clearly indicates that the other sources were rated more than one point lower than Oklahoma State University. The mean responses point out that neither High School training nor Youth Clubs played important parts in the development of the knowledge of Agricultural Economics that could be utilized in their duties as vocational agriculture teachers. The Non-Transfer group ranked Work Experience second (2.91), Teaching third (3.24), and Student Teaching fourth (3.83), compared to the Transfer teachers' ranking Teaching second (3.50), Other Colleges third (3.77), and Work Experience fourth (3.80).

The major difference between the Oklahoma and Out-of-State teachers was their perceived value of student teaching as a source of development for Agricultural Economics. The Oklahoma teachers' mean response of

TABLE II

RESPONDENT GROUP RANKING OF SELECTED SOURCES OF COMPETENCE DEVELOPMENT IN THE AREA OF AGRICULTURAL ECONOMICS

	Oklahoma Non Transfer		Oklahoma Transfer		Out-of-State Non Transfer		Out-of-State Transfer		All Non Transfer		All Transfer		All Oklahoma		All Out-of-State		OVERALL	
SOURCES	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank
HIGH SCHOOL	4.00	4.5	5.02	6	3.75	5	4.76	5	3.91	5	4.93	6	4.85	6	4.59	5	4.76	6
YOUTH CLUBS	5.81	6	5.59	7	5.13	6	6.50	7	5.58	6	5.89	7	5.62	7	6.28	7	5.84	7
WORK EXPERIENCE	2.75	2	3.83	3	3.25	3	3.74	3	2.91	2	3.80	4	3.65	2	3.66	3	3.65	3
OTHER COLLEGE	6.93	7	3.76	2	6.87	7	3.79	4	6.91	7	3.77	3	4.26	5	4.28	4	4.27	4
OKLA STATE UNIV	1.13	1	1.76	1	2.50	1	1.48	1	1.58	1	1.66	1	1.65	1	1.64	1	1.65	1
STUDENT TEACHING	4.00	4.5	4.17	5	3.50	4	4.92	6	3.83	4	4.42	5	4.14	4	4.69	6	4.32	5
TEACHING	3.37	3	3.85	4	3.00	2	2.81	2	3.24	3	3.50	2	3.77	3	2.84	2	3.46	2

4.14 ranked Student Teaching fourth, compared to a sixth place ranking (4.69) by the Out-of-State group.

Agronomy and/or Plant Sciences

According to the data summarized in Table III, the overall mean response of 3.24 implied the teachers felt they possessed an average degree of competence in Agronomy and/or Plant Sciences. Group mean responses varied from a high of 3.50 for the Out-of-State group to the 3.12 reported from the Oklahoma Non-Transfer group. All groups reported a mean response within the average category. The Non-Transfer teachers' group response of 3.25 almost coincided with the Transfers' mean response of 3.24. However, there was a wider range in the mean response between the state groups with the Oklahoma teachers providing the lower response of 3.20 and a 3.32 for the Out-of-State teachers.

Comparison of the Oklahoma and Out-of-State teachers' mean responses produced an F-value of .714 from the analysis of variance test. This indicated there was not a significant difference in the expressed opinions about the competence at the .05 level. Neither was there a significant difference between the Transfer and Non-Transfer groups, as the analysis of variance produced an F-value of .006. Interaction was not present as a F-value of .383 was calculated.

Teachers frequently used their knowledge of Agronomy and/or Plant Sciences as denoted by the overall mean response of 3.99 reported in Table III. The Out-of-State teachers' mean response of 4.08, as compared to the mean response of 3.94 for Oklahoma teachers, indicated this competence was needed slightly more in other states. The range of need ranged from a high mean response of 4.25 for Out-of-State Non-

TABLE III

SUMMARY OF RESPONSES AS TO DEGREE OF COMPETENCE, FREQUENCY OF NEED, AND NEED OF MORE INSTRUCTION IN THE AREA OF AGRONOMY AND/OR PLANT SCIENCES

Respondent Group	Number	Degree of Competence Held (Mean Response)	Frequency of Need of the Competence (Mean Response)	Need of More Instruction			
				Yes		No	
				Number	Percent	Number	Percent
Oklahoma--Non-Transfer	8	3.12	3.87	8	100	0	0
Oklahoma--Transfer	42	3.21	3.95	35	83	7	17
Out-of-State--Non-Transfer	4	3.50	4.25	1	25	3	75
Out-of-State--Transfer	21	3.29	4.05	12	57	9	43
All Non-Transfer	12	3.25	4.00	9	75	3	25
All Transfer	63	3.24	3.98	47	75	16	25
All Oklahoma	50	3.20	3.94	43	86	7	14
All Out-of-State	25	3.32	4.08	13	52	12	48
Overall Response	75	3.24	3.99	56	75	19	25

Transfer teachers to the Oklahoma Non-Transfer teachers' 3.87 response. Table III showed the analogous responses of the two transfer groups of 3.98 and 4.00 for Transfer and Non-Transfer, respectively. The mean response of all groups was in the "frequently" classification.

A calculated F-value of .483 was derived from the mean responses of the Oklahoma and Out-of-State teachers and indicates there was no significant difference between the groups. The analysis of variance between the Non-Transfer and Transfer groups yielded an F-value of .002, which is not significant at the .05 level. No interaction was present between the two groups, as denoted by a .415 F-value in the test for interaction.

According to the data presented in Table III, 75 percent of the teachers felt they needed more instruction in Agronomy and/or Plant Science. Transfer and Non-Transfer groups responded identically when 75 percent of both groups signified they wanted more training. However, Table III showed 100 percent of the Oklahoma Non-Transfer group desired additional instruction in the competence, compared to only 25 percent of the Out-of-State Non-Transfer group. The Oklahoma Non-Transfer group verified their need for more training, rating themselves lowest (3.87) in the degree of competence they held. The Oklahoma teachers group revealed that 86 percent wanted more instruction in this area in contrast to only 52 percent of the Out-of-State teacher group.

In expressing their opinions about where they received the competence needed as vocational agriculture teachers in the areas of Agronomy and/or Plant Science, as revealed in Table IV, the graduates as a group ranked the sources in order as follows: (1) Oklahoma State University - 2.00; (2) High School - 3.76; (3) Other Colleges - 3.88; (4) Work

TABLE IV

RESPONDENT GROUP RANKING OF SELECTED SOURCES OF COMPETENCE DEVELOPMENT IN THE AREA OF AGRONOMY AND/OR PLANT SCIENCES

SOURCES	Oklahoma Non Transfer		Oklahoma Transfer		Out-of-State Non Transfer		Out-of-State Transfer		All Non Transfer		All Transfer		All Oklahoma		All Out-of-State		OVERALL	
	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank
HIGH SCHOOL	2.75	2	3.57	3	3.00	2	4.67	5	2.83	2	3.94	3	3.44	2	4.40	5	3.76	2
YOUTH CLUBS	5.94	6	5.61	7	4.75	6	6.43	7	5.54	6	5.88	7	5.66	7	6.16	7	5.82	7
WORK EXPERIENCE	3.50	4	4.14	4	4.00	4	3.67	3.5	3.67	4	3.98	4	4.04	3.5	3.72	4	3.93	4
OTHER COLLEGE	6.94	7	3.49	2	6.75	7	2.95	2	6.88	7	3.31	2	4.04	3.5	3.56	2	3.88	3
OKLA STATE UNIV	1.13	1	2.24	1	1.75	1	1.90	1	1.34	1	2.12	1	2.06	1	1.87	1	2.00	1
STUDENT TEACHING	4.50	5	4.65	6	4.50	5	4.71	6	4.50	5	4.67	6	4.62	6	4.68	6	4.64	6
TEACHING	3.25	3	4.33	5	3.25	3	3.67	3.5	3.25	3	4.11	5	4.16	5	3.60	3	3.97	5

Experience - 3.93; (5) Teaching - 3.97; (6) Student Teaching - 4.64; (7) Youth Clubs - 5.82. It is interesting to note that the mean response assigned to Oklahoma State University ranked it first by more than one point over all other sources, while High School, Other Colleges, Work Experience, and Teaching were only separated by .25 of a point. Youth Clubs and Student Teaching did not seem to play a very important role in the development of competence in this area for the vocational agriculture teachers' duties, as indicated by the mean rankings assigned by the respondents. The major difference in the rank order of sources between the Transfer and Non-Transfer groups was the influence Other Colleges had on the Transfer students. Although the Transfer groups' mean rank for Oklahoma State University was 2.12, a number one ranking, the figures were lower than the Non-Transfers' mean rank for Oklahoma State University of 1.34. Mean ranks of the Oklahoma and Out-of-State teachers showed that the Oklahoma teachers felt High School played a larger part in the development of Agronomy and/or Plant Sciences competence than it did for the Out-of-State group.

Animal Science

Examination of the data in Table V reveals the graduates felt they had an above-average degree of competence in the field of Animal Science, as verified by their mean response of 3.93. This overall mean response showed the graduates felt they possessed a higher degree of competence in Animal Science than in any of the other competencies studied. Oklahoma Non-Transfer graduates disclosed the highest mean response (4.37) for the degree of competence held in Animal Science, and the Out-of State Non-Transfer groups' mean response of 3.75 was the lowest.

TABLE V

SUMMARY OF RESPONSES AS TO DEGREE OF COMPETENCE, FREQUENCY OF NEED, AND NEED OF MORE INSTRUCTION IN THE AREA OF ANIMAL SCIENCES

Respondent Group	Number	Degree of Competence Held (Mean Response)	Frequency of Need of the Competence (Mean Response)	Need of More Instruction			
				Yes		No	
				Number	Percent	Number	Percent
Oklahoma--Non-Transfer	8	4.37	4.87	6	75	2	25
Oklahoma--Transfer	42	3.95	4.71	34	81	8	19
Out-of-State--Non-Transfer	4	3.75	4.75	2	50	2	50
Out-of-State--Transfer	21	3.76	4.76	12	57	9	43
All Non-Transfer	12	4.17	4.83	8	67	4	33
All Transfer	63	3.89	4.73	46	73	17	27
All Oklahoma	50	4.02	4.74	40	80	10	20
All Out-of-State	25	3.76	4.76	14	56	11	44
Overall Response	75	3.93	4.75	54	72	21	28

The Oklahoma teachers' group mean response was above average (4.02), commensurate with a 3.76 for the Out-of-State group. The Transfer teachers' mean response of 3.89 was slightly lower than the Non-Transfers' 4.17 response; yet both remained in the above-average category.

The differences between all responses collected relative to the degree of competence held in Animal Sciences were subjected to an analysis of variance test to determine if there was a significant difference between the Oklahoma teachers and Out-of-State teachers and also between the Transfer and Non-Transfer groups. Knowledge of Animal Science is constantly used by the teachers of vocational agriculture included in this study, as pointed out by the overall mean response of 4.75 shown in Table V. The Oklahoma Non-Transfer groups' mean response of 4.87 was the highest, while the Oklahoma Transfer teachers' calculated mean response of 4.71 was the lowest. All the responding groups' mean responses were in the "constant" category. Oklahoma teachers' average response of 4.74 was almost the same as the mean response of the Out-of-State teachers' 4.76. The Non-Transfer group responded at a higher level of use (4.83) than did the Transfer group (4.73) in the use of the Animal Science competence. In the analysis of variance test for differences between the Oklahoma and Out-of-State teachers, an F-value of .03 indicated there was no significant difference at the .05 level of confidence. A computed F-value of .476 also showed there was no difference between the Transfer and Non-Transfer group in their use of the Animal Science knowledge. No interaction was present, as an F-value of .296 signified.

Additional examination of the data presented in Table V revealed 72 percent of the teachers expressed a need for additional instruction in Animal Science. The Oklahoma teachers' response revealed that 80 percent wanted more training in Animal Science, in contrast to only 56 percent of the Out-of-State teachers. It should be noted that the Oklahoma teachers' mean response to the degree of competence held was higher than the Out-of-State teachers. The group of Oklahoma Transfer teachers' response was the highest, with 81 percent desiring additional instruction; and the group indicating the least need of more Animal Science instruction was the Out-of-State Non-Transfer teachers with 51 percent.

In indicating the order of importance of selected sources where their Animal Science competence was developed, the groups' responses as summarized in Table VI showed evidence of some diversity of opinions. For example, in comparing across groups, High School, Other Colleges, and, to some extent, Youth Clubs received more of a variety in mean rank values than was observed for other areas of emphasis. Overall, Oklahoma State University was ranked as the most important source of competence development in this area, with a 2.52 mean rank, and was followed in order by Work Experience (3.37), High School (3.46), Other Colleges (4.34), Teaching (4.36), Student Teaching (4.93), and Youth Clubs (4.97).

In analyzing the difference between the Non-Transfer and Transfer groups it is interesting that both groups ranked Work Experience second; however, the Non-Transfers' mean rank of 2.42 was more than one point lower than the Transfers' mean rank of 3.55. Also, both final ranks show High School as the third most important source in the development

TABLE VI

RESPONDENT GROUP RANKING OF SELECTED SOURCES OF COMPETENCE DEVELOPMENT IN THE AREA OF ANIMAL SCIENCES

SOURCES	Oklahoma Non Transfer		Oklahoma Transfer		Out-of-State Non Transfer		Out-of-State Transfer		All Non Transfer		All Transfer		All Oklahoma		All Out-of-State		OVERALL	
	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank
HIGH SCHOOL	2.88	3	3.31	2	1.75	1	4.29	5	2.50	3	3.64	3	3.24	3	3.88	4	3.46	3
YOUTH CLUBS	5.06	6	4.69	6	3.25	3	5.81	7	4.46	5	5.06	7	4.75	6	5.40	7	4.97	7
WORK EXPERIENCE	1.88	2	3.40	3	3.50	4	3.86	3	2.42	2	3.55	2	3.15	2	3.80	3	3.37	2
OTHER COLLEGE	6.81	7	4.21	4	7.00	7	3.14	2	6.87	7	3.85	4	4.63	5	3.76	2	4.34	4
OKLA STATE UNIV	1.75	1	2.83	1	2.50	2	2.10	1	2.00	1	2.59	1	2.66	1	2.16	1	2.52	1
STUDENT TEACHING	4.75	5	4.93	7	5.75	6	4.86	6	5.08	6	4.91	6	4.90	7	5.00	6	4.93	6
TEACHING	4.13	4	4.62	5	4.25	5	3.95	4	4.17	4	4.40	5	4.54	4	4.00	5	4.36	5

of their Animal Science competence, and again there was more than one point difference in the mean ranks. Other Colleges received a mean rank of 3.85 from the Transfer teachers, which was fourth in their final rank of important sources for developing the competence.

The difference of mean rank responses between the Oklahoma and Out-of-State teacher groups also showed evidence of the diversity mentioned earlier. However, the final rankings were very similar, except for the influence of Other Colleges on the Out-of-State group, where their final ranking had the Other Colleges second, compared to a fifth place ranking for the Oklahoma teacher group. The Out-of-State groups' mean rank varied from 2.16 for Oklahoma State University to 5.40 for Youth Clubs, in contrast to the Oklahoma groups' 2.66 for Oklahoma State University to 4.90 for Student Teaching. The Student Teaching final rank was low in the two comparison groups with sixth place in three groups and seventh in the other group.

