HISTORICAL ASPECTS OF GRADUATE PROGRAMS IN AGRICULTURAL/ EXTENSION EDUCATION IN THE UNITED STATES

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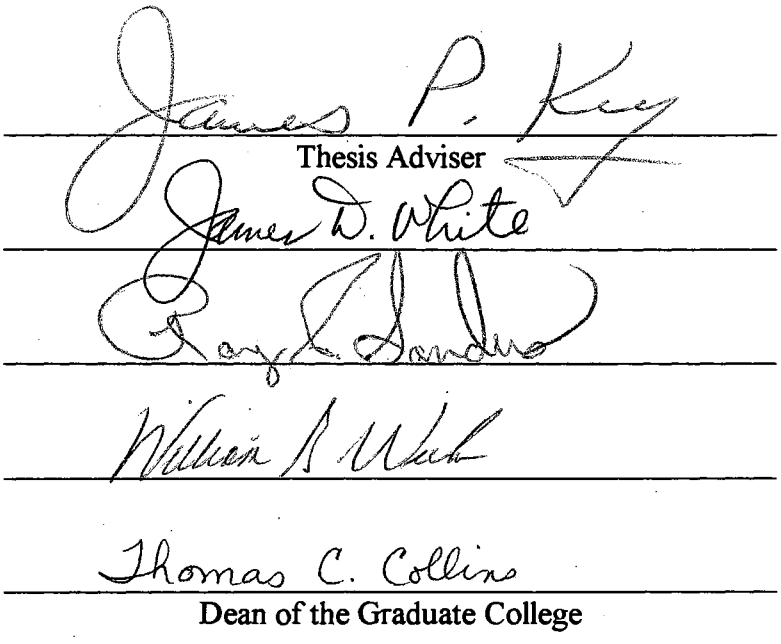

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CHAPTER I

INTRODUCTION

The importance of higher education in the United States cannot be overemphasized. Societal and global demand for food and fiber have placed the onus of agricultural and food production knowledge on agricultural education programs. Subsequently, demands for better and qualified personnel have instigated the creation of graduate programs in agricultural/extension education departments in colleges and universities all across the United States which fosters the teaching, research, and extension of agricultural education for young and articulate men and women.

Information is an essential aspect of education. Stevens (1967) said that education was relevant to personal achievement of economic goals. Adequate knowledge of the history of agricultural education and specifically graduate programs in agricultural education would be beneficial to personal and professional development. This history would be meaningful, not only to young stars, but to adults, especially practitioners and or prospective practitioners in the profession.

Graduate programs in agricultural/extension education developed rather slowly at the beginning of the twentieth century, partially because before 1900 the belief was generally that two years of college or less was sufficient for the elementary or secondary teacher (Robison and Jenks, 1913). Even though programs in agriculture in institutions

of higher education began in the mid 1700s (two of the earliest were the chemistry of agriculture at the Philadelphia Academy [University of Pennsylvania] in 1751 and husbandry and commerce at King's College [Columbia University] in 1754), they progressed slowly until the passage of the Morrill Acts of 1862 and 1890. These acts led to the founding of agricultural and mechanical colleges (land-grant). One of the few agricultural institutions established before these acts was the Michigan Agricultural College in 1857, generally considered to be the first agricultural college founded. These agricultural colleges became the parent institutions for agricultural education, preparing teachers of agriculture.

According to Jenks (1913), the first graduate program in agriculture was a seminar rotated among interested land-grant colleges about every two years between 1902 and 1912. " In 1902, Thomas F. Hunt, then Dean of the School of Agriculture of Ohio State University, conceived the idea of a graduate school of agriculture to furnish the opportunity for a somewhat extended discussion of topics of interest in agricultural science by the leading teachers or investigators in the field" (p. 264). The University of Illinois, Cornell University, Iowa State College and Michigan Agricultural College hosted sessions. Considerable emphasis was placed on college instruction in agriculture, secondary instruction in agriculture and agricultural extension teaching at the 1912 session.

According to Martin (Cardozier, 1967) teacher education in agriculture really began in the first two decades of the twentieth century (1900-1920). According to Stimson and Lathrop (1942), Massachusetts Agricultural College in 1907, Michigan Agricultural College in 1908, Iowa State College in 1911, and the University of Minnesota

Minnesota in 1912 established the first four departments of agricultural education. Stimulated by the Smith Hughes Act of 1917, other colleges and universities established departments, until in 1921 there were 48 programs in white and 12 programs in Negro institutions. The natural outgrowth of these undergraduate programs in agricultural education were graduate programs. Even in 1912, a professor in agricultural education at Ohio State University was predicting the need for graduate studies in agricultural education (Bricker, 1914).

After the rush to provide enough teachers of agriculture somewhat subsided, the need to better prepare those teachers developed. Broyles (1926), agricultural education faculty at the Pennsylvania State College, conducted one of the few studies found that concerned graduate programs in agricultural education. He stated, "In all lines of teaching, the graduate schools of colleges and universities are looked to as agencies of training for better teaching. In search of better preparation, the teachers of vocational agriculture return to college for graduate work" (p. 8). Of the twenty institutions he surveyed, the University of California listed the first masters thesis in agricultural education in 1912. In the 1919-1920 school year, the University of California, University of Minnesota, Cornell University, the Pennsylvania State College, and the University of Wisconsin reported graduate student enrollment in agricultural education. The greatest numbers were at Cornell and Penn State with 10 and 9, respectively. Over the five year period 1919-1924, Cornell had well over twice as many students enrolled as did any of the other 19 institutions. Enrollment in the summer was as many as six times the number enrolled during the regular session. As the study by Broyles was one of the few studies found concerning graduate programs in agricultural/extension education,

there appeared to be a great need to identify and document graduate program information in agricultural/extension education in the United States.

Study of the history of graduate programs in agricultural/extension education would be unnecessary if graduate programs were unimportant to this profession. Studies have shown that graduate study was vital to success in the agricultural endeavor. Describing the value of graduate work, Berkey (1967) stated that graduate work is a primary vehicle whereby professional educators (professionals generally) up-grade their professional as well as technical skills.

Statement of the Problem

Historical records and trends in agricultural/extension graduate programs have scarcely been documented by institutions, organizations or individuals. Agricultural/ extension educators need to know the trends and directions graduate programs have taken within the profession to develop new programs, and make predictions with some degree of certainty.

Purpose of the Study

The purpose of the study was to identify and document agricultural/extension education graduate programs in colleges/universities in the United States.

Objectives of the Study

In order to accomplish the purpose of this study, the following objectives were established:

1. To identify 1862 Land-Grant, 1890 Land-Grant and non Land-Grant institutions which offer or have offered graduate programs in agricultural/extension education and when they were established;

2 .To determine the dates graduate programs started at the institution and started in agricultural/extension education;

3. To determine the units administering and housing the agricultural/extension education graduate programs;

4. To determine when the different graduate degrees were first awarded in agricultural/extension education;

5. To determine the degree types and the number of graduate degrees awarded in agricultural/extension education;

6. To identify the ten institutions in agricultural/extension education graduate programs in the United States producing the greatest number of graduate degrees;

7. To determine the Degree Concentration Ratio for the various graduate degrees in agricultural/extension education;

8. To determine the program emphasis in the agricultural/extension education graduate programs;

9. To determine enrollments and fellowships/assistantships in the agricultural/ extension education graduate programs;

10. To determine the difference between total enrollments and fellowships/ assistantships between 1990 - 1995;

11. To determine the perceived placement of graduates of the programs in agricultural/extension education; and

12. To determine admission/retention requirements of the agricultural/extension education graduate programs.

Assumptions for the Study

The following assumptions were made by the author of this study.

1. Responses from participating institutions were as accurate and credible as records that were available to the respondents.

2. Institutions that no longer conducted graduate programs in agricultural/ extension education would so indicate and return the questionnaire.

Scope of the Study

The scope of this study included colleges/universities conducting or which had conducted graduate programs in agricultural/extension education in the United States.

Definitions

Agricultural Extension Education -- An agricultural education practice of taking agricultural information to the farmer in his/her local setting.

Agricultural Education -- The education system by which scientific agricultural knowledge is impacted through teaching, research, and extension activities.

The Master of Agriculture (M. Ag.) -- An advanced degree offered to further knowledge and skills of agriculture and education in preparation for and advancement in teaching, extension, administration and other professional areas. In most cases this

degree option does not require the writing of a thesis. However, candidates for a non-thesis option are required to write a creative component. Individuals opting for a non-thesis program normally would regard this degree as a terminal degree.

The Master of Science (M.S.) -- An advanced degree that develops the theoretical and research foundation for further graduate studies in addition to furthering skills and knowledge in agriculture and education. The writing of a thesis is normally a requirement for the Master of Science degree.

Specialist in Education (Ed.S.) -- An advanced degree, beyond the masters degree, designed for teachers in public schools, two-year and four-year colleges and universities. It emphasizes curriculum/ supervision and information/communication technology in agriculture.

Master of Education (M.Ed.) -- A professional advanced degree that emphasizes educational psychology and educational philosophy in agricultural education. It is designed to prepare graduates for teaching agricultural subjects. In most cases this degree does not require a thesis.

The Doctor of Education (Ed. D.) -- A terminal degree designed to prepare graduates for careers in teacher education, supervision, administration, curriculum development and other areas of professional leadership in agriculture, agricultural extension or vocational education. An empirical research study of problem of interest to themselves and to the community is normally done. The program emphasizes education specialties.

The Doctor of Philosophy (Ph.D.) -- Is a terminal degree designed to meet needs of practicing professionals with a strong interest in research. It prepares students for the role of teacher and researcher in higher education, or researcher in non-educational settings. A theoretical or experimental study of a problem of interest to themselves and to the community is normally done. The program emphasizes research.

Top Ten -- The first ten institutions producing the largest number of graduate degrees in agricultural/extension education.

Degree Concentration Ratio (^{D}CR) -- The proportion of the total degrees awarded (by type of degree) accounted for by 1, 2, 3, or. institutions in that category of degree awarded. For instance, $^{D}CR_{MS1}$ is the ^{D}CR for the institution granting the largest number of M.S degrees in the study. ^{D}CR values are between 0 to 1.00, with zero representing no degree of concentration and 1 representing the highest degree of concentration.