Mechanized Agriculture

In analyzing the data in Table VII one immediately notices the overall mean response of 3.45, which indicates an average degree of competence in Mechanized Agriculture. This mean response was surpassed by the mean responses of 3.93 and 3.63 for the Animal Science and FFA Advisor competencies. The graduates rated this competence as their third highest through their mean responses. It should be pointed out the mean response for Mechanized Agriculture was only .05 from being in the above-average category. The mean responses ranged from 3.87 to 3.00 for the Oklahoma Non-Transfer and Out-of-State Non-Transfer groups, respectively. However, Non-Transfer teachers as a group had a mean

TABLE VII

SUMMARY OF RESPONSES AS TO DEGREE OF COMPETENCE, FREQUENCY OF NEED, AND NEED OF MORE INSTRUCTION IN THE AREA OF MECHANIZED AGRICULTURE

Respondent Group	Number	Degree of Competence Held (Mean Response)	Frequency of Need of the Competence (Mean Response)	Need of More Instruction			
				Yes		No	
				Number	Percent	Number	Percent
Oklahoma--Non-Transfer	8	3.87	5.00	7	88	1	12
Oklahoma--Transfer	42	3.45	4.29	35	83	7	17
Out-of-State--Non-Transfer	4	3.00	4.00	3	75	1	25
Out-of-State--Transfer	21	3.38	4.38	17	81	4	19
All Non-Transfer	12	3.58	4.67	10	83	2	17
All Transfer	63	3.43	4.35	52	83	11	17
All Oklahoma	50	3.52	4.40	42	84	8	16
All Out-of-State	25	3.32	4.40	20	80	5	20
Overall Response	75	3.45	4.40	62	83	13	17

response of 3.58, which was slightly higher than the Transfer groups' 3.43 mean response. Oklahoma teachers as a group reported they had an above-average degree (3.52) of Mechanized Agriculture competence, whereas the Out-of-State teachers reported an average degree (3.32).

In the test for differences between the responses of the Oklahoma and Out-of-State teachers, an F-value of 1.28 was calculated, showing there was no significant difference between the groups' mean responses at the .05 level of confidence even though the mean responses put them into different categories. Also, there was no difference indicated by a .448 F-value in the test between the Transfer and Non-Transfer teachers. An F-value of 2.68 was not large enough to prove there was a significant degree of interaction present.

Mechanized Agriculture knowledge is frequently used by the average teacher as alluded to by the overall mean response of 4.40 in Table VII. Although the teachers felt this was their third best area of knowledge, it was their fourth most used competence. Oklahoma Non-Transfer teachers' mean response of 5.00 indicated they needed the competence more often than any other group, while their Non-Transfer counterparts who went out of state to teach designated a need of 4.00, which was the lowest. However, in comparing all the Non-Transfer teachers with the Transfer teachers, the 4.67 and 4.35 respective mean responses indicated the Non-Transfer group used their Mechanized Agriculture knowledge slightly more than the Transfer group. An identical mean response of 4.40 was reported in the use of the competence by the Oklahoma and Out-of-State teacher groups.

The identical mean response between the Oklahoma and Out-of-State teachers produced a zero F-value. The analysis of variance test for

difference between the Non-Transfer and Transfer teachers provided an F-value of 2.42, which testified no significant difference could be attributed to something other than chance at the .05 level of confidence. Interaction was proven present above the .01 level of confidence with a calculated 7.56 F-value. Although there was some non-significant difference present between the Non-Transfer and Transfer groups' mean responses, the interaction test points out we cannot say why.

Tabulation of the mean responses in Table VII concerning the need of more instruction in the Mechanized Agriculture area indicated that 83 percent of the graduates felt they needed more instruction. Although the overall mean response in the amount of competence held denoted the third highest in Mechanized Agriculture, the 83 percent was the largest percent wanting more instruction in any of the competencies studied. Oklahoma Non-Transfer teachers, who reported they constantly use the knowledge and had the highest degree of Mechanized Agriculture competence of any of the groups, disclosed that 88 percent wanted more instruction, which was the group with the highest percent wanting more instruction. The Non-Transfer group who went out of state to teach was the group indicating the least desire for additional instruction; yet 75 percent wanted more instruction. When the two groups were combined into the Non-Transfer group, the mean response was 83 percent wanting additional instruction, which was the identical mean response of the Transfer group. Oklahoma teachers as a group reported more need for additional training than Out-of-State teachers, as indicated by the 84 and 83 percent respective mean responses.

In regard to the value of sources for the development of their Mechanized Agriculture competence, the mean ranks of the groups, as

displayed in Table VIII, denote similar patterns of response. The graduates' rank order and final rankings of the sources for development of competence were as follow: (1) OSU - 2.24, (2) Work Experience - 3.32, (3) High School - 3.39, (4) Teaching - 3.72, (5) Student Teaching - 4.23, (6) Other Colleges - 5.29, and (7) Youth Clubs - 5.80.

The only deviation of the Oklahoma and Out-of-State groups from the overall final rank was the expressed opinion of the Out-of-State teachers about their Work Experience and Teaching. They reversed the final rank of these two with a mean rank of 3.47 for the Teaching and 3.58 for their Work Experience. This ranked Teaching as the second most important source of competence development for Out-of-State teachers in contrast to fourth for Oklahoma teachers. Also, the Out-of-State teachers ranked Work Experience as fourth, as compared to a ranking of second reported by the Oklahoma teachers.

In analyzing the Non-Transfer and Transfer groups' final rankings, Table VIII revealed the identical ranking of the Transfer group to the overall final ranking. Non-Transfer teachers varied from the overall final ranking by having identical mean rankings of 2.75 for Oklahoma State University and Work Experience; therefore, they received a 1.5 final rank instead of a one and two, as did the two sources in overall final ranking. The Non-Transfer teachers ranked Other Colleges last instead of the Youth Clubs, as they never attended another college.

Sciences Related to Agriculture

According to the 3.24 overall mean response presented in Table IX, the teachers felt they had an average degree of competence in the Sciences Related to Agriculture. An above-average mean response of 3.50

TABLE VIII

RESPONDENT GROUP RANKINGS OF SELECTED SOURCES OF COMPETENCE DEVELOPMENT IN THE AREA OF MECHANIZED AGRICULTURE

SOURCES	Oklahoma Non Transfer		Oklahoma Transfer		Out-of-State Non Transfer		Out-of-State Transfer		All Non Transfer		All Transfer		All Oklahoma		All Out-of-State		OVERALL	
	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank
HIGH SCHOOL	3.38	3.5	3.31	2	2.00	1	3.81	4	2.92	3	3.48	3	3.32	3	3.52	3	3.39	3
YOUTH CLUBS	6.00	6	5.70	7	4.37	5	6.21	7	5.46	6	5.87	7	5.75	7	5.92	7	5.80	7
WORK EXPERIENCE	2.13	1	3.40	3	4.00	4	3.50	2	2.75	1.5	3.43	2	3.20	2	3.58	4	3.32	2
OTHER COLLEGE	7.00	7	5.19	6	6.88	7	4.55	6	6.96	7	4.98	6	5.48	6	4.92	6	5.29	6
OKLA STATE UNIV	2.63	2	2.19	1	3.00	2	2.05	1	2.75	1.5	2.14	1	2.26	1	2.20	1	2.24	1
STUDENT TEACHING	3.50	5	4.27	5	4.50	6	4.36	5	3.83	5	4.30	5	4.15	5	4.38	5	4.23	5
TEACHING	3.38	3.5	3.93	4	3.25	3	3.52	3	3.34	4	3.79	4	3.84	4	3.47	2	3.72	4

TABLE IX

SUMMARY OF RESPONSES AS TO DEGREE OF COMPETENCE, FREQUENCY OF NEED, AND NEED OF MORE INSTRUCTION IN THE AREA OF SCIENCES RELATED TO AGRICULTURE

Respondent Group	Number	Degree of Competence Held (Mean Response)	Frequency of Need of the Competence (Mean Response)	Need of More Instruction			
				Yes		No	
				Number	Percent	Number	Percent
Oklahoma--Non-Transfer	8	3.62	4.25	8	100	0	0
Oklahoma--Transfer	42	3.24	3.95	31	74	11	26
Out-of-State--Non-Transfer	4	3.25	3.50	3	75	1	25
Out-of-State--Transfer	21	3.10	3.71	15	71	6	29
All Non-Transfer	12	3.50	4.00	11	92	1	8
All Transfer	63	3.19	3.87	46	73	17	27
All Oklahoma	50	3.30	4.00	39	78	11	22
All Out-of-State	25	3.12	3.68	18	72	7	28
Overall Response	75	3.24	3.89	57	76	18	24

was reported by the Non-Transfer group, while the Transfer groups' mean response of 3.19 indicated they felt they had an average degree of competence. The Non-Transfer group who stayed in Oklahoma to teach had the highest mean response reported (3.62), and the Transfer group who went out of state to teach reported the lowest mean response (3.10). Oklahoma teachers and Out-of-State teachers both indicated they held an average degree of competence in the Sciences Related to Agriculture with their 3.30 and 3.12 respective mean responses.

Results of the test for the variance of differences between the mean response of Oklahoma and Out-of-State teacher groups yielded an F-value of .833, which signified there was no significant difference at the .05 level of confidence. Even though the mean response from the Non-Transfer and Transfer groups were in different categories, the analysis of variance test showed there was no significant difference between the groups' mean responses, as revealed by the F-value of 1.49. The test for interaction denoted there was no interaction present with a .186 F-value.

As detailed in Table IX, all the groups frequently used their Sciences Related to Agriculture knowledge. The overall mean response was 3.89. In analyzing the mean responses from the groups, the 4.25 mean response from Oklahoma Non-Transfer teachers was the highest and the 3.50 from the Out-of-State Non-Transfer group was the lowest. The Non-Transfer group, regardless of where they taught, registered a mean response of 4.00, which was slightly higher than the 3.87 registered by the Transfer group. Oklahoma teachers' mean response of 4.00 suggested they used their knowledge in the science-related areas of agriculture more often than Out-of-State teachers, who registered a mean response of 3.68.

To determine if the difference in the mean response between the Oklahoma and Out-of-State teacher groups was significant, an analysis of variance test was calculated. This test produced an F-value of 3.13. To show the difference to be significant at the .05 level, the F-value must be 3.98. Although the mean response showed a difference, the F-value proved it was not significant at the .05 level of confidence. The test between the Transfer and Non-Transfer group also showed no difference existed, with a small F-value of .298. An F-value of 1.08 signified there was no significant degree of interaction present.

Mean responses of the groups' desire for additional instruction in the Sciences Related to Agriculture varied, as Table IX revealed a range of 100 percent for the Oklahoma Non-Transfer group to a low of 71 percent for the Out-of-State Transfer group desiring additional instruction. The overall response indicated 76 percent of the teachers felt a need for more training. Comparison of the Non-Transfer and Transfer groups revealed that 92 percent of the Non-Transfer group wanted more training, while only 73 percent of the Transfer group indicated the same need. The mean responses also showed the Non-Transfer group reported holding a higher degree of competence and using it more often. The Oklahoma teachers' mean response indicated they held a higher degree of competence and made more frequent use of this related science than the Out-of-State teachers. Also, a higher percentage wanted additional training than the Out-of-State teachers, as the 78 and 72 percent affirmative responses respectively denoted.

Through their mean ranking, as presented in Table X, the graduates testified that Oklahoma State University was the place where they learned the most about the Sciences Related to Agriculture as they pertain to

TABLE X

RESPONDENT GROUP RANKINGS OF SELECTED SOURCES OF COMPETENCE DEVELOPMENT IN THE AREA OF SCIENCES RELATED TO AGRICULTURE

SOURCES	Oklahoma Non Transfer		Oklahoma Transfer		Out-of-State Non Transfer		Out-of-State Transfer		All Non Transfer		All Transfer		All Oklahoma		All Out-of-State		OVERALL	
	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank
HIGH SCHOOL	3.13	2	3.90	4	3.25	3	4.55	5	3.17	2	4.12	5	3.78	3	4.34	5	3.97	4
YOUTH CLUBS	5.56	6	5.49	7	5.63	6	6.40	7	5.58	6	5.79	7	5.50	7	6.28	7	5.76	7
WORK EXPERIENCE	3.63	4	3.52	2	4.25	4.5	4.02	4	3.84	4	3.69	3	3.54	2	4.05	4	3.71	2
OTHER COLLEGE	6.94	7	3.79	3	6.88	7	3.24	2	6.92	7	3.60	2	4.29	5	3.82	3	4.14	5
OKLA STATE UNIV	1.00	1	2.05	1	1.00	1	1.86	1	1.00	1	1.99	1	1.88	1	1.72	1	1.83	1
STUDENT TEACHING	4.25	5	4.94	6	4.25	4.5	4.64	6	4.25	5	4.84	6	4.83	6	4.58	6	4.75	6
TEACHING	3.50	3	4.31	5	2.75	2	3.29	3	3.25	3	3.97	4	4.18	4	3.20	2	3.85	3

the duties of a vocational agriculture teacher. The importance of this source is substantiated by the finding that all groups ranked Oklahoma State University more than 1.50 points higher than their second place source. Work Experience played an important part in the development of science competencies related to agriculture, as borne out by the overall mean rank of 3.71 and final rank of second. These were followed in order by (3) Teaching - 3.85, (4) High School - 3.97, (5) Other Colleges - 4.14, (6) Student Teaching - 4.75, and (7) Youth Clubs - 5.76.

Teaching and High School were the other significant sources where the graduates learned about the Sciences Related to Agriculture as the overall mean ranks showed. Even though Teaching was third in the final rank, the mean rank of 3.85 is only slightly higher than that for High Schools, which was third in the final rank with a 3.97.

Professional Education

Inspection of the data in Table XI showed the overall mean response to the degree of Professional Education competence was 3.37, which indicated the graduates felt they were only average in this area. The mean response by groups ranged from a high of 3.87 (above average) for Oklahoma Non-Transfer teachers to a low of 3.25 (average) for the Out-of-State Non-Transfer teachers. However, the combined group of Non-Transfers recorded a higher mean response than did the Transfer group, with respective responses of 3.67 and 3.32. These responses indicated the Non-Transfer students felt they were above average compared to the Transfers' average classification. The mean response for Oklahoma teachers of 3.38 was very close to the mean response of 3.36 for the Out-of-State teachers. Both groups' mean responses were in the average category.

TABLE XI

SUMMARY OF RESPONSES AS TO DEGREE OF COMPETENCE, FREQUENCY OF NEED, AND NEED OF MORE INSTRUCTION IN THE AREA OF PROFESSIONAL EDUCATION

Respondent Group	Number	Degree of Competence Held (Mean Response)	Frequency of Need of the Competence (Mean Response)	Need of More Instruction			
				Yes		No	
				Number	Percent	Number	Percent
Oklahoma--Non-Transfer	8	3.87	4.62	6	75	2	25
Oklahoma--Transfer	42	3.29	4.38	26	62	16	38
Out-of-State--Non-Transfer	4	3.25	5.00	2	50	2	50
Out-of-State--Transfer	21	3.38	4.67	10	48	11	52
All Non-Transfer	12	3.67	4.75	8	67	4	33
All Transfer	63	3.32	4.48	36	57	27	43
All Oklahoma	50	3.38	4.42	32	64	18	36
All Out-of-State	25	3.36	4.72	12	48	13	52
Overall Response	75	3.37	4.52	44	59	31	41

The analysis of variance of difference in mean responses between the Oklahoma and Out-of-State teachers produced an F-value of .013, which was not significant at the .05 level of confidence. Although the mean response of the Transfer and Non-Transfer teachers fell into different categories, the test for difference produced an F-value of 2.48. This value did show some difference was present; however, it was not enough to prove significant at the .05 level of confidence.

Teachers were constantly using the skills needed in the Professional Education area, as denoted by the overall mean response of 4.52 reported in Table XI. The degree of need ranged from a high mean response of 5.00 for Out-of-State Transfer teachers to the Oklahoma teachers' 4.38 response. It is interesting to note the Out-of-State Non-Transfer teachers indicated by their mean response they used the competence more than the other groups; yet they perceived that they held the lowest degree of competence in the area. However, the Non-Transfer groups' mean response of 4.75 suggested they used the competence more than did the Transfer groups by their response of 4.48. When divided into groups, it was found that the Out-of-State teachers used their competence slightly more frequently than did the Oklahoma teachers, as indicated by the 4.72 and 4.42 respective mean responses.