Abbreviations

A. S. C. S. -- Agricultural Stabilization and Conservation Service

A.V.A. -- American Vocational Association

Cal Pol S. U. -- California Polytechnic State University

CAGS. -- Certificate of Agricultural Science

^{D}CR. -- Degree concentration ratio

D.P. -- Dropped program

Ed.D. -- Doctor of Education

Ed.S. -- Specialist in Education

FmHA. -- Farmers Home Association

F.F.A. -- Future Farmers of America

GMAT. -- Graduate Management Admission Test

MAT -- Miller Analogy Test

TOEFL --Test of English as a Foreign Language

G.P.A. -- Grade Point Average

G.R.E. -- Graduate Record Examination

Knox. -- Knoxville

M.A. -- Master of Arts

M.S. -- Master of Science

M.Ag. -- Master of Agriculture

M.AgEd. -- Master of Agricultural Education

M.A.T. -- Master of Arts in Teaching

M.Ed. -- Master of Education

M.Ext.Ed. -- Master of Extension Education

M.O.E. -- Master of Extension

M.S.Ag.Ind. -- Master of Science in Agricultural Industries

M.S.-Ed. -- Master of Science in Education

N.-- North

N.R.C.S. -- Natural Resources Conservation Service

Penn. -- Pennsylvania

Ph.D. -- Doctor of Philosophy

Pom. -- Pomona

Q&V. -- Quantitative and Verbal

S.C.S. -- Soil Conservation Service

SLO. -- San Lius Obispo

S. -- South

S.U. -- State University

SW -- South West

Univ Mass. -- University of Massachusetts

USAID. -- United States Aid for International Development

UW -- University of Wisconsin

VPI -- Virginia Polytechnic Institute

W -- West

CHAPTER II

REVIEW OF THE LITERATURE

The review of literature chapter of this study is divided into four sections. It includes: (1) graduate programs in agricultural education and national development; (2) legislation: the effects on agriculture and agricultural education; (3) historical development of agricultural education departments in the United States; and (4) summary.

Graduate Programs in Agricultural Education and National Development

The passage of the Smith-Hughes Act of 1917 created a demand for teachers for schools and departments of vocational agriculture. The supply of men who held Bachelor of Science degrees was adequate. The concerns, therefore, shifted from getting enough men to occupy teaching positions to obtaining better prepared men (Broyles, 1926). Shepardson (1929) indicated that the school or institution felt an obligation to become the stimulating center of community life. The colleges, he reiterated, were directed toward specific public ends through its teaching for the training of better farmers or agricultural leaders, and through its research to improve the economic condition of the state and nation and extension work to better the circumstances of rural life.

Further emphasizing the importance of and the imperative need for graduate programs for the teaching profession, Broyles stated that in all lines of teaching the graduate schools of colleges and universities were looked to as agencies of training for better teaching. Shepardson concluded that agricultural colleges (and of course agricultural education departments) were of central importance. Agricultural colleges, he stressed, are where scientific discoveries are made, students are taught, teachers are trained and extension work receives its content. He likened the college to the source of the stream that runs down to the schools and out into the farm. It is the "fountain and spring" of agricultural education.

Stevens (1967) indicated that the department of agricultural education develops agricultural competencies needed by individuals engaged in or preparing to engage in agricultural and off-farm agricultural occupation. The departments of agricultural education in the land-grant institutions offer a wide variety of degree programs. Ake (1993) quoted Thompson (1982) to have said that we generally think of the Master's and Doctoral degrees whenever we think of graduate study in agricultural education. The Master's and Doctoral degrees are broken down into the Master of Science (M.S.), Master of Agriculture (M. Ag.), Specialist in Education (Ed.S.), Master of Education (M. Ed.), Doctor of Education (Ed.D.), and Doctor of Philosophy (Ph.D.).

Graduate study by definition is the formal study or education pursued subsequent to having received a bachelor's degree (Cardozier, 1967). Cardozier reiterated that usually, graduate study was engaged in to earn a degree or degrees higher than the bachelor's degree. The overall purpose of graduate study was to broaden the students' background in the subject area of his interest. Such interest has to be sustained on a

continual basis throughout the study and beyond. Usually, students undertake courses related to the subject area after due consultation with their advisor and committee members. In some cases, however, a special research study would have to be conducted as part of the degree requirements.

In the United States, graduate programs in agricultural education started about 1919 in five institutions: The University of California, University of Minnesota, Cornell University, the Pennsylvania State College and the University of Wisconsin. There was a total enrollment of 24 students in all 5 institutions. By 1924, the number of programs had increased to 20 with a dramatic increase in enrollment of 254 students (Broyles, 1926).

Generally, a graduate program in agricultural education was undertaken for a variety of reasons. Cardozier (1967) indicated that Attaway (1963) said that he needed to do graduate studies to enhance his professional experience. Attaway of East Texas College wrote:

> Realizing that I teach and administer a complete program of vocational agriculture for all-day students, young farmers, and adult farmers in our complex society and with our rapidly changing science of agriculture, it necessitated complete preparation for the job in order to expect reasonable success. Thus I felt it was my duty and responsibility to myself and my future profession to plan and complete a graduate program in agricultural education. With the help of my advisor, I tried to plan this program, to further develop competencies and increased proficiencies that I needed to teach vocational agriculture more successfully than I may have done with just my undergraduate training alone. In fact, it seems utterly impossible for a student...to become adequately proficient in performing all the diverse duties of a teacher of vocational agriculture through pre graduate study (p. 284).

Emphasizing the purpose of graduate studies, Cardozier (1967) said that the most important thing of all was that of developing further his ability as a teacher of

agriculture (Bjoracter, 1963). In the Oklahoma State University catalog it was indicated that graduate study among other things would:

> ...provide an exciting research environment where students and faculty could make significant contributions to the store of knowledge, and to encourage each individual to reach his or her potential (1994-95, p. 136).

Commenting on the worth of graduate programs in agricultural education, Howell et. al. (1983) indicated that while earning the degree, a thesis research experience increased the teacher's competence and might produce results worthy of use in other schools. Ake (1993) also said that at Oklahoma State University the graduate college is the "hub" of advanced study in agricultural education. Here faculty and students share interest in conducting research to achieve greater knowledge which they present to the scholarly community.

The Doctoral degree became more diversified compared to the Master's degree depending on what the individual wanted to do after completing the degree (Ake, 1993). Shepardson (1929) indicated that on a comparative basis, 375 masters degrees were awarded in agricultural fields in 1925, whereas in 1979, the departments of agricultural education alone awarded 700 (Osborn, 1983), thus reflecting the increased significance of graduate studies to the field of agricultural education.

Agricultural education played a significant role in national development. Through the four program areas of agricultural cooperative extension service, rural development, home economics, and 4-H and youth development, the department has had significant influence on social life and economic growth of the American society (Howell et. al., 1983).

The Cooperative Extension Service

Historically, the cooperative extension service has had a record of excellence--working harder than before in attempting to reach the last farmer. Quoting Dean L. H. Bailey, Davis (1912) said, "More than any other institution the extension service stands for democracy and nativeness of education, for their purpose was nothing less than to reach the last man on the last farm by means of the very things by which that man has lived" (p.38).

The extension service has promoted and continued to promote interest in agriculture and rural life among men, women, boys and girls through numerous other programs and activities. The 4-H Club, the Boys' Farm Club, the Girls' Home Club, etc. were some of the programs and activities through which extension tried to reach the people. Quoting Marshall Field, White (1995) indicated that historically extension has an outstanding record of responding positively to the critical needs of society. During the time of emergency, as in war time, extension has played a vital role in organizing food production, food preservation, frugality, efficiency in agriculture, etc.

Supporting this view, Shepardson (1929) indicated that, "We must look to the war and post-war periods when nationwide campaigns to increase production through boys' and girls' clubs, propaganda for the conservation of vegetables and fruits, restrictions upon the use of sugar and white flour all contributed to a common appreciation of the importance of agriculture in time of war" (p. 4).

The cooperative extension service, White (1995) asserted, helped people to improve their lives through education that focused on scientific information. Through the

first agent, Seaman Knapp in 1883, down to the present day agent, the extension service has contributed enormously to national development because it has sought and accomplished remarkably well the demonstration of our system of agricultural education (Martin, 1941).

Emphasizing the importance and the effect of the cooperative extension service on national development, Howell, et. al. (1983) quoted King (1975) to have said that the cooperative extension service in this country has become the single largest informal education system in the world with the singular purpose of helping people to improve the quality of their lives through the development of problem solving skills, consumer competency, wise natural resource development, and building of better communities. The emphasis, King said, was on helping people help themselves.

It is not enough to concentrate on the cooperative extension service generally, but also specifically on programs and activities like rural development, home economics, 4-H and youth development, agriculture in the classroom, agricultural leadership and other programs and activities. These are avenues through which agricultural education departments have touched peoples' lives specifically, shedding influence upon society with tremendous impact on national development. The high school is one area in today's American school system where early intervention, by way of career choices and other educational opportunities in agriculture, has created a formidable work force. This is definitely due, in part, to agricultural education departments making available well trained teachers in vocational agriculture.

Legislation: The Effects on Agriculture and Agricultural Education

In its primitive form, the agricultural practices of the early settlers of the American colony were performed by manual labor. According to Howell, et. al. (1983), the early settlers brought with them the practices in crop production and animal husbandry generally used in Europe. They imported seeds, plants, breeding stock and hand tools. The struggle for survival at the subsistence level of farming (Howell, et. al, 1983) emphasized the primary way of life, and it involved practical manual labor in farming operations.

As the early American colony gradually became increasingly populated, it soon became evident that subsistence agriculture would do nothing to pull the masses from the drudgery of poverty. It was quickly realized that agricultural knowledge would be needed to enhance the living standard of the teeming population.

The movement for agricultural education in the United States dates back to 1785 when associations for the promotion of agriculture began to be formed. In 1792 colleges (first Columbia and then Yale) undertook the task of providing instruction in agriculture (Davis, 1912). The real movement for scientific agriculture had its beginning in 1862 when Congress passed the first piece of legislation that shaped and reshaped the agricultural economy of the United States. Seven major legislative acts were selected which have impacted agriculture and agricultural education enormously in this country. These legislative acts were: (I) Morrill Land-Grant Act of 1862, (ii) Hatch Act of 1887, (iii) Morrill Land-Grant Act of 1890, (iv) Smith-Lever Act of 1914 (v) Smith-Hughes

Act of 1917, (vi) Vocational Act of 1963, and (vii) The Vocational Education Amendments of 1968.

Because the Carl Perkins Act and other more recent acts have had a direct effect on agriculture but an indirect effect on graduate programs in agricultural/extension education, this study has focused on seven acts with the most direct impact on agricultural/extension education graduate programs. What follows are brief discussions of these legislative acts and how they have influenced agricultural education.

Morrill Land-Grant Act of 1862

No single piece of legislation has affected agricultural education more than the Morrill Land-Grant Act of 1962. Before the passage of this Act, it was difficult for someone to get a college education except for the selected few who could afford it (Molnar, Dunkelberg, and Salter, 1981; Ake, 1993). Teaching agriculture at the college level also had its share of predicaments. According to Scott (1970), all of the efforts to make agricultural knowledge available at the college level availed little. Like an early attempt to teach agriculture at the University of Missouri, these ideas died "like a seed on a rock." Lack of interest among farmers, hostility among academic men, and shortage of funds were handicap that could not be overcome (Scott, 1970).

According to Shepardson (1929), the land-grant colleges did not spring full-armed from the brain of Zeus but grew out of experience. These colleges and institutions felt most acutely that they were called upon to perform the almost impossible double tasks of winning the support of practical farmers and securing the sympathy of hostile educators of the old school.

If nothing else, it was quickly realized that there was a real need for more adequate federal assistance in the form of grants of public land. The sale of these 30,000 acres of land provided funds for the establishment of colleges of agriculture and mechanical arts in each state of the federation. The Act in its intent was:

> ...The endowment, support, and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the States may respectively prescribe, to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life (Brunner, 1962, p. 55).

The land-grant colleges grew into residential agricultural education institutions and eventually established experiment stations and cooperative extension (Howell et. al, 1983). Thus, "a nation-wide system of colleges and institutions was developed in which agriculture received the attention so long denied it" (Scott, 1970, p. 27). The land-grant institutions created through the Morrill Act of 1862 provided a concept of higher education tailored to the needs of pioneer people in a new world (Ahlgren, 1967).

Hatch Act of 1887

To complement the institutions in research, the legislature passed the Hatch Act of 1887. The Act stated that:

> ...And in acquiring and diffusing among the people of the United States useful and practical information of subjects connected with agriculture and to promote scientific investigation and experiment respecting the principles and applications of agricultural science (Brunner, 1962, p. 70).

In recognition of the need for research as a basis for developing agriculture, the Hatch Act of 1887 was passed authorizing appropriations to the states and territories for setting up the system of agricultural experiment stations within the land-grant institutions

(Davis, 1912; Brunner, 1962; Howell, et. al, 1983). The Hatch Act was one of the legislative acts that inspired agricultural interest at the high school level. Moore (1887) stated that there was not much interest in agricultural education at the secondary level until after the legislature passed the Hatch Act of 1887.

Morrill Land-Grant Act of 1890

In the United States, the first Morrill Act of 1862 was considered the origin of the present comprehensive system of public education in agriculture. The passage of the second Morrill Act in 1890 made additional funds available for the further endowment of land-grant colleges and institutions (Davis, 1912; Brunner, 1962; Scott, 1970; Howell, et. al, 1983).

In 17 southern states with the heaviest black population, the Act also provided funds for the initial establishment of a system of black colleges (Mayberry, 1991; Molner, et. al, 1981). Thus, this Act was recognized as an advanced educational opportunity for blacks (Preer, 1982).

Smith-Lever Act of 1914

Demonstration work has been described as the inspiration of the Smith-Lever Bill. According to Congressman Lever, "We have accumulated in the agricultural colleges and in the Department of Agriculture sufficient agricultural information, which if made available to the farmers of this country and used by them, would work a complete and absolute revolution in the social, economic and financial conditions of our rural population" (Martin, 1941, p. 156). The Smith-Lever act was:

> An Act to provide for cooperative agricultural work between the agricultural colleges in the several states receiving the benefits...in order to aid in diffusing among the people of the United States useful and practical information on subjects related to agriculture and home economics (Martin, 1941, p. 166).

Howell, et. al. (1983) stated that the Smith-Lever Act made permanent annual appropriations that facilitated the relationship between the land-grant colleges and the Department of Agriculture. Morton (1942) indicated that the act was a great plan that would further the advancement of civilization, and that it was destined to be an object lesson to all the nations of the earth.

Smith-Hughes Act of 1917

The Smith-Hughes Act, popularly known as the "National Vocational Education Act", was regarded by many as the milestone in the development of agricultural education professionals in this country. Camp (1987) stated that vocational educators have often attributed the very beginning of the agricultural education profession to the Smith-Hughes Act of 1917. Key and Price (1987) also indicated that the Smith-Hughes Act not only facilitated teaching agriculture at the high school level but also provided funds for the training of teachers of agricultural vocational education.

In a report published by the Country Life Commission in 1910, Shepardson (1927) indicated how farmers in this country struggled out of the thirty-year economic depression. Research and teaching, Shepardson emphasized, became strong due to increased grants as a result of the passage of the Smith-Lever Act of 1914, thus stimulating increased enrollment in agricultural colleges.

Malpiedi (1987) indicated that certain conditions were needed for schools to qualify as vocational education institutions and hence receive funding under the Smith-Hughes Act. These conditions included:

1. vocational agricultural instruction and supervised practices were to be offered to students fourteen year old and older--this would be taught by a certified vocational agriculture teacher;
2. a state designated board would administer the act;
3. a formation of supervisors and teacher trainers would be established; and
4. a yearly plan and report would be submitted for approval by the Federal Board for Vocational Education (p. 11).

Howell et. al. (1983), however, indicated that the Smith-Hughes Act, apart from providing funds for the promotion of vocational education, also acted in cooperation with the states in paying salaries to teachers; supervisors or directors of agricultural subjects and teachers of trade, home economics and industrial subjects, and in teacher preparation for vocational subjects.

The Vocational Education Act of 1963

The Vocational Education Act of 1963 was an amendment to the Smith-Hughes Act passed in 1917. It provided permanent annual appropriations for the promotion of vocational education. In the elementary and high schools across the country, the movement of agricultural education that started in the first decade of the twenty-first century culminated in the creation of the vocational education curriculum (Howell, et. al. 1983). The 1963 Act stated in part that:

> Any amount allocated (or appropriated)...for agriculture may be used for vocational education in any occupation involving knowledge and skills in agricultural subjects (Howell et. al, 1983, p.19).

According to Shepardson (1929), the crop failure of 1938, which upset the favorable trade balance and caused the importation of millions of dollars of food stuff, forced national attention once more to agricultural needs. Society again became active, as secondary schools were established wherein the elements and scientific principles of agriculture were taught.

According to Key and Holley (1986), the Vocational Education Act was basically designed to extend present programs and to develop new programs of vocational education, encourage research and experiments, and to provide work study programs.

1968 Amendments of the Vocational Education Act of 1963

In 1968, the 1963 Act was amended to expand its scope. According to Ake's research in 1993, the amendment was "To provide vocational offerings to people of all ages in all communities of a state and to provide access to vocational training of high quality and realistic in anticipation of gainful employment suited to their needs, interest and ability to benefit from such training" (p. 11). Yoder (1983) remarked that agriculture and agricultural education in the United States had both been tremendously affected by this legislation.

Historical Developments of Agricultural Education Departments

The agricultural education movement in the United States dates back to the eighteenth century when associations for the promotion of agriculture began to form.

According to Davis (1912), it was not until 1862 that the real movement for scientific agriculture had its beginning when congress authorized the establishment of a Department of Agriculture and passed the Morrill Act giving each state a grant of land with which to establish a state college of agriculture and mechanical arts. Through the extension effort, the "college" was brought to the farmer in his local community.

According to Davis (1912), the early extension work of agricultural colleges among public schools was intended to awaken an interest in agricultural affairs. Later other phases of agriculture aimed at preparing teachers who wished to teach the subject was introduced. Subsequently, the demands on many colleges for this kind of work had become too great to be properly met by the regular extension departments. Therefore to meet this demand, Davis indicated that special departments, the departments of agricultural education, were organized in colleges. In 1905, the state of Illinois started the establishment of agricultural education departments (Davis, 1912). Most of the new departments began their work in 1908 and 1909 which according to Davis was due in part to a provision of the Nelson amendment of 1908 whereby:

> Say colleges may use a portion of this money (referring to additional appropriation) for providing courses for special preparation of instructors for teaching the elements of agriculture and mechanic arts (Davis, 1912, p. 43).

By 1923, work designed to train teachers of agriculture was offered in the land-grant colleges of forty-eight states, with separate institutions for the training of colored teachers in the southern states (Mayberry, 1991) and a few other duplications, bringing the number of institutions receiving federal aid as teacher training institutions in agriculture to 78 (Broyles, 1926).

With broadened purposes in secondary education and a facilitated expansion of offerings including agriculture, there was a point where special provisions were required for a steady supply of teachers (Cardozier, 1967). Supported by the Smith-Hughes Act of 1917, all the land-grant colleges and universities designated as institutions in which this work would be undertaken practically initiated such programs. Cardozier indicated that by 1919 most of the states reported definite provisions for the education of teachers in agriculture. By 1967, there were 76 active teacher education programs in the U. S with programs in Hawaii, Maine and Kentucky State colleges inactivated but programs at Rutgers reactivated.

The new departments of agricultural education attracted a wide variety of staff with diverse educational background and experience. According to Cardozier (1967) these included drafted professors of agricultural subjects and secondary school teachers of agriculture (a minority of them possessed graduate degrees with emphasis in psychology or education). As the profession grew, there existed the need for the establishment of periodic national and regional conferences. These conferences established by the Federal Board for Vocational Education contributed to the overall development of a cohesive group with united purposes (Cardozier, 1967).

This century (the 20th century) has produced great advances in the quality of teacher education programs in the United States. In 1995, just as it was in 1920, teacher education in agriculture was one of the few areas in which teachers were prepared in the land-grant colleges. However, with the continued increase in the demand for agriculture teachers, these programs are relatively stronger in position, especially with special support. Quoting True (1937), Cardozier (1967) stated that:

> The assumption of the duty of training teachers for secondary schools has affected the agricultural colleges favorably in several ways. It has greatly broadened the interest of the college authorities and teachers in the problems of agricultural education and the application of pedagogical principles of the teaching of agriculture. It has opened a new vocational outlet for considerable number of graduates from the agricultural courses in these colleges (Cardozier, 1965, p. 8).

The department of agricultural education also made tremendous progress through its cooperative extension activities. Scott (1970, p.34) indicated these activities made "the agricultural college would be so many lights, in which would shed their rays not only upon those who are brought into immediate contact [with it], but diffuse their beams abroad, illuminating remote places, finding their way into obscure recesses."