The F-value determined in the analysis of variance test of differences in mean responses between the Oklahoma and Out-of-State teacher groups was 2.63, proving there was no significant difference at the .05 level even though the mean responses were in a different category. In a comparison of the Transfer and Non-Transfer groups, the F-value of 1.33 showed the difference not to be significant. The test for interaction also produced a non-significant F-value of .031.

Further analysis of Table XI revealed that only 59 percent of the study population felt they needed more Professional Education instruction. This showed that the graduates felt they needed instruction in all the other competencies included in this study before Professional Education. The Oklahoma Non-Transfer average response indicated that 75 percent wanted more instruction, which was the group with the highest percent of this indication, in comparison to the low of 48 percent for the Out-of-State Transfer group. The breakdown between the Non-Transfer and Transfer teachers indicated that 67 percent of the Non-Transfer group wanted more instruction, compared to 57 percent of the Transfer group. It was revealed that 64 percent of the Oklahoma teachers as a group wanted more instruction, whereas only 48 percent of the Out-of-State teachers felt the need for more instruction in Professional Education.

The Agricultural Education curriculum at Oklahoma State University is designed in a logical sequence to enhance the students' ability to perform in the Professional Education competence area. The data recapitulated in Table XII signifies the importance Oklahoma State University had in the development of this competence through the mean ranking. All the groups' mean rankings clearly showed that Oklahoma State University was the source where the graduates felt their competence was developed to the greatest extent.

The second most valuable source as determined by the final rank was their Student Teaching experience, with an overall mean rank of 2.81. It should be noted that all groups' top three sources in both mean and final rank besides Oklahoma State University were either Student Teaching or Teaching. The overall mean rank arranged the sources in the

TABLE XII

RESPONDENT GROUP RANKINGS OF SELECTED SOURCES OF COMPETENCE DEVELOPMENT IN THE AREA OF PROFESSIONAL EDUCATION

SOURCES	Oklahoma Non Transfer		Oklahoma Transfer		Out-of-State Non Transfer		Out-of-State Transfer		All Non Transfer		All Transfer		All Oklahoma		All Out-of-State		OVERALL	
	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank
HIGH SCHOOL	4.75	4	5.18	6	3.63	4	5.60	6	4.38	4	5.32	6	5.11	5.5	5.28	6	5.17	6
YOUTH CLUBS	5.25	6	5.63	7	5.13	5.5	6.07	7	5.21	6	5.78	7	5.57	7	5.92	7	5.69	7
WORK EXPERIENCE	5.13	5	4.92	5	5.13	5.5	4.81	5	5.13	5	4.88	5	4.95	4	4.86	5	4.92	5
OTHER COLLEGE	6.88	7	4.77	4	6.38	7	3.67	4	6.71	7	4.40	4	5.11	5.5	4.10	4	4.77	4
OKLA STATE UNIV	1.25	1	1.93	1	1.75	1	1.71	1	1.42	1	1.86	1	1.82	1	1.72	1	1.79	1
STUDENT TEACHING	2.25	2	2.57	2	3.13	3	3.45	3	2.54	2	2.86	2	2.52	2	3.40	3	2.81	2
TEACHING	2.50	3	3.00	3	2.88	2	2.69	2	2.63	3	2.90	3	2.92	3	2.72	2	2.85	3

final rank of importance as follows: (1) Oklahoma State University - 1.79, (2) Student Teaching - 2.81, (3) Teaching - 2.85, (4) Other Colleges - 4.77, (5) Work Experience - 4.92, (6) High School - 5.17, and Youth Clubs - 5.69. It should be noted the difference is only .93 from the fourth to the seventh source. This small mean rank difference, which is similar in all groups, shows evidence that the last four sources in the final ranking are not a significant source for the development of the Professional Education competence.

Vocational Agriculture Occupational Training

According to the data summarized in Table XIII, the overall mean response of 2.41 implies the teachers' knowledge of the necessary skills to conduct a Vocational Agriculture Occupational Training class are below average. The graduates' overall mean response was the lowest on this competence of any of those included in the study. Non-Transfer students who got Oklahoma teaching positions reported the lowest degree of competence held (1.87), and the Out-of-State Transfer group's 2.57, which was just in the average category, was the highest mean response reported for this competence. A mean response of 2.49 from the Transfer group suggested they have a higher degree of the VAOT competence than the Non-Transfer group, which expressed a mean response of 2.00. However, both groups' mean responses were in the below average category. The Out-of-State teachers felt they barely possessed an average degree (2.52) of the competence, whereas the Oklahoma teachers' 2.36 mean response classified them as below average in the degree of competence held.

TABLE XIII

SUMMARY OF RESPONSES AS TO DEGREE OF COMPETENCE, FREQUENCY OF NEED, AND NEED OF MORE INSTRUCTION IN THE AREA OF VOCATIONAL AGRICULTURE OCCUPATIONAL TRAINING

Respondent Group	Number	Degree of Competence Held (Mean Response)	Frequency of Need of the Competence (Mean Response)	Need of More Instruction			
				Yes		No	
				Number	Percent	Number	Percent
Oklahoma--Non-Transfer	8	1.87	2.25	7	88	1	12
Oklahoma--Transfer	42	2.45	2.69	31	74	11	26
Out-of-State--Non-Transfer	4	2.25	1.75	3	75	1	25
Out-of-State--Transfer	21	2.57	2.62	15	71	6	29
All Non-Transfer	12	2.00	2.08	10	83	2	17
All Transfer	63	2.49	2.67	46	73	17	27
All Oklahoma	50	2.36	2.62	38	76	12	24
All Out-of-State	25	2.52	2.48	18	72	7	28
Overall Response	75	2.41	2.57	56	75	19	25

Comparison of the Oklahoma and Out-of-State teachers produced an F-value of .382 from the analysis of variance test. This indicated there was not a significant difference in the mean responses at the .05 level. Neither was there a significant difference in the mean response between the Non-Transfer and Transfer groups, as the test produced an F-value of 2.19. No interaction was indicated to be present, with a calculated F-value of .132.

Vocational Agriculture Occupational Training is occasionally needed by the teachers, as pointed out in Table XIII by the overall mean response of 2.57. The Out-of-State teachers' mean response of 2.48, as compared to the Oklahoma teachers' mean response of 2.62, indicated the Oklahoma teachers have more need of the competence even though the Out-of-State teachers reported they held a higher degree of competence in Vocational Agriculture Occupational Training. Expressed use of the competence ranged from occasionally (2.69) by the Oklahoma Transfer group to seldom (1.75) use by the Out-of-State Non-Transfer group. In analyzing the mean responses of the transfer and Non-Transfer groups, the data denoted a higher use of the VAOT training by the Transfer group than the Non-Transfer group, with respective mean responses of 2.67 and 2.08 reported.

A calculated F-value of .175 was derived from the mean responses in the analysis of variance test between the Oklahoma and Out-of-State teachers, which indicated there was no significant difference between the two groups. The test for difference between the Transfer and Non-Transfer groups provided an F-value of 1.84, which signified there was no significant difference in the mean responses. An F-value of .221 in the test for interaction was sufficient to prove no interaction was present.

According to the data presented in Table XIII, only 75 percent of the teachers felt they needed more instruction in the area of Vocational Agriculture Occupational Training. It should be remembered that the overall mean responses on this competence were lower than the others studied, both in degree of competence held and in amount used. The Oklahoma Non-Transfer group, whose mean response to the degree of competence held was the lowest, did indicate the highest percentage (88 percent) desiring additional training; and the Out-of-State Transfer group's mean response revealed the group who held the highest degree of competence recorded the lowest percentage (71 percent) wanting additional training. Breakdown of the Non-Transfer and Transfer teachers showed that 83 percent of the Non-Transfer group wanted more instruction, compared to only 73 percent of the Transfer group. There was little variation between the Oklahoma and Out-of-State teachers groups' 76 and 72 percent, respectively, responses, indicating more instruction in Vocational Agriculture Occupational Training was desired.

Data summarized in Table XIV shows the consensus of all groups that Oklahoma State University was the most important source for the development of their competence in Vocational Agriculture Occupational Training. The mean rank of all the groups designated Oklahoma State University, Student Teaching, and Teaching as the primary sources for developing the competence. The overall final ranks, values, and rank order were as follow: (1) Oklahoma State University - 2.05, (2) Teaching - 3.00, (3) Student Teaching - 3.46, (4) Work Experience - 4.44, (5) Other Colleges - 4.66, (6) High School - 5.09, and (7) Youth Clubs - 5.29. As discussed earlier, the graduates felt that the competencies were not developed at all sources, and these sources were assigned a value of 9,

TABLE XIV

RESPONDENT GROUP RANKING OF SELECTED SOURCES OF COMPETENCE DEVELOPMENT IN THE AREA OF VOCATIONAL AGRICULTURE OCCUPATIONAL TRAINING

	Oklahoma Non Transfer		Oklahoma Transfer		Out-of-State Non Transfer		Out-of-State Transfer		All Non Transfer		All Transfer		All Oklahoma		All Out-of-State		OVERALL	
SOURCES	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank
HIGH SCHOOL	4.75	5	5.07	6.5	4.75	5	5.33	6	4.75	5	5.16	6	5.02	6	5.24	6	5.09	6
YOUTH CLUBS	4.88	6	5.07	6.5	5.25	6	5.90	7	5.00	6	5.34	7	5.04	7	5.80	7	5.29	7
WORK EXPERIENCE	4.25	4	4.40	4	3.75	3	4.71	5	4.08	4	4.50	5	4.38	4	4.56	5	4.44	4
OTHER COLLEGE	6.13	7	4.67	5	5.75	7	3.86	4	6.00	7	4.40	4	4.90	5	4.16	4	4.66	5
OKLA STATE UNIV	2.13	1	2.28	1	1.00	1	1.76	1	1.75	1	2.11	1	2.26	1	1.64	1	2.05	1
STUDENT TEACHING	2.88	2	3.40	3	3.75	3	3.76	3	3.17	2	3.52	3	3.32	3	3.76	3	3.46	3
TEACHING	3.00	3	3.10	2	3.75	3	2.67	2	3.25	3	2.96	2	3.08	2	2.84	2	3.00	2

which directed the computer to average these sources. The last four sources in the overall final rank show strong evidence that a large portion of the graduates felt no competencies were developed there. This is evident by the close mean rank of these sources where fourth final rank had a mean rank of 4.44 and seventh final rank had a mean rank of 5.09, less than .57 difference. The Out-of-State Non-Transfer groups' mean rank shows this situation more clearly. Their mean rank of one for Oklahoma State University showed they all felt Oklahoma State University was the most important. Since they received all their college hours at Oklahoma State University, other colleges should have received a mean rank of 7. Their mean rank for other colleges was 5.75, which showed it was averaged with other sources where no Vocational Agriculture Occupational Training competence was developed.

Future Farmers of America Advisor

Examination of the data in Table XV revealed the graduates felt they had an above-average degree of competence to serve as the FFA Advisor, as verified by their overall mean response of 3.63. Through their mean responses the graduates indicated this was their second highest amount of competence held in the various areas studied. Oklahoma Non-Transfer graduates disclosed the highest mean response (3.87) for the degree of competence held as FFA Advisor, and the Out-of-State Transfer groups' mean response of 3.33 was the lowest. The Oklahoma teachers' group mean response of 3.74 indicates an above-average degree of competence commensurate with the 3.40 response for the Out-of-State group that is in the average category. The Transfer teachers' mean response of 3.59 was slightly lower than the Non-Transfers' 3.83, yet both remained in the above-average category.

TABLE XV

SUMMARY OF RESPONSES AS TO DEGREE OF COMPETENCE, FREQUENCY OF NEED, AND NEED OF MORE INSTRUCTION IN THE AREA OF FUTURE FARMERS OF AMERICA ADVISOR

Respondent Group	Number	Degree of Competence Held (Mean Response)	Frequency of Need of the Competence (Mean Response)	Need of More Instruction			
				Yes		No	
				Number	Percent	Number	Percent
Oklahoma--Non-Transfer	8	3.87	4.62	5	63	3	37
Oklahoma--Transfer	42	3.71	4.60	30	71	12	29
Out-of-State--Non-Transfer	4	3.75	4.75	3	75	1	25
Out-of-State--Transfer	21	3.33	4.67	13	62	8	38
All Non-Transfer	12	3.83	4.67	8	67	4	33
All Transfer	63	3.59	4.62	43	68	20	32
All Oklahoma	50	3.74	4.60	35	70	15	30
All Out-of-State	25	3.40	4.68	16	64	9	36
Overall Response	75	3.63	4.63	51	68	24	32

The difference between all responses collected relative to the degree of competence held to serve as FFA Advisor were subjected to an analysis of variance test to determine if there was a significant difference between the Oklahoma and Out-of-State teachers and also between the Transfer and Non-Transfer teacher groups. Although the mean response classified the Oklahoma and Out-of-State teachers in a different category, the derived F-value of 3.19 fell short of the necessary 3.98 F-value necessary to indicate a significant difference at the .05 level of confidence. No significant difference was indicated by the F-value of 1.01 between the Non-Transfer and Transfer groups. The test for interaction proved no interaction was present.

Teachers of vocational agriculture included in this study are constantly using their knowledge of FFA advisement, as pointed out by the overall mean response of 4.63 shown in Table XV. The Out-of-State Non-Transfer group's mean response of 4.75 was the highest, while the Oklahoma Transfer teachers' calculated mean response of 4.60 was the lowest. All the responding groups' mean responses were in the constant category. The Out-of-State teachers' mean response of 4.68 was an insignificant degree higher than the Oklahoma teachers' 4.60 mean response. The Non-Transfer teachers also reported an insubstantial higher mean response than the Transfer teachers with 4.67 and 4.60 being reported, respectively.

In the analysis of variance test for differences between the Oklahoma and Out-of-State teachers' mean responses, an F-value of .323 indicated there was no significant difference at the .05 level of confidence. A computed F-value of .069 also showed there was no difference between the Transfer and Non-Transfer groups in the degree in which they

used their knowledge of FFA advisement. No interaction was present, as an F-value of .019 signified.

Additional examination of the data presented in Table XV revealed only 68 percent of the teachers expressed a need for additional instruction in the competence. The Out-of-State Non-Transfer group's average response of 75 percent was the group indicating the most desire for more instruction, while their Out-of-State Transfer counterparts' average response of 62 percent was the group revealing the lowest desire for additional instruction. The expressed desire for additional instruction on the competence FFA Advisor was essentially the same for the Non-Transfer and Transfer teachers, as 68 percent of the Transfer and 67 percent of the Non-Transfer teachers wanted more instruction. Seventy percent of the Oklahoma teachers revealed a need for more instruction in the competence, compared to only 64 percent of the Out-of-State teachers.

In expressing their opinions about where they received the competence necessary to serve as advisor for the Future Farmers of America organization, the graduates as a group ranked the sources, as revealed in Table XVI, in the following order: (1) Teaching - 2.85, (2) High School - 3.40, (3) Oklahoma State University - 3.52, (4) Student Teaching - 3.78, (5) Youth Clubs - 4.33, (6) Work Experience - 4.63, and (7) Other Colleges - 5.51. It should be noted that the mean rank for Oklahoma State University in this competence was lower than any of the other competencies included in this study.

The Non-Transfer group's mean rank of 3.84 for Oklahoma State University was the lowest of the two different groups being compared in the study. Although the 3.84 was fifth in their final rank, it was only

TABLE XVI

RESPONDENT GROUP RANKING OF SELECTED SOURCES OF COMPETENCE DEVELOPMENT FOR THE ADVISOR OF THE FUTURE FARMERS OF AMERICA ORGANIZATION

	Oklahoma Non Transfer		Oklahoma Transfer		Out-of-State Non Transfer		Out-of-State Transfer		All Non Transfer		All Transfer		All Oklahoma		All Out-of-State		OVERALL	
SOURCES	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank
HIGH SCHOOL	3.00	3	3.42	2	1.50	1	3.86	3	2.50	1	3.57	3	3.35	2	3.48	3	3.40	2
YOUTH CLUBS	4.56	5	4.18	5	2.00	2	4.98	7	3.71	4	4.45	5	4.24	5	4.50	5	4.33	5
WORK EXPERIENCE	4.63	6	4.56	6	4.25	4.5	4.83	6	4.50	6	4.65	6	4.57	6	4.74	6	4.63	6
OTHER COLLEGE	6.94	7	5.49	7	7.00	7	4.71	5	6.96	7	5.23	7	5.72	7	5.08	7	5.51	7
OKLA STATE UNIV	3.88	4	3.60	3	3.75	3	3.19	2	3.84	5	3.46	2	3.64	4	3.28	2	3.52	3
STUDENT TEACHING	2.75	2	3.76	4	5.25	6	3.93	4	3.58	3	3.82	4	3.60	3	4.14	4	3.78	4
TEACHING	2.25	1	3.00	1	4.25	4.5	2.50	1	2.92	2	2.83	1	2.88	1	2.78	1	2.85	1

.38 lower than the Transfer group's second final rank (3.64). The Non-Transfer group indicated High School (2.50) was the most important source in the development of the competencies necessary to serve as FFA advisor in contrast to the Transfer group's signifying Teaching (2.83). Work Experience and Other Colleges received mean rankings that ranked them as sixth and seventh, respectively, in both comparison groups (Non-Transfer--Transfer, and Oklahoma--Out-of-State). This suggests that neither Work Experience nor Youth Clubs is an important part in developing the skills necessary to serve as an FFA advisor.

In analyzing their student teaching as a source of development of the competence, the Non-Transfer group and Oklahoma teachers ranked it third in the final rank with 3.58 and 3.60 respective mean ranks. Their comparison groups (Transfer and Out-of-State) ranked it fourth in the final rank with mean ranks of 3.82 and 4.14, respectively.

Young and/or Adult Farmer Advisor

In analyzing the data in Table XVII, one instantly notices the low overall mean response of 2.64, denoting an average competence in the area of Young and/or Adult Farmer advisement. Even though this area is an integral part of the vocational agriculture teacher's duties, through the mean responses the teachers in this study suggested the degree of competence held was next to their lowest. The only area where they held a lesser degree of competence was in Vocational Agriculture Occupational Training. Mean responses ranged from the Oklahoma Non-Transfer teachers' 2.75 to the 2.20 reported from the Oklahoma Transfer group. However, Oklahoma teachers as a group had a mean response of 2.64, which was identical to the Out-of-State teachers' mean response. The difference

TABLE XVII

SUMMARY OF RESPONSES AS TO DEGREE OF COMPETENCE, FREQUENCY OF NEED, AND NEED OF MORE INSTRUCTION IN THE AREA OF YOUNG AND/OR ADULT FARMER ADVISOR

Respondent Group	Number	Degree of Competence Held (Mean Response)	Frequency of Need of the Competence (Mean Response)	Need of More Instruction			
				Yes		No	
				Number	Percent	Number	Percent
Oklahoma--Non-Transfer	8	2.75	3.00	6	75	2	25
Oklahoma--Transfer	42	2.20	2.90	35	83	7	17
Out-of-State--Non-Transfer	4	2.50	3.00	4	100	0	0
Out-of-State--Transfer	21	2.67	3.14	15	71	6	29
All Non-Transfer	12	2.67	3.00	10	83	2	17
All Transfer	63	2.63	2.98	50	79	13	21
All Oklahoma	50	2.64	2.92	41	82	9	18
All Out-of-State	25	2.64	3.12	19	76	6	24
Overall Response	75	2.64	2.99	60	80	15	20

between the transfer groups was insignificant, although the Non-Transfers' 2.67 was slightly higher than the Transfers' 2.63.

In the test for difference between the Oklahoma and Out-of-State teachers, an F-value of .00 was derived, which was due to the identical mean responses of the two groups. The test between the Non-Transfer and Transfer teacher groups produced an F-value of .010, showing there was no significant difference between the groups' mean responses at the .05 level of confidence. The F-value of .198 symbolizes there was no significant interaction between the groups' responses.

As detailed in Table XVII, all the groups occasionally used their knowledge of Advisor to Young and/or Adult Farmers. The overall mean response is compared to the other overall mean responses to need of competence; it shows the only competence used less is Vocational Agriculture Occupational Training. In analyzing the mean responses from the groups, the 3.14 response from the Out-of-State Transfer teachers was the highest and the 2.90 from the Oklahoma Transfer teachers was the lowest. The mean responses in the Transfer groups' indicated there is little difference in use, as the Non-Transfer teachers' response was 3.00 with 2.98 for Transfer teachers. Young and/or Adult advisement is used slightly more in other states, as the mean responses of 3.12 for Out-of-State teachers and 2.92 from the Oklahoma teachers pointed out.

Results of the test for the variance of difference between the Oklahoma and Out-of-State teachers yielded an F-value of .348, which signified there was no significant difference at the .05 level of confidence. Also, there was no significant difference, indicated by an F-value of .001 in the test for difference between the Non-Transfer and Transfer groups. An F-value of .006 disclosed there was no interaction

present in the groups' responses.

Mean responses regarding the groups' desire for additional instruction in the competence were quite varied, as Table XVII revealed a range from 100 percent of the Out-of-State Non-Transfer teachers desiring additional training to only 71 percent of the Out-of-State Transfer teachers. The overall mean response indicated 80 percent of the teachers wanted additional instruction, and when compared to the overall mean responses in other competencies, it was the second highest percentage. Comparison of the Non-Transfer and Transfer groups revealed that 83 percent of the Non-Transfer group wanted more training while only 79 percent of the Transfer group indicated the same need. The mean responses also showed the Non-Transfer group reporting they held a higher degree of competence and used it more often than the Transfer group. Eighty-two percent of the Oklahoma teachers wanted more instruction on advising Young and/or Adult Farmers, compared to only 76 percent of the Out-of-State teachers. The Oklahoma teachers' mean response to the use of the competence was lower than the Out-of-State teachers'.

In describing the sources where the development of the competence necessary to serve as the advisor of a Young and/or Adult Farmer organization occurred, the data summarized in Table XVIII shows the graduates felt that Oklahoma State University, Teaching, and Student Teaching were again the primary sources. The overall final rankings and rank order of sources were as follow: (1) OSU - 2.44, (2) Teaching - 2.90, (3) Student Teaching - 3.11, (4) Work Experience - 4.37, (5) High School - 4.99, Other Colleges - 5.08, and (7) Youth Clubs - 5.12. In examining the difference between the first three sources, there is a .67 of a point difference between them. There was 1.26 difference between Student

TABLE XVIII

RESPONDENT GROUP RANKING OF SELECTED SOURCES OF COMPETENCE DEVELOPMENT FOR THE ADVISOR OF YOUNG AND/OR ADULT FARMER ORGANIZATIONS

SOURCES	Oklahoma Non Transfer		Oklahoma Transfer		Out-of-State Non Transfer		Out-of-State Transfer		All Non Transfer		All Transfer		All Oklahoma		All Out-of-State		OVERALL	
	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank	Mean Rank	Final Rank
HIGH SCHOOL	5.00	6	4.99	7	4.88	5	5.02	6	4.96	5	5.00	6	4.99	6	5.00	5.5	4.99	5
YOUTH CLUBS	4.75	5	4.94	6	5.66	6	5.50	7	5.05	6	5.13	7	4.91	5	5.53	7	5.12	7
WORK EXPERIENCE	4.25	4	4.18	4	4.13	4	4.83	5	4.21	4	4.40	4	4.19	4	4.72	4	4.37	4
OTHER COLLEGE	6.13	7	4.92	5	6.38	7	4.74	4	6.21	7	4.86	5	5.11	7	5.00	5.5	5.08	6
OKLA STATE UNIV	2.63	2	2.62	1	1.00	1	2.29	2	2.09	1	2.51	1	2.62	1	2.08	1	2.44	1
STUDENT TEACHING	3.00	3	3.02	2	2.88	2	3.36	3	2.96	3	3.13	3	3.02	2	3.28	3	3.11	3
TEACHING	2.25	1	3.33	3	3.13	3	2.26	1	2.54	2	2.97	2	3.16	3	2.40	2	2.90	2

Teaching's overall mean rank and that of Work Experience, which were third and fourth in overall final ranking. The difference between the overall mean ranks of Work Experience and Youth Clubs, which were fourth and seventh, respectively, in the overall final ranking, is only 1.74.

All groups' mean ranks indicate the agreement among the groups on their selection of Oklahoma State University, Student Teaching, and Teaching as the three important sources of developing the competence. The Oklahoma and Out-of-State teacher groups reversed the final rank order of their second and third sources. The Oklahoma teachers' final rank for the three sources was (1) Oklahoma State University - 2.62, (2) Student Teaching - 3.02, and (3) Teaching - 3.16, compared to the Out-of-State groups' final rank of (1) Oklahoma State University - 2.08, (2) Teaching - 2.40, and (3) Student Teaching - 3.28.

Statements Concerning Professional Development

Eight statements were included in this study for the purpose of determining whether the graduates perceived they had sufficient opportunity for personal and professional development during their preservice training in the Agricultural Education Department at Oklahoma State University. Findings related to these statements are reported in this section.

Participants in the study were asked to express their opinions concerning the availability of the Agricultural Education staff for advisement and counseling. The overall mean response to this statement, as reported in Table XIX, was 4.28, which indicated the availability of the Agricultural Education staff for student advisement and counseling

was "Good." The range of group mean responses was from 4.00 for both Out-of-State groups to 4.63 for Oklahoma Non-Transfer students. When divided into groups, it was found the Non-Transfer teachers felt the staff was more available for advisement and counseling than the Transfer teachers, as indicated by the 4.42 and 4.25 mean responses, respectively. Also, the mean response of the Oklahoma teachers (4.42) indicated they felt the advisement and counseling of the Agricultural Education staff was better than did the Out-of-State teachers (4.00).

TABLE XIX

SUMMARY OF RESPONSES REGARDING THE AVAILABILITY OF THE AGRICULTURAL EDUCATION STAFF FOR ADVISEMENT AND COUNSELING

Respondent Groups	Number	Mean Response
Oklahoma--Non-Transfer	8	4.63
Oklahoma--Transfer	42	4.38
Out-of-State--Non-Transfer	4	4.00
Out-of-State--Transfer	21	4.00
All Non-Transfer	12	4.42
All Transfer	63	4.25
All Oklahoma	50	4.42
All Out-of-State	25	4.00
Overall Response	75	4.28

The analysis of variance of difference between the Oklahoma and Out-of-State teachers produced an F-value of 3.61, which was only

significant at the .06 level of confidence. In the test for difference in mean responses between the Non-Transfer and Transfer students, an F-value of .328 was calculated, which was not significant. The test for interaction yielded an F-value of .164, indicating there was no interaction present to a significant degree.

According to the data presented in Table XX, the 75 graduates had a mean response of "Good" (3.89) regarding how oriented the Agricultural Education staff was toward student needs. The mean responses for all groups was in the "Good" category. The mean responses ranged from 4.25 for the Oklahoma Non-Transfer group to 3.67 for the Out-of-State Transfer group. Non-Transfer teachers felt the Agricultural Education staff was more oriented towards student needs than did the Transfer teachers, as pointed out by the respective mean responses of 4.08 and 3.86. It was also pointed out in the data that the graduates who obtained their first teaching position in Oklahoma thought the Agricultural Education staff was more oriented towards student needs than those who went out of state, as the mean responses of 4.00 from the Oklahoma group and 3.68 from the Out-of-State group pointed out.

The test for difference between the mean responses of the Oklahoma and Out-of-State teachers produced an F-value of 1.81, which pointed up some difference but only at the .18 level of confidence. The analysis of variance between the Non-Transfer and Transfer groups' mean responses proved there was no significant difference between these two groups' mean responses. It was also found there was no interaction present at a significant level.

TABLE XX

SUMMARY OF RESPONSES REGARDING THE DEGREE TO WHICH THE AGRICULTURAL EDUCATION STAFF IS ORIENTED TOWARDS STUDENT NEEDS

Respondent Groups	Number	Mean Response
Oklahoma--Non-Transfer	8	4.25
Oklahoma--Transfer	42	3.95
Out-of-State--Non-Transfer	4	3.75
Out-of-State--Transfer	21	3.67
All Non-Transfer	12	4.08
All Transfer	63	3.86
All Oklahoma	50	4.00
All Out-of-State	25	3.68
Overall Response	75	3.89

Examination of the data summarized in Table XXI revealed the graduates, through their overall mean response of 2.69, felt their preparation on how to adequately set up and work with an advisory committee was "Satisfactory." Of the eight statements studied, this was the lowest mean response recorded by the graduates. When divided into groups according to where they obtained their first teaching position, the Oklahoma group recorded a mean response of 3.06, compared to the Out-of-State group's 1.96. This shows the Oklahoma teachers' "Satisfactory" response was one category higher than the Out-of-State teachers' "Fair" response. In analyzing the graduates in terms of whether or not they were transfer students, it was found that the Non-Transfers' 3.00 mean response was slightly higher than the Transfers'

2.64. Further analysis of Table XXI shows the mean responses from Oklahoma Non-Transfer (3.50) and Oklahoma Transfer (2.98) teachers indicated these groups of teachers felt they were better prepared to handle the advisory committees than both the Out-of-State Non-Transfer (2.00) and Out-of-State Transfer (1.95) teacher groups.

TABLE XXI

SUMMARY OF RESPONSES REGARDING THE DEGREE OF PREPARATION TO ADEQUATELY SET UP AND WORK WITH AN ADVISORY COMMITTEE

Respondent Groups	Number	Mean Response
Oklahoma--Non-Transfer	8	3.50
Oklahoma--Transfer	42	2.98
Out-of-State--Non-Transfer	4	2.00
Out-of-State--Transfer	21	1.95
All Non-Transfer	12	3.00
All Transfer	63	2.64
All Oklahoma	50	3.06
All Out-of-State	25	1.96
Overall Response	75	2.69

In analyzing the differences in the mean responses between the Oklahoma and Out-of-State groups, the analysis of variance test showed a very significant degree of difference in their feelings about their preparation to set up and work with advisory committees, with a 15.24 F-value. This F-value was significant at the .0004 level. The mean

responses of the Transfer and Non-Transfer teachers were also subjected to the analysis of variance test, and an F-value of 1.02 was calculated. This value was not significant at the .05 level of confidence. The test for interaction showed there was no significant interaction present.

According to the 3.31 overall mean response presented in Table XXII, the teachers had the opinion they received "Satisfactory" instruction on how to effectively work with their school administration and the State Department's supervisory staff. The Oklahoma Transfer group's mean response of 3.50 indicated they received the highest degree of preparation, while a 2.50 mean response from the Out-of-State Non-Transfers marked the lowest perceived degree of preparation. Oklahoma teachers as a group signified by their 3.44 mean response that their preparation was slightly better than the Out-of-State group (3.04). Teachers who received all their college work at Oklahoma State University suggested their preparation to effectively work with the school administration and the state department supervisory staff was "Satisfactory," as did the teachers who transferred college hours to Oklahoma State University. However, the Non-Transfer teachers' 2.92 mean response was lower than the 3.38 mean response from the Transfers.

Results of the test for variance of difference between the Oklahoma and Out-of-State teacher groups yielded an F-value of 2.23, which signified there was some difference; however, it could only be significant at the .14 level of confidence. The mean responses between the Non-Transfer and Transfer groups showed some difference, but the F-value of 1.81 in the analysis of variance test proved it was not significant at the .05 level. The test for interaction denoted there was not a significant degree of interaction present, with a .134 F-value.