Summary

In the review of literature chapter of this study, the importance of the development of graduate programs in agricultural education and national development were elucidated. The vital functions of the cooperative extension service in transforming rural life were presented. Also outlined were the effect of legislation on agricultural education in the United States. The first and second Morrill Land-Grant Acts, Hatch Act, Smith-Lever Act, Smith-Hughes Act and the Vocational Education Act with its subsequent amendments and their effects on agricultural education and information dissemination in the United States were presented. The history of the department of agricultural education was also presented. This section ended with a review of the influence and effect of agricultural education on national development. The factors presented here have serious implications in the chronicles of agricultural education programs' development.

CHAPTER III

METHODS AND PROCEDURES

This chapter describes the methods and procedures employed by the researcher in the conduct of this study.

Survey instruments included mail-questionnaires, letters, e-mail, fax and phone calls. Previously gathered data was sent back to the institutions for verification, correction if necessary, and updating.

The purpose of this study was to identify and document agricultural/extension graduate programs in colleges/universities in the United States. Specific objectives were established to meet the purposes of this study. Also an instrument was designed and a population determined for the study data collection process. Data were collected using mail-questionnaire, fax, e-mail and telephone.

Institutional Review Board (IRB)

There are rules and regulations established at both federal and institutional levels which guide the conduct of research using human subjects. At Oklahoma State University, the policy required all research studies in biomedical, social, and behavioral research be reviewed before the investigator proceeds with the study. This was a built-in

system to protect the right and welfare of human subjects. This study received the permission and approval of the IRB after the necessary and required scrutiny. This research was assigned the research project number: AG-96-002.

Population of the Study

The study population consisted of all agricultural/extension education programs conducting, or which had conducted, graduate programs in the United States. To determine the institutions that made up the population, the government publication 1862 Land-Grant Colleges and Universities and the Directory of Teacher Educators in Agriculture 1995-1996 were used.

Seventy-six institutions were identified to be conducting or to have conducted programs in agricultural/extension education. However, 67 institutions formed the core of this study as nine were eliminated because they either did not respond to the initial identification survey or indicated they do not offer graduate programs at their institutions in agricultural/extension education.

Fifty-nine responses (88.06 percent of the institutions formed the core for the study) with usable data returned. Non-respondents were 11.94 percent or 8 institutions. Of the 8 non-respondents, 4 (50 percent) participated in a similar study in 1990 thus providing basic data usable in this study. In overall, 63 institutions (94.03 percent) provided usable data for this study.

Development of the Instrument

The instrument used in this study was developed by Bell (North Carolina A & T), Hash (Clemson University), and Key (Oklahoma State University). A draft copy of the questionnaire was developed at the Southern Regional Research Conference in Agricultural Education at Lexington, Kentucky in March of 1991. The book on the History of Agricultural Education, currently proposed by Gary Moore, primarily influenced the questionnaire content. Ake (1993) used the questionnaire in the first study. With minor adjustments by the author and his committee, the same questionnaire was used in this study. The questionnaire was designed to gather information on the date of establishment of institutions, type of institutions, when graduate programs started, when graduate programs started in agricultural education, program administration, program location, year graduate degrees were first awarded, the number of graduate degrees awarded in agricultural education by year and by type the focus of the graduate programs, current enrollment status, placement positions of graduates of the programs, and other demographic characteristics of the institutions' programs. There were 11 close-ended type questions in the questionnaire. The ability to utilize nominal, ordinal and interval scales was built into the survey instrument.

Collection of Data

Data gathered from previous the study were sent back to the same departments and/ or institutions. A mailed questionnaire was sent to other institutions believed to be conducting programs in agricultural education but who did not participate in Ake's 1990

study on the Historical Aspects of Graduate Programs in Agricultural Education in the United States. In some cases, however, the uncertainty about the department, whether or not it still conducted a graduate program in agricultural education, was resolved by sending a questionnaire to another person of authority in the college. In an attempt to identify other institutions, a separate questionnaire was designed for that purpose. Departments are merging with others and in some cases programs are phasing out. All departments identified were surveyed using mail-questionnaire, fax, e-mail or telephone.

First contact was initiated on September 6, 1995. To facilitate contact with as many respondents as possible, the author of this study employed various approaches including regular mail (17 mailings), e-mail (46 mailings) and fax (13 mailings). Survey instruments were forwarded to institutions that participated in a similar study in 1990 while a separate questionnaire designed for identification purposes was sent to others believed to have graduate programs. Both instruments carried an introductory cover letter explaining the importance of adequate institution and program representation in the History Book on Agricultural Education about to be written by a practitioner of the profession.

On September 22 & 23, 1995, a follow-up by mail, e-mail, and fax was initiated to reach non-respondents and to offer help if needed. There were 28 mailings by e-mail, 38 mailings by fax and 10 mailings by regular mail. Instruments were resent to some contacted initially by e-mail because of the problems of inscription associated with down loading documents not sent as text files. Questionnaires were also sent to institutions identified through a specially designed identification instrument.

On October 6 & 13, 1995, a reminder note was sent to the non-respondents in which another offer of help was extended. Nineteen fax messages and 11 e-mails were forwarded to non-respondents. Finally, on October 19, 1995, the last reminder of 23 fax messages and 3 mail messages were sent before contact by telephone commenced October 26th and through November 4th. There were 25 telephone contacts during this period in the data gathering process. Contacts by telephone, e-mail, and re-faxing of questionnaires continued until December 7, 1995, when data gleaned from the last eight were incorporated into the study.

Analysis of the Data

Descriptive statistics and Chi Square Tests were used to analyze data on degrees awarded in M.S., M.Ag., M.Ed., Ed.S., Ed.D., Ph.D. and graduate enrollments and assistantships/fellowships for 1990 and 1995 . The database created from the study instruments was arranged in descending order by date, type and number of degrees awarded. This arrangement presented a visually analyzable and interpretable picture of the data base. The frequencies, ranges, means, modes, median, ratios, averages, percentages and standard deviations were also computed.

Tables were drawn using 20 and 50 year intervals showing frequency distribution and percentages for institutional establishment by date, type of institution, date graduate programs started at institution and in agricultural education, and program administrative unit and location. Periodic totals were also computed by institution, degree type, number of institutions offering the different degrees, the percentage of total institutions, and the number of graduates and types of degree in the various time periods. Tables were also

drawn to highlight the top ten institutions awarding the greatest number of degrees for the period. To verify data for validity and reliability, other historical sources were utilized.

The Degree Concentration Ratios (^{D}CR) were computed for the top 10, 5, 3, 2, and 1 institutions by types of degree. The Degree Concentration Ratios ($^{D}CR_{10,5,3,2,1}$) is the proportion of the total degrees awarded (by type) accounted for by 10, 5, 3, 2, and 1 institution in that category of degree awarded. $^{D}CR_{MS10,5,3,2,1}$ is the Degree Concentration Ratios for the Top 10, 5, 3, 2, and top institution in the study. ^{D}CR values are between 0 to 1.00, with zero representing no degree concentration and 1 representing the highest degree of concentration.

Program focus was analyzed by rank order with 5 as "Very Strong" and 1 for "Very Low" emphasis. Comparison was made between program history and 1990-95 data to determine the direction and focus of the profession.

Enrollments and assistantships/fellowships were also analyzed using averages and percentages for the various degree types and by institutions, and then comparisons were made between the 1990 and 1995 data. Ratios of total number of enrollments to assistantships/fellowships were determined. The Chi Square Test was utilized to confirm if there were statistically significant differences between the number of enrollments and assistantships/fellowships for 1990 and 1995.

Furthermore, admission requirements were described using different scales based on Grade Point Average (GPA), Graduate Record Examination (GRE), Miller Analogy Test (MAT), Graduate Management Admission Test (GMAT) and other scores, degree type, and number of institutions. Work experience, residency, program and thesis

requirements were analyzed using years of experience and semester hour by degree type in a descending order of magnitude by institution. Range was applied to semester hours for the thesis requirements.

CHAPTER IV

PRESENTATION, ANALYSIS OF DATA AND RESULTS

Introduction

This chapter presents the findings from the questions asked the respondents involved in this study. The study was aimed at highlighting the historical aspects and development of graduate programs in agricultural/extension education in the United States. In addition, the study also identified the top ten institutions in this field according to the number of graduate degrees awarded.

Statistical Data and Findings

Questions 1 through 5 of the survey instrument were vital to establishing the basis for the study. The responses are presented in Table 1. Some of the information was taken from Brunner (1962) and Tolliver (1960) as indicated by the notations "B" and "T". The information in Table 1 is more specifically represented in Tables 2 through 7.

It was shown in Table 2 that 43 (68 percent) of the responding institutions indicated they were 1862 land-grant institutions. Six (9.52 percent) were 1890 land-grant, whereas 14 (22.22 percent) were non land-grant. More than 75 percent of the institutions involved in this study were land-grant colleges and universities.

TABLE 1

STATE, INSTITUTION, YEAR FOUNDED, TYPE, YEAR GRADUATE PROGRAM BEGAN, YEAR AGED GRADUATE PROGRAM BEGAN, ADMINISTRATIVE UNIT, AND DEPT. LOCATION