TABLE XXII

SUMMARY OF RESPONSES REGARDING THE DEGREE OF PREPARATION TO EFFECTIVELY WORK WITH THE SCHOOL ADMINISTRATION AND STATE DEPARTMENT

Respondent Groups	Number	Mean Response
Oklahoma--Non-Transfer	8	3.13
Oklahoma--Transfer	42	3.50
Out-of-State--Non-Transfer	4	2.50
Out-of-State--Transfer	21	3.14
All Non-Transfer	12	2.92
All Transfer	63	3.38
All Oklahoma	50	3.44
All Out-of-State	25	3.04
Overall Response	75	3.31

The tabulated mean responses in Table XXIII concerning the degree to which the graduates felt they were prepared to plan and maintain their physical facilities indicated the preparation was "Satisfactory." It is extremely interesting to note that the mean responses in every group were identical to the mean responses in Table XXII relative to the ability to work effectively with the school administration and the state department supervisory staff. The overall mean response of 3.31 was in the "Satisfactory" category. Oklahoma teachers also felt they were better prepared to plan and maintain physical facilities than did the Out-of-State teachers, as the respective mean responses of 3.44 and 3.04 pointed out. The Transfer group's 3.38 mean response was again higher than the 2.92 of the Non-Transfer group.

TABLE XXIII

SUMMARY OF RESPONSES REGARDING THE DEGREE OF PREPARATION TO PLAN AND MAINTAIN THE PHYSICAL FACILITIES

Respondent Groups	Number	Mean Response
Oklahoma--Non-Transfer	8	3.13
Oklahoma--Transfer	42	3.50
Out-of-State--Non-Transfer	4	2.50
Out-of-State--Transfer	21	3.14
All Non-Transfer	12	2.92
All Transfer	63	3.38
All Oklahoma	50	3.44
All Out-of-State	25	3.04
Overall Response	75	3.31

The test for difference in mean responses proved there was no significant difference at the .05 level of confidence between the Oklahoma and Out-of-State groups or between the Non-Transfer and Transfer groups; neither was any interaction among the groups present at a significant level.

Inspection of the data in Table XXIV shows the overall mean response was 3.05, which designated the graduates' preparation to order and maintain equipment was "Satisfactory." The responses were quite varied in the groups, as the 3.29 mean response of the Oklahoma Transfer group was the highest and the Out-of-State Non-Transfer group's 2.00 was the lowest. When divided into groups, both the Oklahoma and Out-of-State teachers felt their preparation was "Satisfactory"; however, the Oklahoma teachers' mean response of 3.28 was considerably higher than

the Out-of-State teachers' 2.60. The Transfer and Non-Transfer groups' mean responses were also in the "Satisfactory" category, with 3.10 and 2.83 respective responses.

TABLE XXIV

SUMMARY OF RESPONSES REGARDING THE DEGREE OF PREPARATION TO ORDER AND MAINTAIN EQUIPMENT

Respondent Groups	Number	Mean Response
Oklahoma--Non-Transfer	8	3.25
Oklahoma--Transfer	42	3.29
Out-of-State--Non-Transfer	4	2.00
Out-of-State--Transfer	21	2.71
All Non-Transfer	12	2.83
All Transfer	63	3.10
All Oklahoma	50	3.28
All Out-of-State	25	2.60
Overall Response	75	3.05

Although the mean responses of the Oklahoma and Out-of-State teachers groups were in the same category, there was a .68 difference in the two groups' responses. The analysis of variance test between the groups' mean responses produced an F-value of 5.14, which proved there was a significant difference which was produced by something other than chance 97.52 percent of the time. The analysis of variance test between the Non-Transfer and Transfer groups provided an F-value of

.462, which proved there was no significant difference between the groups. There was no interaction present, as a .689 F-value testified.

The graduates implied their preparation to effectively guide and counsel students in job placement was "Satisfactory" by their overall mean response of 3.09, as shown in Table XXV. Oklahoma Transfer teachers as a group responded at the highest level (3.19), while the Out-of-State Non-Transfers' 2.25 was the lowest level of response. When comparing the Oklahoma teachers and Out-of-State teachers' mean responses, the Oklahoma group's 3.16 was slightly higher than the 2.96 of the Out-of-State group. The Transfer group's 3.16 mean response suggested they felt better prepared to guide and counsel their students in job placement than did the Non-Transfer group (2.75).

TABLE XXV

SUMMARY OF RESPONSES REGARDING PREPARATION TO EFFECTIVELY GUIDE AND COUNSEL STUDENTS IN JOB PLACEMENT

Respondent Groups	Number	Mean Response
Oklahoma--Non-Transfer	8	3.00
Oklahoma--Transfer	42	3.19
Out-of-State--Non-Transfer	4	2.25
Out-of-State--Transfer	21	3.10
All Non-Transfer	12	2.75
All Transfer	63	3.16
All Oklahoma	50	3.16
All Out-of-State	25	2.96
Overall Response	75	3.09

Even though the Transfer teachers indicated they were better prepared to guide and counsel their students in job placement than the Non-Transfer teachers, the analysis of variance test between the two groups' mean responses proved there was no significant difference in their preparation at the .05 level of confidence, with an F-value of 1.44. An F-value of .57 between the mean responses of the Oklahoma and Out-of-State groups showed there was no significant difference in their preparation. No interaction was present, as an F-value of .82 testified.

The participants in the study were asked how much help they received from the Agricultural Education Department in securing a job. The overall mean response of 3.72, revealed in Table XXVI, showed the graduates classified their help in this endeavor as "Good." The responses ranged from "Excellent" (4.50 for the Oklahoma Non-Transfer group) to the Out-of-State Non-Transfers' "Satisfactory" (3.25) response. When divided into Transfer and Non-Transfer groups, the Non-Transfer teachers' mean response of 4.08 was higher than the Transfers' 3.66 mean response. The Oklahoma teachers were more pleased with the help they received from the Agricultural Education Department in securing a job that were the Out-of-State teachers, as was evident by the 3.78 and 3.60 respective mean responses.

In assessing the difference in mean responses, the analysis of variance test between the Oklahoma and Out-of-State groups produced an F-value of .035, which showed there was no significant difference. The mean responses of the Transfer and Non-Transfer teachers were also subjected to the analysis of variance test, and an F-value of 1.21 was calculated. This value was not significant at the .05 level of confidence, although some difference was present. There was some interaction

present between the difference in mean responses of the two groups, as an F-value of 2.32 indicated; however, it was not present at the .05 level of confidence.

TABLE XXVI

SUMMARY OF RESPONSES REGARDING HELP RECEIVED FROM THE AGRICULTURAL EDUCATION DEPARTMENT IN SECURING JOB PLACEMENT

Respondent Groups	Number	Mean Response
Oklahoma--Non-Transfer	8	4.50
Oklahoma--Transfer	42	3.64
Out-of-State--Non-Transfer	4	3.25
Out-of-State--Transfer	21	3.67
All Non-Transfer	12	4.08
All Transfer	63	3.66
All Oklahoma	50	3.78
All Out-of-State	25	3.60
Overall Response	75	3.72

Selected Comments From Graduates Concerning the Program

The open-ended item on the questionnaire intended to invoke additional responses of items not covered. In general, the graduates handled this by writing short notes about the program in a short letter. There were several responses; however, the basic idea of these responses

are covered in the following selected comments. They were as follow:

> I hope this study you are doing helps to bring some changes in the curriculum at OSU. After one year of teaching I realized that I needed many more courses in the areas' that I avoided because I didn't like the subject or teacher. For example, in Ag. Mech., I took mostly welding and didn't take anything like Electricity and Small Gas Engines.
>
> I would like to see these types of subjects required. Best of luck at OSU.

and

> I am really pleased to know you are doing research in this area as I feel it is important and very much needed. The primary things I feel that I could be using now, and did not receive adequate training in while at OSU I could not bring out in the questionnaire. I feel more training is needed in the area of showing and fitting livestock, and also a better background in Ag. Mechanics; something more than arc and gas welding. I don't believe I could teach competently in these areas if I had to rely on what the curriculum at OSU offers.
>
> As I was told when in school, an Ag Teacher is expected to be an expert in all fields pertaining to Agriculture and a lot of the time I feel that I don't measure up. From all types of economic, livestock, plant, soil and engineering problems. I feel that my greatest weakness is in scheduling everything that has to be done, and forgetting part of it or never getting to it. I also wonder many times if I expect too much from the kids.
>
> One thing I don't think you (Ag Ed Dept) made real clear was the amount of hours an Ag. Teacher puts in, in a weeks time. I figure I put in at least 70 hours per week.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this chapter is to present a summary review of the study problem and its setting, the design and conduct of the study, and the major findings. Also presented are conclusions and recommendations which were based upon analysis and summarization of data collected and upon observations and impressions resulting from the design and conduct of the study.

Summary of the Study

Purpose of the Study

The primary purpose of this study was to determine how the recent graduates of Agricultural Education program at Oklahoma State University who have actively engaged in the profession assessed their pre-service training and if they utilized the areas of competencies stressed.

Objectives of the Study

The following objectives were formulated to accomplish the major purpose of the study:

1. To determine the degree of competence graduates felt they possessed in the areas of:

    a. Agricultural Economics
    b. Agronomy and/or Plant Sciences
    c. Animal Sciences

d. Mechanized Agriculture
e. Sciences Related to Agriculture
f. Professional Education
g. Vocational Agriculture Occupational Training (VAOT)
h. Future Farmers of America (FFA) Advisor
i. Young and/or Adult Farmer Advisor

2. To determine where the graduates felt these competencies were developed.
3. To determine the extent to which competencies taught were needed or used by teachers in their profession after they entered the world of work.
4. To determine if the graduates felt they needed more instruction in these competencies after their experience in the profession.
5. To determine if those graduates who went out of state to teach perceived their pre-service training differently than the graduates who stayed in Oklahoma to teach.
6. To determine if graduates who transferred from another college perceived their pre-service training differently than students who received all their training at Oklahoma State University.
7. To determine if the graduates felt they had a sufficient opportunity for personal and professional development within the program.

Rationale for the Study

There has been more attention given to their education and more criticism leveled at American teachers recently than at any time in the past. With accountability arriving on the scene, teacher educators must have some indication of the success of their program.

The teacher education staff in the Agricultural Education Department at Oklahoma State University has implemented some new ideas and

approaches to the pre-service program over the past few years and wanted feedback from the people who were putting these ideas into practice. It was felt the core curriculums used by in-service Vocational Agriculture teachers would be a good source of help in determining if these new ideas and approaches were useful to the graduates after they entered the profession. Therefore, the basic ideas covered in the questionnaire came from the core curriculum.

It seemed reasonable that the graduates who have entered the profession they were trained for are the best qualified to assess their pre-service program.

Due to the large number of transfer students enrolled in the Agricultural Education Department at Oklahoma State University, it was felt that it would be beneficial to determine if they perceived their pre-service training differently from the non-transfer students. It was also felt that due to the large number of graduates who go out of state to teach that a comparison should be made of their perceived opinions of the pre-service training program with those who remained in Oklahoma to teach.

Design and Conduct of the Study

Following a review of research and literature related to the problem, the major tasks involved in the design and conduct of the study were (1) selecting the study population, (2) developing an instrument for data collection, (3) collecting data, and (4) analyzing the findings.

The study population consisted of 83 certified graduates of the Agricultural Education Department at Oklahoma State University. In order to obtain current data on the preparation program, this sample

consisted of only the 1971 and 1972 graduates who entered the Vocational Agriculture teaching profession.

Findings of the Study

This study was concerned with determining how the graduates perceived their pre-service training in the Agricultural Education Department at Oklahoma State University. An attempt was made to learn if the graduates who went out of state to teach perceived their preparation differently from those who stayed in Oklahoma to teach. Also, an attempt was made to see if the perceived values of students who received all their college work at Oklahoma State University differed from those of transfer students. Seven specific research objectives were developed to guide the conduct of the study.

The study was conducted on the 1971 and 1972 graduates of the Agricultural Education Department at Oklahoma State University who entered the Vocational Agriculture teaching profession. The questionnaire was sent to 83 graduates. Seventy-nine (95 percent) of the graduates returned their completed questionnaires; one refused to participate from the beginning; one did not bother to return his; and two of the out-of-state teachers' addresses were never confirmed, even after repeated attempts. Four of the returned questionnaires were not calculated because of statistical reasons.

A summary of the returns indicated that 67 (85 percent) of the graduates who entered the teaching profession were transfer students. Also, there was a total of 53 entering the profession in Oklahoma and 26 entering the profession in ten different states other than Oklahoma.

The non-transfer and transfer groups both had 67 percent staying in Oklahoma and 33 percent entering the profession in other states.

The research findings in summary form are presented for each specific objective as follows.

1. Degree of Competence Held. One specific research objective of the study was concerned with the degree of competence the graduates felt they possessed in nine selected teaching areas. As data presented in Table XXVII verifies, the overall mean responses of 3.93 for Animal Sciences and 3.63 for FFA Advisement were the highest responses, indicating that for both of these areas the graduates felt they had above-average degrees of competence. Also, it is indicated that the overall mean response of 2.41, which was in the below-average category, for the VAOT area was the lowest, followed by the 2.64 response for the area of Young and/or Adult Farmer Advisor. This was just in the average category. For all the other teaching areas, the graduates' overall mean responses were in the high side of the average category as to the degree of competence they felt they had.

2. Sources of Competence Development. Research objective number two was to determine where graduates felt their competence was developed in the teaching areas. Table XXVIII was developed to summarize responses received from graduates in this regard. It was revealed that Oklahoma State University was ranked as the most important source of competence by the graduates for all the teaching areas except FFA Advisement. Youth clubs ranked seventh for all the areas except FFA Advisement, which signifies this was the least important source. There was no consistency among the rest of the rankings. However, it should

TABLE XXVII

SUMMARY OF MEAN RESPONSES CONCERNING THE DEGREE OF COMPETENCE HELD IN THE NINE TEACHING AREAS AS PERCEIVED BY GRADUATES

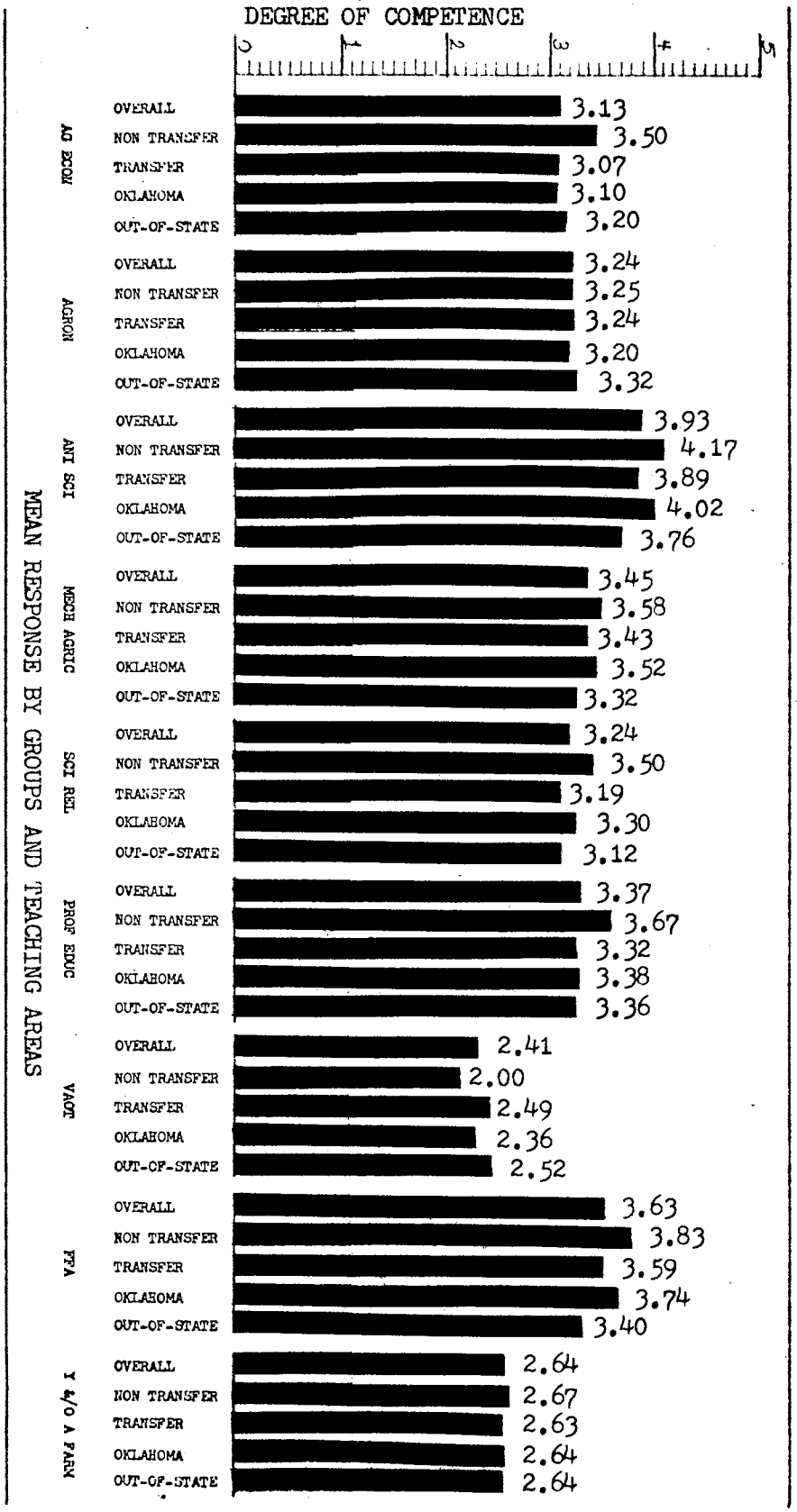


TABLE XXVIII

OVERALL SUMMARY OF THE RANK ORDER OF THE SOURCES WHERE COMPETENCIES IN THE NINE TEACHING AREAS WERE DEVELOPED

Teaching Areas	Final Rank of Sources by All Respondents						
	HS	YC	WE	OC	OSU	ST	T
Agricultural Economics	6	7	3	4	1	5	2
Agronomy and/or Plant Sciences	2	7	4	3	1	6	5
Animal Sciences	3	7	2	4	1	6	5
Mechanized Agriculture	3	7	2	6	1	5	4
Sciences Related to Agriculture	4	7	2	5	1	6	3
Professional Education	6	7	5	4	1	2	3
Vocational Agriculture Occupational Training	6	7	4	5	1	3	2
Future Farmers of America Advisor	2	5	6	7	3	4	1
Young and/or Adult Farmers Advisor	5	7	4	6	1	3	2

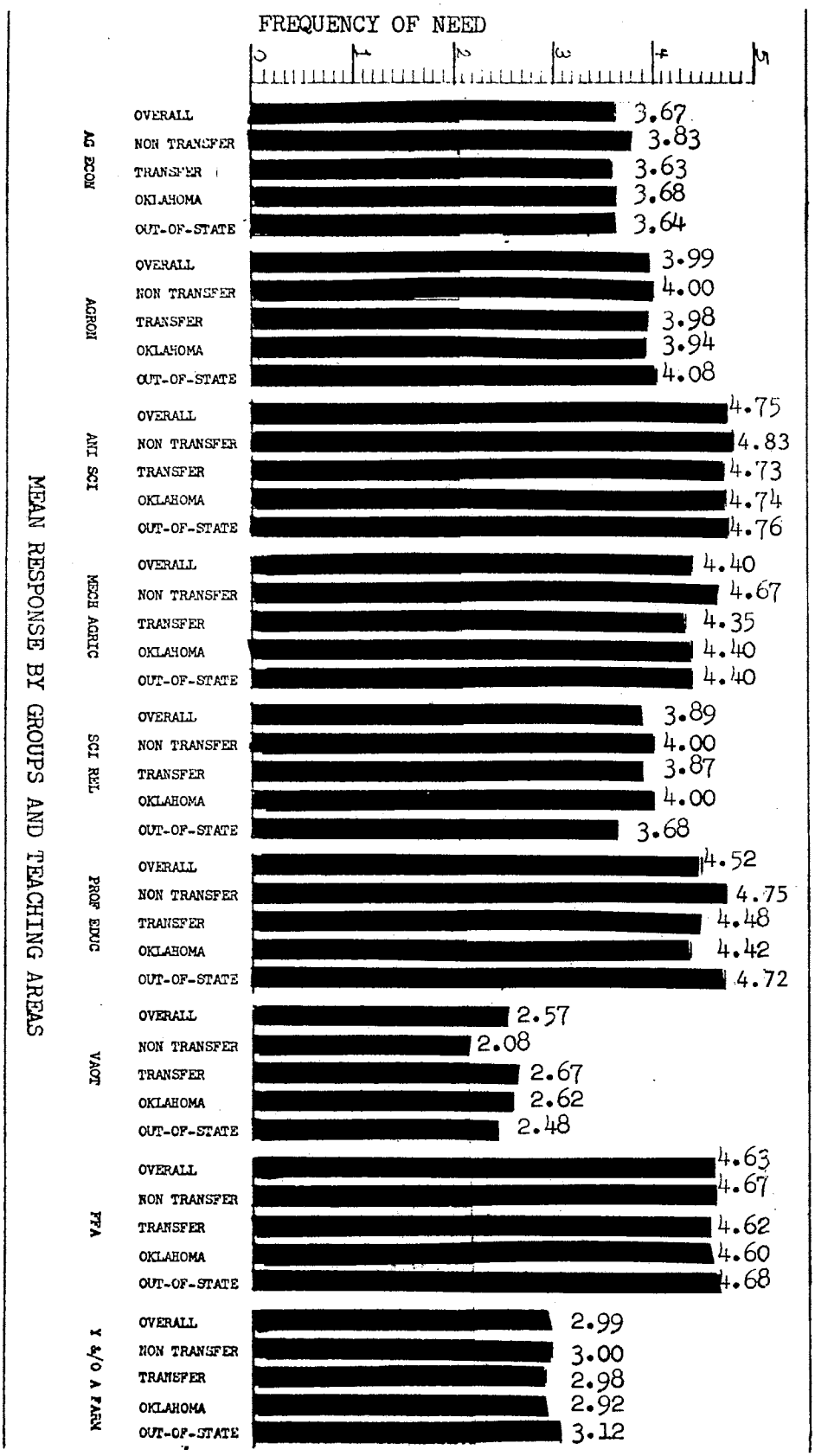
be pointed out that Other Colleges did not receive above a third place overall rank even though 85 percent of the respondents were transfer students.

3. Need or Use of Competence. The primary concern of the third research objective was to determine how often the graduates needed or used their competence in the nine teaching areas included in the study. The overall summary of the data presented in Table XXIX revealed that the mean responses for the three areas--Animal Sciences, 4.75; FFA Advisor, 4.63; and Professional Education, 4.52--showed they were used constantly by the graduates. Agricultural Economics, Agronomy, Mechanized Agriculture, and Science-Related competencies were all used "frequently" as the overall mean responses indicated. It was found through the overall mean responses that VAOT (2.57) and Young and/or Adult Farmer Advisement (2.99) were the least used competencies of those studied. It should be remembered that these two areas were also the ones where the graduates indicated they had the least amount of competence.

4. Desire for Additional Instruction. Research objective number four was designed to determine if the graduates felt they needed more instruction in the teaching areas. The graduates' responses as summarized in Table XXX indicated that overall more than 50 percent wanted more instruction in all of the teaching areas studied. More graduates (83 percent) wanted additional instruction in Mechanized Agriculture than any other teaching area, followed by 80 percent of the total group wanting more instruction in Young and/or Adult Farmer Advisement. It should be noted that the teaching area of Young and/or

TABLE XXIX

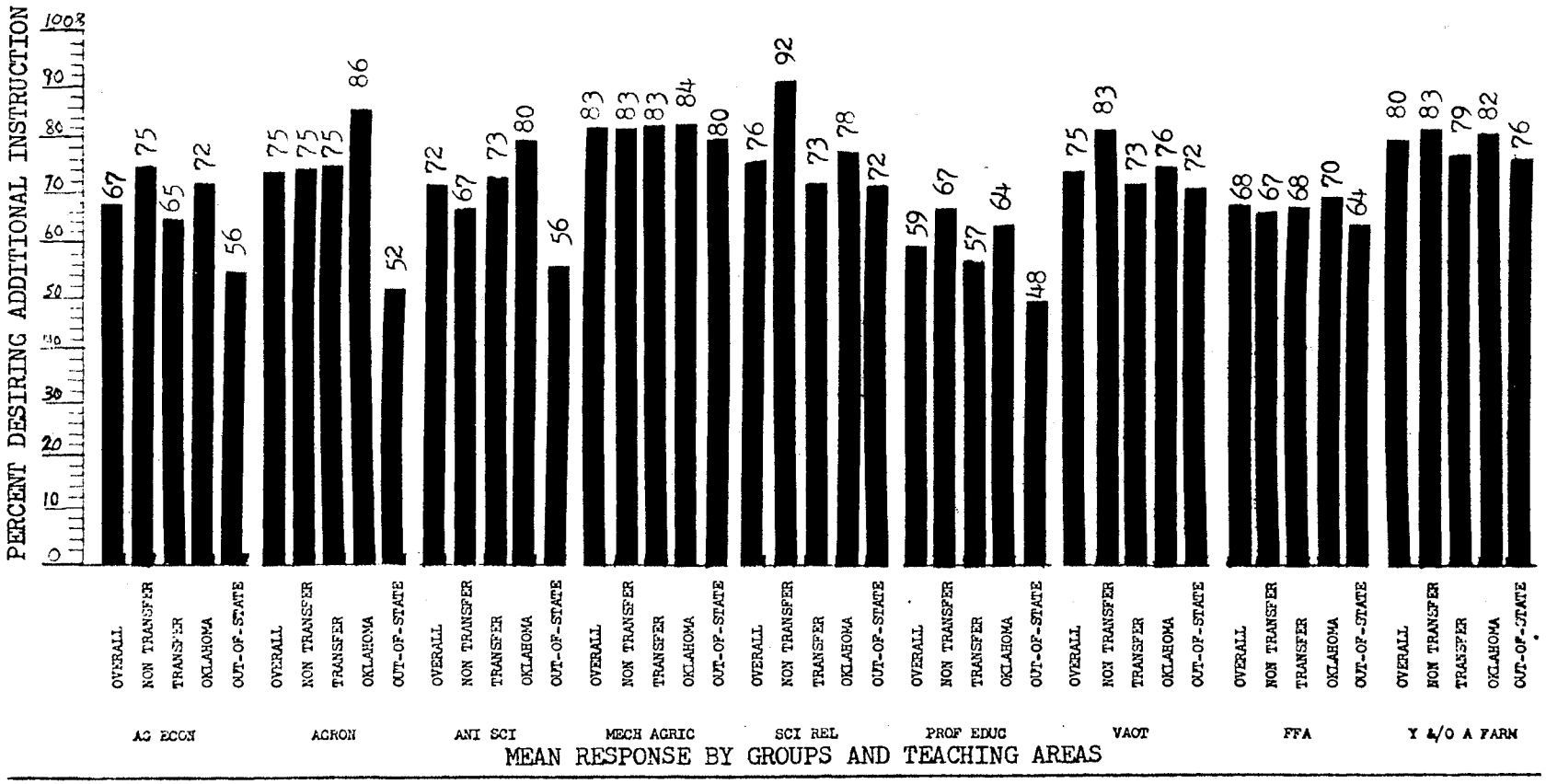
SUMMARY OF MEAN RESPONSES CONCERNING THE FREQUENCY OF NEED FOR THE NINE TEACHING AREAS AS PERCEIVED BY GRADUATES



MEAN RESPONSE BY GROUPS AND TEACHING AREAS

TABLE XXX

SUMMARY OF RESPONSES REGARDING THE NEED FOR MORE INSTRUCTION IN THE NINE TEACHING AREAS AS PERCEIVED BY GRADUATES



Adult Farmer Advisement had the next to lowest overall mean response both in degree of competence held and use of the competence. Fewer graduates wanted additional instruction in the area of Professional Education, as only 59 percent indicated a desire for more training. Agricultural Economics and FFA Advisement, with 67 percent and 68 percent of the teachers, respectively, were the two areas where students' overall mean responses indicated the least desire for additional training. For all the other areas, more than 70 percent of the respondents wanted more instruction.

5. Opportunity for Personal and Professional Development.

Research objective number seven was to determine if the graduates felt they had sufficient opportunity for personal and professional development in their contacts with the Agricultural Education Department while students at Oklahoma State University. The data presented in Table XXXI provide a summary of the respondents' mean responses. The statements included for study were:

a. The availability of the Agricultural Education Staff for Advisement and Counseling.

b. The degree to which the Agricultural Education Staff is oriented towards student needs.

c. The degree to which you were prepared to adequately set up and work with an advisory committee.

d. The degree to which you were prepared to effectively work with the school administration and State Supervisory Staff.

e. The degree to which you were prepared to plan and maintain the physical facilities.

f. The degree to which you were prepared to order and maintain equipment.

g. Your preparation to effectively guide and counsel students in job placement.

TABLE XXXI

SUMMARY OF RESPONSES TO THE EIGHT STATEMENTS CONCERNING THE OPPORTUNITY FOR PERSONAL AND PROFESSIONAL DEVELOPMENT

Statements	All Non-Transfer	All Transfer	All Oklahoma	All Out-of-State	Overall
1	4.42	4.25	4.42	4.00	4.28
2	4.08	3.86	4.00	3.68	3.89
3	3.00	2.64	3.06	1.96	2.69
4	2.92	3.38	3.44	3.04	3.31
5	2.92	3.38	3.44	3.04	3.31
6	2.83	3.10	3.28	2.60	3.05
7	2.75	3.16	3.16	2.96	3.09
8	4.08	3.66	3.78	3.60	3.72

h. Help received from Agricultural Education Staff in securing job placement.

For all eight statements the mean responses were in either the "Satisfactory" category or higher. Statements concerning the Agricultural Education staff in their advisement and counseling, orientation toward student needs, and help in securing job placement--with 4.28, 3.89, and 3.72 mean responses, respectively--received the highest ratings by graduates. The lowest overall mean response was the 2.69 for the statement dealing with the degree of preparation the graduates received to adequately set up and work with an advisory committee.

6. Comparison of Out-of-State and Oklahoma Teachers' Perceived Values of Their Pre-Service Training. To determine if the graduates who went out of state to teach perceived their pre-service preparation differently than the graduates who stayed in Oklahoma was the purpose of the fifth research objective. The mean response pertaining to the degree of competence held was previously mentioned in Table XXVII. The table also revealed the difference in mean responses between Oklahoma and Out-of-State teachers was largest in Animal Sciences and FFA Advisor areas. The F-values computed from the analysis of variance test of these differences were summarized in Table XXXII. The F-values established that there were no significant differences in the degree of competence held in any of the teaching areas at the .05 level of confidence between the graduates who went out of state to teach and those who stayed in Oklahoma, although the F-values of 3.28 for Animal Sciences and 3.19 in FFA Advisement did approach the 3.98 necessary to indicate significance.