STATE	INSTITUTION	YEAR FOUNDED	TYPE	INST GRAD PROG BEGAN	AGED GRAD PROG BEGAN	AGED GRAD PROG ADMIN	LOCATION AGED DEPT
AL	AUBURN UNIV	1856	1890	1857	1928	GRAD COL	AG COL
AR	ARKANSAS STATE	1909	NON L-G	1955	1965	GRAD COL	AG COL
AR	UNIV ARKANSAS	1871	1862	1935	1983	GRAD COL	AG COL
AZ	UNIV ARIZONA	1885	1862	1898	1949	GRAD COL	AG COL
CA	CAL POL S.U.-POM.	1901	NON L-G	1948	1948	AG COL	AG COL
CA	CAL POL S.U.-SLO	1938	NON L-G	1976	1976	AG COL	AG COL
CA	UNIV CAL-DAVIS	1905	1862	1945	1945	GRAD COL	AG COL
CO	COLORADO STATE	1870	1862	1857	1928	GRAD COL	APPL H.S
CT	UNIV CONNECTICUT	1881	1862	194I	1941	GRAD COL	COL ED
FL	UNIV FLORIDA	1853	1862	1904[B]	1917	GRAD COL	AG COL
GA	UNIV GEORGIA	1785	1862	1910	1964	GRAD COL	COL ED
IA	IOWA STATE UNIV	1858	1862	1869	1918	GRAD COL	AG COL
ID	UNIV IDAHO	1889	1862	1925	1925	GRAD COL	AG COL
IL	S. ILLINOIS UNIV	1869	NON L-G	1944	1960	GRAD COL	AG COL
IL	UNIV ILLINOIS	1867	1862	1870	1935	GRAD COL	AG COL
IL	W. ILLINOIS UNIV	1899	NON L-G	1967	1967	GRAD COL	BUS & TECH
IN	PURDUE UNIV	1869	1862	1885[B]	1924	GRAD COL	COL ED
KS	KANSAS STATE U.	1863	1862	1869[B]	1911[T]	GRAD COL	AG COL
KY	UNIV KENTUCKY	1865	1862	1874[B]	1926	GRAD COL	AG COL
KY	W. KENTUCKY U.	1906	NON L-G	1931	1968	GRAD COL	SC & TECH
LA	LOUSIANA S. U.	1853[B]	1862	1868[B]	1909[T]	GRAD COL	AG COL
LA	SOUTHERN UNIV	1880	1890	1957	1957	GRAD COL	COL ED
MA	UNIV MASS	1863	1862	1892	1976	GRAD COL	COL ED
MD	UNIV MD-E.SHORE	1886	1890	1978	1978	GRAD COL	AG. SC
MD	UNIV MARYLAND	1856	1862	1917	1928	GRAD COL	AG COL
MI	MICHIGAN S. U.	1855	1862	1864	1946	GRAD/ADM	AG COL
MN	UNIV MINNESOTA	1851	1862	1878[B]	1918	GRAD COL	COL ED
MO	NW MISSOURI S. U.	1905	NON L-G	1958	1967	GRAD COL	AG COL
MO	UNIV MISSOURI	1839	1862	1846	1923	GRAD COL	ED/AG
MS	MISSISSIPPI STATE	1878	1862	1883	1949	GRAD COL	AG COL
MT	MONTANA S. U.	1893	1890	1902	1938	GRAD COL	AG COL
NC	NC A&T STATE U.	1891	1890	1939	1939	GRAD COL	AG COL
NC	NC STATE UNIV	1889	1862	1891	1927	GRAD COL	AG COL
ND	N. DAKOTA S. U.	1862	1862	1895	1924	GRAD COL	AG 25% ED 75%
NE	UNIV NEBRASKA	1869	1862	1886	1928	GRAD COL	AG COL
NH	NEW HAMPSHIRE	1866	1862	1896	1962	GRAD COL	AG COL
NJ	RUTGERS UNIV	1864	1862	1964	1964	GRAD COL	AG COL
NM	UNIV NEW MEXICO	1888	1862	1956	1964	GRAD COL	AG COL
NY	CORNELL UNIV	1865	1862	1870[B]	***	GRAD COL	AG COL
OH	OHIO STATE	1870	1862	1878	1920	GRAD COL	AG COL
OK	OKLAHOMA STATE	1890	1862	1917	1929	GRAD COL	AG COL
OR	OREGON STATE	1869	1862	1882	1948	GRAD COL	AG COL
PA	PENN STATE	1855	1862	1861	1911	GRAD COL	AG COL
RI	UNIV RHODE ISLAND	1892	1862	***	1965	GRAD COL	AG COL
SC	CLEMSON UNIV	1889	1862	1924	1946	GRAD COL	AG COL
SD	S. DAKOTA S. U.	1886	1862	1891	1928	GRAD COL	COL ED
TN	UNIV TENN- MARTIN	1927	1862	1967	1977	COL ED	AG COL
TN	TENNESEE S. U.	1912	1890	1941	1944	GRAD COL	AG&H.EC
TN	UNIV TENN-KNOX	1794	1862	1821	1925AGED;1957EXT	GRAD COL	AG COL
TN	TENN TECH UNIV	1915	NON L-G	1958	1985	GRAD COL	AG COL
TX	SAM HOUSTON S. U.	1879	NON L-G	1936	1942	ED & APP. SC	ED & APL. SC
TX	SW TEXAS S. U.	1899	NON L-G	1981	1976	GRAD COL	APL ARTS&TEC
TX	TARLETON S. U.	1899	NON L-G	1971	1986	GRAD COL	AG COL
TX	TEXAS A&M UNIV	1876	1862	1888	1929	GRAD COL	AG COL
TX	TEXAS TECH UNIV	1927	NON L-G	1927	1938	GRAD COL	AG COL
UT	UTAH STATE UNIV	1888	1862	1950	1955	GRAD COL	AG COL
VA	VPI & STATE UNIV	1872	1862	1952	1952	GRAD COL	AG COL
WA	WASHINGTON S. U.	1892	1862	1902	1922	GRAD COL	AG COL
WI	UW - MADISON	1848	1862	1880[B]	1935MSED;'50MSAG	GRAD COL	AG & F.R & CON. SC
WI	UW-PLATTEVILLE	1866	NON L-G	1965	1965	GRAD COL	AG COL
WI	UW-RIVER FALLS	1874	NON L-G	1960	1965	GRAD COL	AG COL
WV	W. VIRGINIA UNIV	1867	1862	1928	1948	AG & FRTRY	AG COL
WY	UNIV WYOMING	1886	1862	1934	1960	GRAD COL	COL ED

Sources: [B]H.S. Brunner (1962); [T]W.E. Tolliver (1960).

TABLE 2

DISTRIBUTION OF TYPES OF INSTITUTIONS

Type of Institution	Frequency (N)	Percentage (%)
1862 land-grant	43	68.25
1890 land-grant	6	9.52
Non land-grant	14	22.22
Total	63	100.00

Institution Establishment

From Table 3, indications were that none of the responding institutions existed until the earlier half of the nineteenth century. A majority of the institutions (36 or 57.14 percent) were established by the latter half of the nineteenth century in America. Twenty-four (38.10 percent) were established during the later to earlier part of the twentieth century. Since the mid 1930's only one institution was established, the California Polytechnic State University at San Luis Obispo.

TABLE 3

DISTRIBUTION OF INSTITUTION ESTABLISHMENT DATES

Period Institutions Established	Frequency (N)	Percentage (%)
1785-1835	2	3.17
1835-1885	36	57.14
1885-1935	24	38.10
1935-present	1	1.59
Total	63	100.00

As revealed in Table 4, graduate programs in the responding institutions were initiated in 1821, however most programs were established between 1861 and 1980. Program establishment peaked twice, first between 1861- 1880 and again between 1941-1960. Thirteen (20.63 percent) institutions established graduate programs during each of the peak periods. The University of Tennessee reported the establishment of the first graduate program in 1821, and since then, graduate programs have progressively been established in the responding institutions across the country. Between 1822 and 1840, no graduate program was established. After 3 programs began during the 1841 to 1860 period, program proliferation increased, and by 1960 a total of 51 (80.95 percent)

graduate programs had been established in the colleges and universities involved in this study. Program establishment, however, slowed to a halt in 1976 when the last program was established at California Polytechnic State University at San Luis Obispo.

TABLE 4

DISTRIBUTION OF DATES OF ESTABLISHMENT OF INSTITUTIONAL GRADUATE PROGRAMS

Graduate Program Started	Institutional Frequency (N)	Percentage (%)
Before 1821	0	0.00
1821-1840	1	1.51
1841-1860	3	4.76
1861-1880	13	20.63
1881-1900	11	17.46
1901-1920	6	9.52
1921-1940	8	12.70
1941-1960	13	20.63
1961-1980	7	11.11
1981-present	0	0.00
Not Available	1	1.59
Total	63	100.00

The data in Table 5 revealed the sequence of agricultural/extension graduate program establishment in agricultural/extension education across the surveyed institutions. The first graduate program in agricultural/extension education, as reported

by responding institutions in this study, started in 1917 at the University of Florida. However, other sources indicated that the first master of science degree awarded in agricultural education was by the University of California at Berkeley in 1912 (Broyles, 1926). Between 1921 and 1940, agricultural education graduate programs proliferated with a peak establishment of 19 (30.16 percent) additional programs after a slow growth of only 7 (11.11 percent) programs previously. Program initiation, however, continued through 1980 as 33 other programs (50.79 percent) were established. Since then, however program development came to a halt in 1986 with the last program established at Tarleton State University.

TABLE 5

DISTRIBUTION OF ESTABLISHMENT DATES OF GRADUATE PROGRAMS IN AGRICULTURAL/EXTENSION EDUCATION

Graduate Program in Ag/Ext Ed Started	Institutional Frequency (N)	Percentage(%)
Before 1900	0	0.00
1901-1920	7	11.11
1921-1940	19	30.16
1941-1960	16	25.39
1961-1980	17	26.98
1981-present	3	4.76
Not Available	1	1.59
Total	63	100.00

There have been some reductions in graduate programs, too. The University of Maryland phased out its agricultural education program entirely in 1990. At the University of Tennessee-Martin and at Mississippi State University, the graduate programs have been phased into the vocational education graduate program. At Tennessee Technological University, they offer an agricultural education emphasis through the college of education. Other programs are being merged with other departments and colleges, thus losing their "major" or "minor" status.

The data in Table 6 showed the information about agricultural/extension education graduate programs and their administrative units. The majority (57 or 90.48 percent) of the programs was administered through the Graduate College (See Table 1 also). Less than 4 percent of the respondents indicated programs were administered through the College of Agriculture in their respective institutions. In one institution each, the program was administered through the College of Agriculture and Forestry, College of Education and Applied Science and School of Education, respectively. The program was administered jointly by the Graduate College and the College of Administration at Michigan State University.

The data in Table 7 showed the locations of agricultural/extension education departments across the surveyed institutions. Forty-six departments (73.02 percent) indicated they were located in the College of Agriculture. About 13 percent (8 departments) were located in the College of Education, while at the University of Missouri and North Dakota State University they were jointly located in both colleges. In other instances, 7 departments (11.11 percent) were located in schools and colleges other than agriculture and education (See Table 1). The data in Table 8 showed the year

graduate degrees were first awarded in agricultural/extension education in each of the responding institutions in the United States.

TABLE 6

DISTRIBUTION OF UNITS ADMINISTERING AGRICULTURAL/EXTENSION EDUCATION GRADUATE PROGRAMS

College/School	Frequency (N)	Percentage %
Graduate College	57	90.48
College of Agriculture	2	3.17
College of Agriculture & Forestry	1	1.59
College of Education & Applied Science	1	1.59
School of Education	1	1.59
Joint Graduate College/College of Admin.	1	1.59
Total	63	100.00

TABLE 7

DISTRIBUTION OF UNITS HOUSING AGRICULTURAL/ EXTENSION EDUCATION DEPARTMENTS

Location	Institutional Frequency (N)	Percentage (%)
College of Agriculture	46	73.02
College of Education	8	12.70
Joint College of Agric. & Education	2	3.17
College of Applied Human Science	1	1.59
College of Business & Technology	1	1.59
College of Sceince & Technology	1	1.59
College of Agriculutre & Home Economics	1	1.59
College of Education & Applied Science	1	1.59
College of Applied Arts & Technology	1	1.59
College of Agriculture & Forest Resource & Consumer Science	1	1.59
Total	63	100.00

TABLE 8

YEAR GRADUATE DEGREES FIRST AWARDED IN AGRICULTURAL/ EXTENSION EDUCATION

STATE	INSTITUTION	M.S.	M.Ag.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other
AL	AUBURN UNIV			1928	1963	1972		
AR	ARKANSAS STATE	1966	1975					
AR	UNIV ARKANSAS	1991		1983	1983	1983		
AZ	UNIV ARIZONA	1953		1928				1949 M.AgEd.
CA	CAL POL S.U.-POM.	1963						
CA	CAL POL S.U.-SLO	1977						
CA	UNIV CAL-DAVIS			1945				
CO	COLORADO STATE			1928	1963	1972		
CT	UNIV CONNECTICUT			1947	1955		1953	
FL	UNIV FLORIDA	1918	1918					
GA	UNIV GEORGIA		1964	1968	1973	1968		
IA	IOWA STATE UNIV	1918					1968	
ID	UNIV IDAHO	1925						
IL	S. ILLINOIS UNIV	1960					1975	
IL	UNIV ILLINOIS	1935		1930	1940	1949	1954	
IL	W. ILLINOIS UNIV	1968						
IN	PURDUE UNIV	1925					1928	
KS	KANSAS STATE U.							
KY	UNIV KENTUCKY							
KY	W. KENTUCKY U.			1969				
LA	LOUSIANA S. U.							
LA	SOUTHERN UNIV			1959				
MA	UNIV MASS			1977		1979		1987 Cert. AgSc.
MD	UNIV MD-E.SHORE	1984						
MD	UNIV MARYLAND	1930					1971	
MI	MICHIGAN S. U.	1946	1952	1942	1966	1951	1951	1946 M.A.
MN	UNIV MINNESOTA	1920		1969			1928	
MO	NW MISSOURI S. U.	1968		1970				
MO	UNIV MISSOURI			1937	1957	1938	1931	1923 M.A.
MS	MISSISSIPPI STATE		1950	1949	1973	1981	1989	
MT	MONTANA S. U.	1939						
NC	NC A&T STATE U.	1941						
NC	NC STATE UNIV	1927	1995	1972	1972	1972		
ND	N. DAKOTA S. U.	1926						
NE	UNIV NEBRASKA	1930						
NH	NEW HAMPSHIRE							M.O.E.
NJ	RUTGERS UNIV			1960		1964		
NM	UNIV NEW MEXICO							1964 M.A.
NY	CORNELL UNIV							
OH	OHIO STATE	1927		1993			1936	
OK	OKLAHOMA STATE	1931	1985		1975	1955		
OR	OREGON STATE	1948	1950	1950		1950	1950	
PA	PENN STATE	1914	1981	1941		1942	1927	
RH	UNIV RHODE ISLAND							1966 M.A.
SC	CLEMSON UNIV	1950				1986		1957 M.AgEd.
SD	S. DAKOTA S. U.	1930		1958				
TN	UNIV TENN- MARTIN	1978						
TN	TENNESSEE S. U.	1944						
TN	UNIV TENN-KNOX		1928Ag.Ed					1959Ext. Ed.
TN	TENN TECH UNIV							MA.
TX	SAM HOUSTON S. U.			1942				
TX	SW TEXAS S. U.			1981				
TX	TARLETON S. U.	1994						1986 MST.
TX	TEXAS A&M UNIV	1964	1972	1931		1991	1985	
TX	TEXAS TECH UNIV	1937						
UT	UTAH STATE UNIV	1956				1975		
VA	VPI & STATE UNIV	1952			1971	1971		
WA	WASHINGTON S. U.	1922						
WI	UW - MADISON	1935					1950	
WI	UW-PLATTEVILLE							1966 MST.;1969 M.S. Ag. Ind.; 1979 M.S-Ed.
WI	UW-RIVER FALLS	1966						1967 M. A rts in Ag.
WV	W. VIRGINIA UNIV	1944						
WY	UNIV WYOMING	1961			1974	1969	1984	

The data in Table 9 depicted the frequency of institutions by time periods when various graduate degrees were first awarded in agricultural/extension education. The Master of Science (M.S.) degree was awarded by 40 (63.49 percent) of the surveyed institutions for this study. According to respondents of the study, the first Master of Science (M.S.) degree in agricultural/extension education was awarded by Pennsylvania State University in 1914. However, as previously stated, a study by Broyles (1926) indicated the award of a M.S. degree in agricultural education by the University of California at Berkeley in 1912. The number of institutions beginning to award the M.S. degree more than doubled from four between 1910-1920 to nine the following decade. It leveled off considerably after 1970 when a decline began from seven in the preceding decade to two during the 1971-1980 period.

The least awarded degree in agricultural/extension education was the Master of Agriculture (M.Ag.). The M.Ag. degree was first awarded by the University of Florida in 1918, but it was not until four decades later that two other institutions adopted the program. Currently eight institutions award the Master of Agriculture degree.
The Master of Education (M.Ed.) degree was first awarded between 1921-1930 by four institutions. The M.Ed. award soared and peaked during the following two decades with an additional seven institutions awarding the degree for the first time between 1941-1950. The succeeding decades experienced a declining trend. Twenty-six institutions award the M.Ed. as revealed by the study. The M.Ed. degree was first awarded by the University of Arizona, Auburn University and Colorado State University in 1928.

TABLE 9

DISTRIBUTION OF INSTITUTIONS FIRST AWARDING TYPES OF DEGREES BY YEARS

Years Degree First Awarded	Number of Institutions M.S.	M.Ag.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other	Total
1910-1920	4	1	0	0	0	0	0	5
1921-1930	9	0	4	0	0	3	1	17
1931-1940	5	0	2	1	1	2	0	11
1941-1950	6	0	7	0	4	2	2	21
1951-1960	4	1	4	2	2	3	2	18
1961-1970	7	1	4	3	3	1	5	24
1971-1980	2	2	2	6	6	2	1	21
1981-Present	3	3	3	1	4	3	2	19
Total	40	8	26	13	20	16	13	136

The Specialist in Education (Ed.S.) degree was not awarded until 1940 and since then has slowly been initiated by agricultural/extension education departments into their degree programs across the surveyed institutions. The University of Illinois first awarded this degree in 1940. Thirteen institutions currently offer courses leading to an Ed.S. degree.

The Doctor of Education (Ed.D.) degree was not awarded until very late in the 1930's. The University of Missouri first awarded this degree in 1938. It has since then progressively become more popular. The largest number of institutions awarding the Ed.D. for the first time peaked during the 1971-1980 period when 6 new programs were initiated. Currently, 20 institutions offer courses leading to the award of the degree of Doctor of Education as revealed by the study.

The Doctor of Philosophy (Ph.D.) degree was first awarded in 1927 by Pennsylvania State University and since then has attracted moderate popularity within the agricultural/ extension education discipline. The number of institutions awarding the Ph.D. degree has remained fairly steady each decade throughout the study period. After the initial award in 1927 by Penn State, two other institutions, the University of Minnesota and Purdue, began conferring the degree in 1928. A total of 16 institutions presently award this degree in the United States.

Other types of degrees and certificates were also awarded by the departments. The dominant degrees/certificates in this category were the Master of Arts in Agriculture (M.A.Ag.), the Master of Agricultural Education (M.Ag.Ed.), the Master of Science in Teaching (MST.), the Master of Extension Education (MOE.), the Master of Science in Agricultural Industries, the Master of Science in Education and the Certificate of Agricultural Sciences. A total of 13 institutions award these other types of degrees and certificates within the profession.

The data in Table 10 revealed institutions with the most degrees awarded in the various degree categories in the different time periods of the study. Between 1917-1937, only three types of graduate degrees (M.S., M.Ed., and Ph.D.) were awarded in agricultural/extension education in the United States. The awarding of the Ed.S. and Ed.D. degrees started after 1937 (See Table 8). The M.Ag. degree was first awarded in 1918 by the University of Florida though it did not show in Table 10 because data on the number of program graduates were not reported in the M.Ag. degree category for the period (See Table 8).

TABLE 10

DISTRIBUTION OF THE NUMBER AND TYPES OF GRADUATE DEGREES BY PERIOD BY THE INSTITUTIONS AWARDING THE GREATEST NUMBER OF DEGREES

Period	Type	Institution	No. Awarded	% of Total	Period Total
1917-1937	M.S.	Univ. Missouri	49	34.03	144
	M.Ed.	Univ. Missouri	2	100.00	2
	Ph.D.	Univ. Minnesota	2	50.00	4
1937-1957	M.S.	Oklahoma State	128	15.82	809
	M.Ag.	Michigan State	8	57.14	14
	M.Ed.	Sam Houston S.U.	446	46.51	959
	Ed.S.	Univ. Connecticut	5	100.00	5
	Ed.D.	Univ. Illinois	14	35.89	39
	Ph.D.	Ohio State	32	45.71	70
	Other	Mississippi State	130	63.73	204
1957-1977	M.S.	Oklahoma State	372	14.27	2,606
	M.Ag.	Clemson Univ.	114	67.06	170
	M.Ed.	Sam Houston S.U.	462	30.82	1,499
	Ed.S.	Mississippi State	45	60.81	74
	Ed.D.	Oklahoma State	88	30.03	293
	Ph.D.	Ohio State	175	41.37	423
	Other	Mississippi State	182	37.07	491
1977-1990	M.S.	Ohio State	327	9.73	3,360
	M.Ag.	Texas A&M	130	24.71	526
	M.Ed.	Univ. Missouri	262	22.34	1,173
	Ed.S.	Mississippi State	41	30.15	136
	Ed.D.	Oklahoma State	69	31.94	216
	Ph.D.	Ohio State	120	21.94	547
	Other	Mississippi State	184	44.44	414
1990-1995	M.S.	Michigan State	74	7.12	1,040
	M.Ag.	Clemson Univ.	59	40.97	144
	M.Ed.	Univ. Georgia	132	28.39	465
	Ed.S.	Univ. Georgia	41	63.08	65
	Ed.D.	Oklahoma State	24	46.15	52
	Ph.D.	Ohio State	66	22.15	298
	Other	Tarleton S.U.	90	56.25	160

The University of Missouri awarded the most M.S. degrees in the 1917-1937 period accounting for 49 of 144 (34.03 percent) of the total M.S. degrees awarded. During the 1937-57 and 1957-77 periods Oklahoma State awarded the most M.S. degrees, conferring 128 of 809 (15.82 percent) and 372 of 2,606 (14.27 percent) respectively for the two periods. During 1977-1990, Ohio State awarded the most degrees in this category, awarding 327 of 3,360 (9.73 percent). For the 1990-1995 period, Michigan State University awarded the most, 74 of 1,040 M.S. degrees (7.12 percent).