TABLE XXXII

SUMMARY OF F-VALUES DERIVED FROM THE ANALYSIS OF VARIANCE TEST BETWEEN OKLAHOMA AND OUT-OF-STATE TEACHER GROUPS IN EACH OF THE NINE COMPETENCIES CONCERNING THE DEGREE OF THE COMPETENCE HELD

Competence	Value	Significant	p
Agricultural Economics	.391	No	$p > .05$
Agronomy and/or Plant Sciences	.484	No	$p > .05$
Animal Sciences	3.28	No	$p > .05$
Mechanized Agriculture	1.24	No	$p > .05$
Sciences Related to Agriculture	.833	No	$p > .05$
Professional Education	.013	No	$p > .05$
Vocational Agriculture Occupational Training	.383	No	$p > .05$
Future Farmers of America Advisor	3.19	No	$p > .05$
Young and/or Adult Farmers Advisor	.000	No	$p > .05$

$df = 1$ $\alpha = .05$

Significance at $\alpha = 3.98$

The mean responses of the graduates expressing their opinions about the use or need of the competence for the nine teaching areas was previously discussed in Table XXIX. The mean responses of the Oklahoma and Out-of-State teachers were also shown and revealed that the Oklahoma group with a 4.00 response used the Sciences Related to Agriculture area slightly more than the Out-of-State group, which responded at the 3.68 level. It also suggested the Out-of-State group's 4.72 mean response indicated a slightly higher need of their Professional Education competence than the Oklahoma group, as implied by their 4.42 response.

The difference between the two groups in the teaching areas was subjected to an analysis of variance test. As shown in Table XXXIII, it was proven there were no significant differences between the groups' responses, as all the calculated F-values fell short of the necessary 3.98. The mean responses for the teaching areas of Sciences Related to Agriculture and Professional Education showed the most difference and approached the significant level, but even these failed to be significant at the .05 level of confidence.

The mean response to the section of the study pertaining to the opportunity for personal and professional development, as shown in Table XXXI, denoted some differences in the expressed opinions of the Oklahoma and Out-of-State teacher groups. Oklahoma teachers indicated they were better prepared to set up and work with an advisory committee than the Out-of-State group, with reported mean responses of 3.06 and 1.96, respectively. This difference was proven to be statistically significant, as the summary presented in Table XXXIV verified. The calculated F-value of 15.24 was significant at a high (.004) level of confidence. Oklahoma teachers (3.28) also reported they were better

TABLE XXXIII

SUMMARY OF F-VALUES DERIVED FROM THE ANALYSIS OF VARIANCE TEST BETWEEN OKLAHOMA AND OUT-OF-STATE TEACHER GROUPS IN EACH OF THE NINE COMPETENCIES CONCERNING THE NEED OF THE COMPETENCE

Competence	Value	Significant	p
Agricultural Economics	.050	No	$p > .05$
Agronomy and/or Plant Sciences	.714	No	$p > .05$
Animal Sciences	.030	No	$p > .05$
Mechanized Agriculture	.000	No	$p > .05$
Sciences Related to Agriculture	3.13	No	$p > .05$
Professional Education	2.63	No	$p > .05$
Vocational Agriculture Occupational Training	.175	No	$p > .05$
Future Farmers of America Advisor	.323	No	$p > .05$
Young and/or Adult Farmers Advisor	.348	No	$p > .05$

df = 1 α = .05

Significance at α = 3.98

TABLE XXXIV

SUMMARY OF F-VALUES DERIVED FROM THE ANALYSIS OF VARIANCE TEST BETWEEN OKLAHOMA AND OUT-OF-STATE TEACHER GROUPS IN EACH OF THE STATEMENTS CONCERNING THE OPPORTUNITY FOR PERSONAL AND PROFESSIONAL DEVELOPMENT

Statement	Value	Significant	p
1. The availability of the Ag. Ed. Staff for Advisement and Counseling	3.61	No	$p > .058$
2. The degree to which the Ag. Ed. Staff is oriented towards student needs	1.81	No	$p > .532$
3. The degree to which you were prepared to adequately set up and work with an advisory committee	15.24	Yes	$.05 > p > .004$
4. The degree to which you were prepared to effectively work with the school administration and State Department	2.23	No	$p > .136$
5. The degree to which you were prepared to plan and maintain the physical facilities	2.23	No	$p > .136$
6. The degree to which you were prepared to order and maintain equipment	5.14	Yes	$.05 > p > .02$
7. Your preparation to effectively guide and counsel students in job placement	.57	No	$p > .541$
8. Help received from the Ag. Ed. Department in securing job placement	.35	No	$p > .566$

df = 1 $\quad \alpha = .05$

Significance at $\alpha = 3.98$

prepared to order and maintain equipment than the Out-of-State teachers (2.60). The difference in mean responses was proven significantly different by an F-value of 5.14, which was significant at the .02 level of confidence. It should be noted that the mean responses of the Oklahoma teachers were slightly higher than the Out-of-State teachers' on all eight of the statements.

7. Comparison of Non-Transfer and Transfer Students' Perceived Values of Their Pre-Service Training. Another research objective was to ascertain if the transfer students perceived their pre-service preparation at Oklahoma State University differently than those students who received all their college work at Oklahoma State University. As the mean responses concerning the degree of competence held in teaching areas, summarized in Table XXVII, revealed, there were some differences in all the teaching areas. Agronomy and/or Plant Sciences and Young and/or Adult Farmer Advisor were the areas showing the least difference, with .01 and .03 respective point differences. It should be noted that the Non-Transfer group's mean response was slightly higher than the Transfer group's in every teaching area except VAOT. The analysis of variance test concerning the degree of competence held between Oklahoma and Out-of-State teacher groups, as outlined in Table XXXV, revealed that Agricultural Economics was the only teaching area where the difference was significant. However, there was interaction present above the .05 level of confidence, which indicates the difference could have been either because of their transfer status or where they accepted employment. This interaction prevents the difference from being a valid factor.

TABLE XXXV

SUMMARY OF F-VALUES DERIVED FROM THE ANALYSIS OF VARIANCE TEST BETWEEN TRANSFER AND NON-TRANSFER TEACHER GROUPS IN EACH OF THE NINE COMPETENCIES CONCERNING THE DEGREE OF THE COMPETENCE HELD

Competence	Value	Significant	p
Agricultural Economics	4.50*	Yes	$p < .05$
Agronomy and/or Plant Sciences	.003	No	$p > .05$
Animal Sciences	2.27	No	$p > .05$
Mechanized Agriculture	.448	No	$p > .05$
Sciences Related to Agriculture	1.49	No	$p > .05$
Professional Education	2.48	No	$p > .05$
Vocational Agriculture Occupational Training	2.19	No	$p > .05$
Future Farmers of America Advisor	1.01	No	$p > .05$
Young and/or Adult Farmers Advisor	.011	No	$p > .05$

$df = 1$ $\alpha = .05$

Significance at $\alpha = 3.98$

*Interaction present above the .05 level of confidence.

The mean responses of the graduates about the use or need of their competence in the teaching areas, shown in Table XXXIV revealed the Non-Transfer and Transfer groups were relatively close in all the teaching areas. Non-Transfer teachers' responses indicated they used or needed their competence slightly more in all the teaching areas except VAOT, which coincided with the direction of their responses concerning their degree of competence held in the areas. The transfers' 2.67 mean response to their use of VAOT was .67 of a point higher than the Non-Transfer students', which was the largest spread between the groups.

The F-values computed from the analysis of variance test between the mean responses of the Non-Transfer and Transfer teachers are shown in Table XXXVI. Analysis of this data proved there was no significant difference between the groups' expressed use of their competence in any of the teaching areas. An F-value of 2.42 was computed between the groups' mean responses in the Mechanized Agriculture teaching area. Even though the F-value was not large enough to be significant, the test for interaction produced a significant F-value. Therefore, the F-value calculated between the Non-Transfer and Transfer groups was not valid. The teaching area of VAOT was where the largest difference existed in the groups' mean response only produced an F-value of 1.84.

The data previously discussed in Table XXXI concerning the respondents' opportunity for personal and professional development also revealed the mean responses of the Non-Transfer and Transfer teacher groups. The Non-Transfer teachers' mean responses were slightly higher than the Transfer teachers' in regard to (1) availability of Agricultural Education staff for advisement and counseling, (2) degree to which Agricultural Education staff was oriented toward student needs,

TABLE XXXVI

SUMMARY OF F-VALUES DERIVED FROM THE ANALYSIS OF VARIANCE TEST BETWEEN TRANSFER AND OUT-OF-STATE TEACHER GROUPS IN EACH OF THE NINE COMPETENCIES CONCERNING THE NEED OF THE COMPETENCE

Competence	Value	Significant	p
Agricultural Economics	.750	No	$p > .05$
Agronomy and/or Plant Sciences	.006	No	$p > .05$
Animal Sciences	.476	No	$p > .05$
Mechanized Agriculture	2.42*	No	$p > .05$
Sciences Related to Agriculture	.298	No	$p > .05$
Professional Education	1.33	No	$p > .05$
Vocational Agriculture Occupational Training	1.84	No	$p > .05$
Future Farmers of America Advisor	.069	No	$p > .05$
Young and/or Adult Farmers Advisor	.001	No	$p > .05$

df = 1 $\alpha = .05$

Significance at $\alpha = 3.98$

*Interaction present above the .05 level of confidence.

and (3) degree to which they were prepared to set up and work with advisory committee. The Transfer teachers' mean responses were slightly higher on the last five statements. The analysis of variance test between the mean responses of Non-Transfer and Transfer students on all eight statements failed to produce an F-value that was significant, as the data in Table XXXVII verifies. The F-value (3.28), calculated on the difference in the mean response concerning the availability of the Agricultural Education staff for advisement and counseling, was nearest the 3.98 required to be significant.

Conclusions

Inspection and interpretation of the study findings prompted the formulation of certain conclusions by the investigator as detailed below.

Conclusion 1

The respondents in this study felt they had a sufficient degree of competence in all the teaching areas studied, except Vocational Agriculture Occupational Training and Young and/or Adult Farmer Advisement, to effectively perform the duties required of a young Vocational Agriculture teacher. The low mean response in Vocational Agriculture Occupational Training and Young and/or Adult Farmer Advisor indicated the graduates did not feel proficient enough in these areas to perform them adequately.

Conclusion 2

The College of Agriculture is effectively performing its function in the preparation of the Agricultural Education students, as perceived

TABLE XXXVII

SUMMARY OF F-VALUES DERIVED FROM THE ANALYSIS OF VARIANCE TEST BETWEEN TRANSFER AND NON-TRANSFER TEACHER GROUPS IN EACH OF THE STATEMENTS CONCERNING THE OPPORTUNITY FOR PERSONAL AND PROFESSIONAL DEVELOPMENT

Statement	Value	Significant	p
1. The availability of the Ag. Ed. Staff for Advisement and Counseling	3.28	No	$p > .576$
2. The degree to which the Ag. Ed. Staff is oriented towards student needs	.548	No	$p > .532$
3. The degree to which you were prepared to adequately set up and work with an advisory committee	1.02	No	$p > .318$
4. The degree to which you were prepared to effectively work with the school administration and State Department	1.81	No	$p > .179$
5. The degree to which you were prepared to plan and maintain the physical facilities	1.81	No	$p > .179$
6. The degree to which you were prepared to order and maintain equipment	.462	No	$p > .506$
7. Your preparation to effectively guide and counsel students in job placement	1.44	No	$p > .232$
8. Help received from the Ag. Ed. Department in securing job placement	1.21	No	$p > .275$

$df = 1$ $\alpha = .05$

Significance at $\alpha = 3.98$

by the graduates, for the positions of Vocational Agriculture instructors. This was evident by the respondents' indications that Oklahoma State University was the most important source for developing their competencies necessary to teach Vocational Agriculture, with the exception of serving as a Future Farmers of America Advisor.

Conclusion 3

The respondents of the study use their competencies in the teaching areas included in the study extensively with the exception of the Vocational Agriculture Occupational Training and the Young and/or Adult Farmer Advisor competencies. The two areas that were seldom used suggest that the graduates did not feel they possessed the necessary competencies. The high mean response in the other teaching areas indicates the Agricultural Education curriculum is stressing most of the courses that are necessary in the graduates' profession.

Conclusion 4

Respondents are concerned with improving their professional capabilities as shown by their desire for additional instruction in all the teaching areas included in the study, particularly in the technical agriculture areas. However, Professional Education was the area where there was the least need indicated for additional instruction. Graduates were either provided with a sufficient degree of information in the area during their undergraduate work or they did not feel it was important. The graduates also recognized their weakness in Young and/or Adult Farmer Advisement and showed a strong desire for additional instruction in the area. Although they indicated a high degree of

competence in Mechanized Agriculture, the graduates would like to broaden their knowledge in the area.

Conclusion 5

The respondents felt they were afforded sufficient opportunities for their personal and professional development through the Agricultural Education Department at Oklahoma State University. The graduates indicated they were very pleased with the Agricultural Education staff's attitude in helping them prepare for their chosen profession.

Conclusion 6

The graduates who went out of state to teach perceived the Agricultural Education curriculum the same as those who accepted their first teaching position in Oklahoma. They also felt as well qualified to teach Vocational Agriculture as the teachers who stayed in Oklahoma. However, the Oklahoma teachers indicated they were better prepared to work with advisory committees and to order and maintain equipment. This was probably due to their familiarity with the Oklahoma programs.

Conclusion 7

The non-transfer and transfer students' perceptions of their preservice training at Oklahoma State University were essentially the same. Therefore, the Agricultural Education curriculum at Oklahoma State University is serving the transfer student as effectively as it is serving the non-transfer student.

Conclusion 8

The curriculum for Agricultural Education majors is preparing the graduates to become Vocational Agriculture teachers very adequately. However, more emphasis should be placed in the areas of Vocational Agriculture Occupational Training and Young and/or Adult Farmer Advisement. The Mechanized Agriculture area should also be broadened.

Recommendations

On the basis of the analysis of data obtained in this study and comments made by former students, certain general recommendations and recommendations for additional research were developed.

General Recommendations

1. The Agricultural Education Department should give serious consideration to incorporating more of the following instruction in the curriculum:
   a. Vocational Agriculture Occupational Training
   b. Young and/or Adult Farmer Advisement
   c. Advisory committees
   d. Broader scope of Mechanized Agriculture
2. The Agricultural Education Department should set up an advisory committee to help determine the content of the curriculum for future in-service training programs and to help keep the Agricultural Education curriculum at Oklahoma State University as relevant in the future as it presently is.

3. The Agricultural Education Department should continue to strive to keep abreast of Vocational Agriculture teachers' needs and keep the rapport it presently has with the students.

Additional Research

It is recommended by the author that a study of the same basic design be conducted on the graduates who did not enter the teaching profession and determine if their perceived values of the program are different from those who entered the teaching profession.

As perceived by the investigator, it would be of value to follow up this study with similar research to find out how the department could improve the degree of competence the graduates have in the teaching areas. Also, a continuing study of the former students is essential to keep the Agricultural Education program relevant in the future.

A SELECTED BIBLIOGRAPHY

(1) Miller, William C. "Accountability Demands Involvement." The Education Digest, XXXVIII, No. 2 (October, 1972), 43-45.

(2) Fenner, Mildred S. "News and Trends." Today's Education, Vol. 62, No. 1 (January, 1973), 5.

(3) Stenner, Jack. "Accountability by Public Demand." American Vocational Journal, Vol. 46, No. 2 (February, 1971), 33-37.

(4) Bender, Ralph E. "Evaluation of Teacher Education Programs." Teacher Education in Agriculture. Ed. V. R. Cardozier. Illinois: Interstate Publishers, 1967.

(5) Holley, Calvin W., III. "Perceptions of the Duties of Vocational Agriculture Teachers by Student Teachers Before and After Student Teaching as Compared to Perceptions by Cooperating Teachers." (Unpub. M. S. thesis, Oklahoma State University, 1972.)

(6) Love, Gene M. "An Agricultural Educator Looks at the Changing Role of Teachers." American Vocational Journal, Vol. 46, No. 8 (November, 1971), 58-60.

(7) Stevens, Glen Z. Agricultural Education. 2nd ed. New York: The Library of Education, 1969.

(8) Simpson, Elizabeth I., and Mary L. Ellis. "Curriculum Development in Vocational Teacher Education: State of Art and Developmental Needs." Changing the Role of the Vocational Teacher Education. Ed. Rupert N. Evans and Davis R. Terry. Illinois: McKnight & McKnight Publishing Company, 1971.

(9) Clark, Raymond M. "A Program of Teacher Education in Vocational Agriculture for 1970-2000." (Unpub. Staff Study, Department of Secondary Education and Curriculum, College of Education, Michigan State University, 1970.)

(10) U.S. Senate, Subcommittee on Education of the Committee on Labor and Public Welfare. Notes and Working Papers Concerning the Administration of Programs Authorized Under Vocational Education Act of 1963 Public Law 88-210, as Amended. Washington, D.C.: U. S. Government Printing Office, 1968.

(11) Peterson, Ronald L. "A First Year Teacher's Course." The Agriculture Education Magazine, Vol. 43, No. 11 (May, 1971), 281.

(12) Good, Carter U. (ed.). Dictionary of Education. New York: McGraw-Hill Book Company, 1945.

(13) Troyer, Maurice E., and Robert E. Pace. Evaluation in Teacher Education. Washington, D.C.: American Council on Education, 1944.

(14) Gadda, Hilding W. "An Evaluation of the Pre-Service Program of Teacher Education in Agriculture Education at South Dakota College." (Unpub. Ed. D. dissertation, Michigan State University, 1963.)

(15) Guiler, Gilbert S. "How First-Year Teachers Perceive Their Abilities." The Agriculture Education Magazine, Vol. 42, No. 12 (June, 1970), 312-313.

(16) Kelly, Warren G. "An Evaluation of the Pre-Service Agriculture Education Curriculum at West Virginia University." (Unpub. Ed. D. dissertation, University of Missouri, 1968.)

(17) Johnson, Ray L. "A Follow-Up Study of Agricultural Education Graduates of North Carolina Agricultural Technical State University From 1960 Through 1970." (Unpublished study, North Carolina Agricultural and Technical State University, 1971.)

(18) "The 1972 Follow-Up Report." Stillwater, Oklahoma: Oklahoma State University Division of Teacher Education and University Placement Services, August, 1972.

(19) Oklahoma State University Catalog 1972-73. Stillwater, Oklahoma: Oklahoma State University, 1972.

(20) "Objectives of the Teacher Education Program in Agricultural Education." Stillwater, Oklahoma: Oklahoma State University, Department of Agricultural Education, 1970.

(21) "Curriculum and Certification Check Sheet." Stillwater, Oklahoma: Oklahoma State University Department of Agricultural Education, 1972.

(22) Operations and Procedures Manual. Stillwater, Oklahoma: Oklahoma State Department of Vocational and Technical Education, 1972.

(23) Levine, Sol, and Gerald Gordon. "Maximizing Returns on Mail Questionnaires." Public Opinion Quarterly, Vol. 22, No. 4 (1958), 568-575.

(24) Suchman, E. A., and B. McCandles. "Who Answers Questionnaires?" Journal of Applied Psychology (1940), 758-769.

(25) Parten, Mildred. Surveys, Polls, and Samples: Practical Procedures. New York: Harper & Row, Publishers, 1950.

(26) Wallace, David. "A Case for and Against Mail Questionnaires." Public Opinion Quarterly, Vol. 18, No. 1 (1954), 40-52.

(27) Donald, M. N. "Implications of Non-Response for the Interpretation of Mailed Questionnaire Data." Public Opinion Quarterly, Vol. 24, No. 1 (1960), 99-114.

(28) Hodges, Stanley L. "Employee-Employer Assessment of the Effectiveness of Agricultural Mechanics Training Received at Modesto Junior College." (Unpub. Ed. D. dissertation, Oklahoma State University, 1973.)

(29) Linsky, Arnold S. "A Factoral Experiment in Inducing Responses to a Mail Questionnaire." Sociology and Social Research, Vol. 49, No. 2 (1965), 183-187.

(30) Barr, Anthony J., and James H. Goodnight. "Statistical Analysis System." Raleigh: North Carolina State University, 1972.

(31) Popham, W. James. Educational Statistics. New York: Harper & Row, Publishers, 1967.

APPENDIXES

APPENDIX A

DATA COLLECTION INSTRUMENT

Years you were enrolled at OSU _____ Major _____ Year Received Teaching Certificate _____

Other Colleges Attended	Major	Hours transferred	List Vocational Agriculture Teaching positions in chronological order		
			Town	State	Years

For each of the competence areas listed below, answer as it pertains to the duties of your position as a Vocational Agriculture Instructor.

Indicate your answers by marking the appropriate boxes of columns I, III and IV. In column II rank the factors from 1 through 7.

	COLUMNS I: Rate your competence in this area					COLUMNS II: Rank order these sources according to importance in developing this competence							COLUMNS III: How often do you have need of this competence					COLUMN IV	
	1. OUTSTANDING	2. ABOVE AVERAGE	3. AVERAGE	4. BELOW AVERAGE	5. NONE	1. HIGH SCHOOL	2. YOUTH CLUB	3. WORK EXPERIENCE	4. OTHER COLLEGES	5. OKLA STATE UNIV	6. STUDENT TEACHING	7. TEACHING	1. CONSTANTLY	2. FREQUENTLY	3. OCCASIONALLY	4. SELDOM	5. NEVER	Do you feel a need for more instruction in this competence: YES	NO
AGRICULTURAL ECONOMICS - Refers to Farm Management, Farm Credit, Marketing, Price Trends & Cycles, Insurance and Income Taxes																			
AGRONOMY AND/OR PLANT SCIENCES - Refers to Plant & Seed Identification, Fertilization, Soils, Plant Growth & Reproduction, Legal Land Descriptions, Landscaping and Greenhouse Operation.																			
ANIMAL SCIENCES - Refers to Livestock Selection, Care & Breeding, Feeds & Feeding and Artificial Insemination																			
MECHANIZED AGRICULTURE - Refers to Electricity, Plumbing, Small Gas Engines, Arc & Gas Welding, Farm Level, Blueprint Reading, Farm Machinery Repair, and Farm Buildings																			
SCIENCES RELATED AGRICULTURE - Refers to Plant Insects, Plant and Animal Disease, Animal Parasites, and Chemical Control																			
PROFESSIONAL EDUCATION - Refers to Teaching Methods & Skills, Visual Aids, Motivational Methods, and Student Management & Control																			
VACT - Refers to conducting learning experiences in Career Selection, Selection of Training Centers, Student Placement, and Human Relations																			
FFA ADVISOR - Refers to preparing Students and Projects for Faire, Shows & Contests, Planning & Conducting Training Projects, Project Record Books, Program of Activities and State & Local Reports																			
YOUNG AND/OR ADULT FARMER ADVISOR - Refers to setting up and conducting a Young and/or Adult Farmer Chapter																			
OTHER COMPETENCIES - Add any competence you feel has been omitted that is applicable to a Vocational Agriculture Teacher: _____																			

Please give your sincere opinion about the following statements concerning your education in the Agricultural Education Department at Oklahoma State University:

	Poor	Fair	Satisfactory	Good	Excellent
1. The availability of the Ag. Ed. Staff for Advisement and Counseling.					
2. The degree to which the Ag. Ed. Staff is oriented towards student needs.					
3. The degree to which you were prepared to adequately set up and work with an advisory committee.					
4. The degree to which you were prepared to effectively work with the school admin. and State Dept.					
5. The degree to which you were prepared to plan and maintain the physical facilities.					
6. The degree to which you were prepared to order and maintain equipment.					
7. Your preparation to effectively guide and counsel students in job placement.					
8. Help received from the Ag. Ed. Department in securing job placement.					

APPENDIX B

LETTERS OF TRANSMITTAL AND INSTRUCTION

OKLAHOMA STATE UNIVERSITY • STILLWATER

Department of Agricultural Education 74074
(405) 372-6211, Ext. 444

September 26, 1973

As you know the primary purpose of the Agricultural Education Department at Oklahoma State University is to prepare people to teach Vocational Agriculture. In order to train people for this very important task, certain adjustments must be made in the curriculum from time to time.

In order to maintain the quality of education needed the department feels they must constantly evaluate the program in various ways. The Agricultural Education staff are in agreement that perhaps the most valuable evaluation comes from teachers in the field. Therefore, I am conducting a study to determine how recent graduates who have entered the profession feel about how well and where necessary competencies were developed. There is no way to obtain this information without YOUR response.

The questionnaire was designed to take as little of your valuable time as possible and still allow you to give your feelings about the program. The purpose for the information at the top of the questionnaire is to categorize the returned questionnaires. This information will be confidential and no one besides myself will see it. After they are compiled the total response will be used. At no time will you or your department be identified in the data reported.

The following example will help you complete the questionnaire:

For each of the competence areas listed below, answer as it pertains to the duties of your position as a Vocational Agriculture Instructor. Indicate your answers by marking the appropriate boxes of columns I, III and IV. In column II rank the factors from 1 through 7.	COLUMNS I: Rate your competence in this area — OUTSTANDING 1, ABOVE AVERAGE 2, AVERAGE 3, BELOW AVERAGE 4, NONE 5	COLUMNS II: Rank order these sources according to importance in developing this competence — HIGH SCHOOL 1, YOUTH CLUB 2, WORK EXPERIENCE 3, OTHER COLLEGES 4, OKLA STATE UNIV 5, STUDENT TEACHING 6, TEACHING 7	COLUMNS III: How often do you have need of this competence — CONSTANTLY 1, FREQUENTLY 2, OCCASIONALLY 3, SELDOM 4, NEVER 5	COLUMN IV: Do you feel a need for more instruction in this competence — YES, NO
LIVESTOCK SHOWS - Refers to Selection of suitable animals, Ration preparation & ways of feeding and grooming animals for shows	2	1 3 7 6 5 2 4	2	YES
FFA BANQUETS - Refers to program planning, ways of financing, guest invitations, menu selection and preparation of students	4	5 7 6 4 1 3 2	2	YES

Your prompt attention to this problem will be greatly appreciated. I will look forward to hearing from you in the near future.

Sincerely,

Gary W. Updyke
Graduate Assistant

OKLAHOMA STATE UNIVERSITY • STILLWATER

Department of Agricultural Education
(405) 372-6211, Ext. 444

74074

October 17, 1973

The response to my questionnaire has been very good to date, and it appears that the respondents have put a great deal of thought into filling them out. In order to get an accurate census about the agricultural education program from the former graduates, we need 100% response. YOU, as a former graduate, are the only one that can provide this information.

Although this is a very busy time of year for you, please fill out the questionnaire I sent to you and return it in the self-addressed, stamped envelope. In case you misplaced the first questionnaire, I am enclosing another one. If you have already mailed your questionnaire, please disregard this part of the letter encouraging response and consider this a letter of appreciation for your prompt response.

If I can be of any assistance to you now or in the future, please let me know. Thank you for your cooperation and time in this matter.

Sincerely yours,

Gary W. Updyke
Graduate Assistant

Oklahoma State University
College of Agriculture / Resident Instruction

STILLWATER, OKLAHOMA 74074
(405) 372-6211, Ext. 7605

November 12, 1973

Mr.
Vocational Agriculture Instructor
High School
Oklahoma 74

Dear

The deadline is drawing near for the cut-off date for your response to be included in my study. Since I visited with you on the phone and you indicated you would fill out the questionnaire I am wondering if you misplaced the forms I sent you. Therefore, I am enclosing another set and a stamped, self-address envelope for your use.

The Agricultural Education staff agrees with me on the need for receiving your response in order to adequately measure the feeling of our former graduates. At the present time 91 percent of the former graduates who were included in the study have responded. The higher percentage of return I get, the higher the validity of the study will be.

WON'T YOU PLEASE FILL OUT & RETURN YOUR QUESTIONNAIRE AND HELP US REACH 100

PERCENT RETURN?

Sincerely,
Gary W Updyke
Gary W. Updyke
Graduate Assistant

GU:jh

Dear : Gary Updyke could sure use your help in completing his study. Would you take an extra minute to complete the enclosed forms for him?
We were sorry to learn of your . One of your former students told me the other day.
Come by for a visit.
Thank you
Robert Terry

Oklahoma State University
College of Agriculture / Resident Instruction

STILLWATER, OKLAHOMA 74074
(405) 372-6211, Ext. 7605

November 13, 1973

Mr.
Vocational Agriculture Instructor

New Hampshire 032

Dear

The deadline is drawing near for the cut-off date for your response to be included in my study. Since only three of the graduates who went out of state to teach have not returned their questionnaires. I am guessing that the forms I sent earlier have been misplaced. Therefore, I am enclosing another set and a stamped, self-address envelope for your use.

The Agricultural Education staff agrees with me on the need for receiving your response in order to adequately measure the feeling of our former graduates. At the present time 91 per cent of the former graduates who were included in the study have responded. The higher percentage of return I get, the higher the validity of the study will be.

WON'T YOU PLEASE FILL OUT & RETURN YOUR QUESTIONNAIRE AND HELP US REACH 100 PER CENT RETURN?

Sincerely,
Gary W. Updyke
Gary W. Updyke
Graduate Assistant

GU:jh

Dear I hope things are going well for you. We could sure use your help in completing Mr. Updyke's study. Won't you take a minute to fill out the enclosed questionnaire and return it to us.

Let us know if we can be of any help to you with curriculum materials, etc. Thanks for your assistance

Robert Terry

VITA

Gary Wade Updyke

Candidate for the Degree of

Doctor of Education

Thesis: NEW TEACHERS' PERCEPTION OF THE PRE-SERVICE AGRICULTURAL EDUCATION PROGRAM AT OKLAHOMA STATE UNIVERSITY

Major Field: Agricultural Education

Biographical:

Personal Data: Born at Vici, Oklahoma, December 1, 1938, the last of two sons of Loitz G. and Florence E. Updyke.

Education: Graduated from Vici High School, Vici, Oklahoma, in May, 1956; attended Southwestern State College, Weatherford, Oklahoma, from August, 1956, to January, 1957; attended Oklahoma State Technical School, Okmulgee, Oklahoma, from January, 1957, to April, 1958; received the Associate of Science degree from Northern Oklahoma College, Tonkawa, Oklahoma, 1962; received the Bachelor of Science degree from Oklahoma State University with a major in Animal Science in January, 1967; received the Master of Science degree from Oklahoma State University in July, 1971, with a major in Agricultural Education; engaged in post-graduate study at Oklahoma State University from September, 1971, to May, 1974; completed requirements for the Doctor of Education degree at Oklahoma State University in May, 1974.

Professional Experience: Varied agricultural experience, 1952-1958; United States Marine Corps, 1958-1962; Vocational Agriculture Instructor at Floyd High School, Floyd, New Mexico, from July, 1967, to July, 1970; Assistant State Supervisor of Vocational Agricultural Education, Santa Fe, New Mexico, 1970-1971; graduate teaching assistant, Agricultural Education Department, Oklahoma State University, from September, 1971, to May, 1973; Assistant Director of College of Agriculture Placement Center, Oklahoma State University, from September, 1973, to present.

Organizations: Member of Oklahoma and National Vocational Agriculture Teachers' Associations, Phi Delta Kappa, Red Red Rose,

Phi Kappa Phi, former member of New Mexico Vocational Agriculture Teachers Association, American Vocational Association, Floyd Teachers Association, National Education Association, National Association Supervisors of Agricultural Education.