Michigan State and Texas A&M awarded the greatest number of M.Ag. degrees in the 1937-57 and 1977-90 periods conferring 8 of 14 (57.14 percent) and 130 of 526 (24.71 percent) respectively. For 1957-77 and 1990-95, Clemson awarded the greatest number of M.Ag. degrees with 114 of 170 (67.06 percent) and 59 of 144 (40.97 percent) respectively.

Sam Houston State University awarded an unusually large number of M.Ed. degrees during 1937-57 and 1957-77 periods. Sam Houston awarded 446 of 959 (46.51 percent) M.Ed. degrees in the 1937-57 period. In the 1957-77 period, 462 of the 1,499 (30.82 percent) M.Ed. degrees were awarded by Sam Houston.

All five Ed.S. degrees conferred in the 1937-57 period were awarded by the University of Connecticut. For the periods 1957-77 and 1977-90, Mississippi State awarded the greatest number of Ed.S. degrees, conferring 45 of 74 (60.81 percent) and 41 of 136 (30.15 percent) respectively. For the 1990-95 period, Georgia awarded the greatest number of Ed.S. degrees with 41 of 65 (63.08 percent).

The University of Illinois awarded the most Ed.D. degrees during the 1937-57 period conferring 14 of 39 (35.89 percent). Since then Oklahoma State has awarded the greatest number in each time period, awarding 88 of 293 (30.03 percent) total for the 1957-77 period. In the 1977-90 period, Oklahoma State awarded 69 of 216 (31.94 percent) and in 1990-95 awarded 24 of the 52 (46.15 percent).

Minnesota awarded two of the four Ph.D. degrees awarded in 1917-1937 period. Ohio State has awarded the greatest number of Ph.D. degrees beginning with 1937-57 period. For the 1937-57, 57-77, 77-90, and 90-95 periods, Ohio State awarded 32 of 70 (45.71 percent), 175 of 423 (41.37 percent), 120 of 547 (21.94 percent), and 66 of 298 (22.15 percent), respectively.

In the Other degree award category, Mississippi State awarded the greatest number from the 1937 to 1990 periods. Their Other degree was the Master of Extension Education. Ninety of 160 (56.25 percent) total degrees awarded in this category for the 1990-95 period were MST degrees awarded by Tarleton.

The data in Table 11 listed the ten institutions awarding the greatest number of total degrees during the various time periods for the study.

TABLE 11

DISTRIBUTION OF TOTAL DEGREES AWARDED BY PERIOD FOR THE 10 INSTITUTIONS WITH THE GREATEST NUMBER AWARDED

Period	Institutions	Degrees Awarded	Percent of Total
1917-1937	Univ. Missouri	57	36.77
	Ohio State	24	15.48
	Univ. Minnesota	20	12.90
	Iowa State	12	7.74
	South Dakota State	10	6.45
	Univ. Nebraska	9	5.81
	Univ. Idaho	7	4.52
	North Carolina State	6	3.87
	Oklahoma State	6	3.87
	Washington State	4	2.58
	Total for Top 10	155	100.00
	Total for Period	155	100.00
1937-1957	Sam Houston S.U.	446	19.80
	Mississippi State	237	10.52
	Univ. Missouri	155	6.88
	Penn State	143	6.35
	Oklahoma State	130	5.77
	Texas Tech	123	5.46
	Ohio State	120	5.33
	Iowa State	116	5.15
	Univ. California-Davis	109	4.84
	Michigan State	101	4.48
	Total for Top 10	1,680	74.60
	Total for Period	2,252	100.00
1957-1977	Ohio State	489	9.99
	Sam Houston S.U.	462	8.50
	Oklahoma State	461	8.48
	Mississippi State	318	5.85
	Univ. Missouri	257	4.73
	Univ. Minnesota	245	4.51
	Michigan State	231	4.25
	Univ. Tennessee	228	4.19
	Penn State	208	3.83
	Iowa State	191	3.51
	Total for Top 10	3,090	56.86
	Total for Period	5,434	100.00
1977-1990	Ohio State	447	7.02
	Mississippi State	336	5.27
	Univ. Missouri	336	5.27
	Texas A&M	309	4.85
	Cal Poly State-Pom.	308	4.83
	Oklahoma State	231	3.63
	Cornell Univ.	228	3.58
	Iowa State	221	3.47
	Michigan State	210	3.29
	Penn State	184	2.89
	Univ. Kentucky	180	2.82
	Kansas State	180	2.82
	Total for Top 10	3,170	49.74
	Total for Period	6,372	100.00

TABLE 11 (Continued)

Period	Institution	Degrees Awarded	Percent of Total
1990-1995	Univ. Georgia	202	9.02
	Ohio State	136	6.07
	Texas A&M	106	4.73
	Cornell Univ.	101	4.51
	Iowa State	97	4.33
	Michigan State	95	4.24
	Tarleton S.U.	90	4.02
	Oklahoma State	86	3.84
	Univ. Minnesota	81	3.62
	Mississippi State	73	2.26
	Total for Top 10	1,067	47.66
	Total for Period	2,239	100.00

In the 1917-37 period, the University of Missouri awarded the most degrees, conferring 57 of 155 or 36.77 percent. Ohio State awarded the next greatest number with 24 (15.48 percent). The University of Minnesota awarded the third greatest number with 20 (12.90 percent) of the degrees awarded for the period. The Top 10 represented 100 percent of degrees awarded during that time period.

In 1937-57, Sam Houston, Mississippi State and Missouri awarded the greatest number of degrees with 446 (19.80 percent), 237 (10.52 percent) and 155 (6.88 percent), respectively. Penn State was fourth with 143 or 6.35 percent of the degrees awarded for the period. A total of 2,252 degrees were awarded by reporting institutions during this period as revealed by the study. The top ten institutions awarded 1,680 different degrees (74.60 percent) during this period (See Table 11).

During the 1957-1977 and 1977-1990 periods, Ohio State recorded the highest number of degrees awarded, with 489 (8.99 percent) in 1957-77 and 447 (7.02 percent) in 1977-90. Sam Houston was second in the 1957-77 period with 462 (8.50 percent), while Oklahoma State and Mississippi State were third and fourth, awarding 461 (8.48 percent) and 318 (5.85 percent), respectively. The top 10 institutions had a total of 3,090 degrees awarded representing 56.86 percent of total degrees awarded.

During the 1977-90 period, Mississippi State and Missouri tied for second with 336 (5.27 percent) each, while Texas A&M was third with 309 (4.85 percent). The top ten institutions awarded 3,170 different degrees (49.75 percent) during this period in the study.

During the 1990-95 period, the University of Georgia awarded the most total degrees conferring 202 (9.02%) of 2,239 degrees awarded during the period. The Ohio State, Texas A&M, and Cornell Universities placed second, third and fourth with 136 (6.07 percent), 106 (4.73 percent) and 101 (4.51 percent) degrees awarded, respectively. For the period, the top 10 institutions awarded 1,067 (47.66 percent) of 2,239 degrees awarded for the period.

The data in Table 12 showed the ten institutions awarding the greatest number of the various types of degrees. Ohio State awarded the most M.S. with 818 M.S. degrees awarded (9.61 percent) of 8,510 awarded during the study period. Oklahoma State awarded the second greatest number of M.S. degrees with 729 or 8.57 percent. Oklahoma State awarded the greatest number of Ed.D. degrees with 183 or 33.27 percent of the 550 total during the study. The University of Georgia and Penn State tied for second with 66 each (12 percent).

TABLE 12

DISTRIBUTION OF TOTAL DEGREES AWARDED BY TYPE FOR THE 10 INSTITUTIONS WITH THE GREATEST NUMBER AWARDED

Type of Degree Awarded	Institutions	Degrees Awarded	Percent of Total
M.S.	Ohio State	818	9.61
	Oklahoma State	729	8.57
	Univ. Tennessee	510	5.99
	Cal Poly State-Pom	494	5.80
	Iowa State	418	4.91
	North Carolina A&T	377	4.43
	Univ. Minnesota	325	3.82
	Washington State	301	3.53
	Univ. New Mexico	287	3.37
	Univ. Nebraska	255	2.99
	Total of Top 10	4,514	53.04
	Total of all Institutions	8,510	100.00
M.Ag.	Clemson Univ.	300	30.99
	Univ. Florida	169	17.46
	Texas A&M	145	14.98
	Univ. Georgia	106	10.99
	Michigan State	80	8.26
	Iowa State	58	5.99
	Arkansas State	56	5.78
	Oregon State	28	2.89
	Oklahoma State	18	1.86
	Penn State	5	0.52
	Total of Top 10	965	99.69
	Total of all Institutions	968	100.00
M.Ed.	Sam Houston S.U.	927	20.36
	Univ. Missouri	651	14.29
	Univ. California-Davis	459	10.08
	Univ. Illinois	400	8.79
	Texas Tech Univ.	336	7.38
	Penn State	286	6.28
	North Carolina State	245	5.38
	Univ. Georgia	226	4.96
	Mississippi State	196	4.30
	Texas A&M	174	3.82
	Total for Top 10	3,900	85.66
	Total of all Institutions	4,553	100.00

TABLE 12 (Continued)

Type of Degree Awarded	Institutions	Degrees Awarded	Percent of Total
E.D.	Mississippi State	91	28.26
	Univ. Georgia	68	21.11
	VPI & State Univ.	43	13.35
	Univ. Illinois	42	13.04
	Univ. Missouri	30	9.32
	Univ. Connecticut	25	7.76
	Univ. Arkansas	16	4.97
	Michigan State	3	0.93
	Univ. Massachusetts	2	0.62
	Oklahoma State	1	0.31
	Wyoming	1	0.31
	Total of Top 10	321	99.69
	Total of all Institutions	322	100.00
Ed.D.	Oklahoma State	183	33.27
	Univ. Georgia	66	12.00
	Penn State	66	12.00
	Univ. Illinois	57	10.36
	VPI & State Univ.	45	8.18
	Univ. Missouri	44	8.00
	Mississippi State	29	5.27
	Oregon State	14	2.55
	Clemson Univ.	14	2.55
	Univ. Arkansas	11	2.00
	Total of Top 10	529	96.18
	Total of all Institutions	550	100.00
Ph.D.	Ohio State	394	29.03
	Iowa State	161	11.86
	Univ. Minnesota	113	8.33
	Michigan State	107	7.89
	Cornell Univ.	102	7.52
	Texas A&M	85	6.26
	Univ. Missouri	84	6.19
	Penn State	82	6.04
	Univ. Maryland	51	3.76
	Univ. Illinois	45	3.32
	Total of Top 10	1,224	90.19
	Total of all Institutions	1,357	100.00

TABLE 12 (Continued)

Type of Degree Awarded	Institutions	Degrees Awarded	Percent of Total
Other	Mississippi State	519	41.92
	Michigan State	311	25.12
	Cornell Univ.	159	12.84
	Univ. Rhode Island	134	10.82
	Arkansas State	56	4.52
	New Hampshire	48	3.88
	UW-River Falls	11	0.89
	Total of Top 10	1,238	100.00
	Total of all Institutions	1,238	100.00

Ohio State awarded the greatest number of Ph.D. degrees with 394 Ph.D. degrees (29.03 percent) of 1,357 awarded during the study period. Iowa State awarded the second greatest number of Ph.D. degrees with 161 (11.86 percent), while the University of Minnesota and Michigan State awarded the third and fourth greatest numbers with 113 (8.33 percent) and 107 (7.89 percent), respectively. For the study 1,357 Ph.D. degrees were conferred.

For the M.Ag., M.Ed., and Ed.S. degrees, Clemson, Sam Houston and Mississippi State awarded the most in each category with 300 (30.99 percent), 927 (20.36 percent) and 91 (28.26 percent), respectively. The Universities of Florida, Missouri and Georgia awarded the most greatest number in the M.Ag., M.Ed. and Ed.S. degrees. Total degrees awarded for the M.Ag., M.Ed., and Ed.S. degrees for the period were 968, 4553 and 322 respectively.

In the Other degree category, Mississippi State (Ext Ed) awarded the greatest number, 519 (41.92 percent), followed by Michigan with 311 (25.12 percent) of the degrees awarded. Cornell was third with 159 (12.84 percent) awards. There were 1,238 total degrees awarded during the study period.

Degree Concentration Ratios

Institutional progress, in terms of consistency and progressive turn-out of graduates, were the backbone to criteria #1. Criteria #3 was established as a result of a careful observation of the Degree Concentration Ratios that clearly showed a natural cut off point. Institutions considered for the Top 10 positions had to meet all criteria.

The data in Table 13 revealed the Degree Concentration Ratios (^{D}CR) for the top 10, 5, 3, 2, and 1 institution(s) for the various degrees awarded in this study. The Degree Concentration Ratio ($^{D}CR_{10,5,3,2,1}$) is the ratio of the total degrees awarded by type accounted for by 10, 5, 3, 2, and 1 institution in that category of degree awarded.

Other than in the M.S. degree category, the ^{D}CR's for the M.Ag., M.Ed., Ed.S., Ed.D., Ph.D. and Other categories clearly indicated institutional specificity in the award of the various degrees in these categories. The top ten institutions dominated the other institutions in awarding the degree. The M.Ag. and Ed.S. were the least popular degrees awarded according to the study. They each had $^{D}CR = .997$ for the top 10 institutions. Graduate programs leading to the M.Ag. and degrees were offered by only 8 and 13 institutions, respectively. In the M.Ed., Ed.D. and Ph.D. categories, there was some distribution of numbers of degrees awarded, although some still showed some high levels of concentration within the top 10 institutions. Some spread was observed as the number

TABLE 13

DISTRIBUTION OF TOTAL DEGREES AWARDED, TOTAL FOR TOP TEN, PERCENT OF TOTAL, AND ^{D}CR'S BY DEGREE CATEGORIES

Degree	Total for Study	# Institutions Awarding	Total of Top 10	% of Total	Degree Concentration Ratio				
					10	5	3	2	1
M.S.	8,510	40	4,515	53.04	.530	.349	2.42	.182	.096
M.Ag.	968	8	965	99.69	.997	.826	.634	.485	.309
M.Ed.	4,553	26	3,900	85.66	.857	.609	.447	.347	..204
Ed.S.	322	13	321	99.69	.997	.851	.627	.494	.283
Ed.D.	550	20	529	96.18	.962	.758	.573	.453	.333
Ph.D.	1,257	16	1,224	90.19	.902	.646	.492	.409	.290
Other	1,238	13	1,238	100.00	1.00	.952	.799	.670	.419

^{D}CR values are between 0 to 1.00. Zero represents no degree concentration and 1 the highest degree of concentration. To compute $^{D}CR_{MS1}$ say for example:

Total M.S. degrees awarded during the study = 8,510
M.S. degrees awarded by Ohio State = 818
Degree Concentration Ratio ($^{D}CR_{MS10}$) = $\frac{818}{8,510}$
= .096

of institutions decreased. The Other degree category also exhibited a high degree concentration ratio.

A careful examination of the $^{D}CR_{10,5,3,2,1}$ revealed much information on concentration and thus how institutionally specific and localized the award of these degrees were. In the M.S. degree category, the $^{D}CR_{10,5,3,2,1}$ showed a relatively even spread in the award of the degree among institutions in this study. The top 10 institutions awarded 4,514 degrees (53.04 percent) and had a $^{D}CR_{MS10}$ of .530 compared to .962, .902 and .857 in the Ed.D., Ph.D. and M.Ed. degree categories, respectively. Similarly, with a $^{D}CR_{MS1}$ = .096 compared to .333,

.290 and .204, the M.S. degree awarding programs in the study showed less concentration than the others.

The Top 10

In determining the Top 10 institutions, the following criteria were established. Institutions qualifying for this classification had to meet the following conditions:

(1) The number of degrees awarded had to exhibit a steady but positive growth trend throughout the study period;

(2) The institution had to be featured in the Top 10 in at least one category of the different degrees awarded;

(3) The proportion of total degrees awarded by the institution to the total degrees awarded during the study period must be ≥2.90 percent.

The data in Table 14 depicted the ranking of the top 10 graduate programs in agricultural/extension education. The Ohio State University ranked first with 1,216 or 6.9 percent of all degrees awarded in the study. Mississippi State came next with 964 awards representing 5.5 percent of all awards. Oklahoma State, Missouri and Illinois took the third, fourth and fifth places respectively with 5.32 percent, 4.96 percent and 4.53 percent. Michigan State and Iowa State tied for the sixth positions with 637 awards or 3.64 percent. Penn State University and the Universities of Minnesota and Tennessee placed 8th, 9th and 10th positions with 592 (3.38 percent), 560 (3.19 percent) and 510 (2.91 percent), respectively.

TABLE 14

TOP 10 INSTITUTIONS AWARDING THE MOST DEGREES AND THE NEXT TEN (ALL DEGREES FOR THE STUDY)

Institution	Total Degrees Awarded	Percent of Total	Position
Ohio State	1,216	6.90	1st
Mississippi State	964	5.51	2nd
Oklahoma State	931	5.32	3rd
Univ. Missouri	868	4.96	4th
Univ. Illinois	794	4.53	5th
Michigan State	637	3.64	6th
Iowa State	637	3.64	6th
Penn State	592	3.38	8th
Univ. Minnesota	560	3.19	9th
Univ. Tennessee	510	2.91	10th
Total for Top 10	7,709	44.03	
Total for Study	17,509	100.00	
Sam Houston S.U.	927	5.29	11th
Cal Poly S.U.-Pom.	494	2.82	12th
Univ. Georgia	466	2.66	13th
Texas Tech Univ.	461	2.63	14th
Univ. California-Davis	459	2.62	15th
Texas A&M	452	2.58	16th
North Carolina A&T	377	2.15	17th
Clemson Univ.	359	2.05	18th
North Carolina State	352	2.01	19th
Cornell Univ.	329	1.88	20th
Total for Top 20	12,385	70.74	
Total for Study	17,509	100.00	

The top 10 awarded 7,709 degrees or 44.03 percent of all degrees awarded by institutions that participated in this study. About 32 percent (20/63) of the institutions involved in this study awarded 70.74 percent of total degrees awarded. For the study, 17,509 degrees were awarded by 63 institutions. Sam Houston State University was not selected among the Top 10 institutions with the greatest number of degrees awarded because it did not exhibit a steady and positive growth trend one of the criteria set for the selection. It's large numbers of degrees were awarded in the 1937-1957 and 1957-1977 periods followed by periods of stiff decline in numbers of graduates. The next 10 institutions in order of total degrees awarded were: Sam Houston, Cal Poly State-Pomona, Georgia, Texas Tech, Univ. California-Davis, NC A&T, Clemson, NC State and Cornell.

The data in Table 15 revealed program emphasis by the responding institutions in 1990 and 1995. Educational Methodology and Research were the areas of major emphasis within the agricultural/extension education graduate programs. On a ranking of 1 through 5 with 1 representing least emphasis and 5 representing greatest emphasis, the responding institutions indicated the highest emphasis on Educational Methodology in 1990 and in 1995 with a slight increase in average rank from 1990 to 1995. That pattern remained the same in 1995 with a slightly higher emphasis on each of the first three ranks and slightly less on Psychology.

TABLE 15

AVERAGE EMPHASIS IN GRADUATE PROGRAMS IN AGRICULTURAL/ EXTENSION EDUCATION-1990 AND 1995

Category	1990			1995		
	N	Mean	SD	N	Mean	SD
Educational Methodology	52	3.65	1.56	53	3.74	1.46
Psychology	45	2.51	1.08	46	2.48	1.11
Research	50	2.80	1.18	49	2.97	1.13
Subject Matter Agriculture	50	2.72	1.31	50	2.74	1.45
Other	23	3.26	1.48	29	3.35	1.42

The data in Tables 16 and 17 showed the distribution of enrollments and fellowships/ assistantships for the institutions with the greatest overall graduate enrollments for 1990 and 1995. The M.S. programs dominated total enrollments and fellowships/assistantships for the periods accounting for 50.86 and 51.94 percent of total enrollments for 1990 and 1995 respectively. In the fellowships/assistantships awards, the M.S. degree programs accounted for 41.26 and 44.00 percent. Although M.S. enrollments increased slightly in absolute value from 741 in 1990 to 750 in 1995, in relative terms they experienced a slightly larger increase because of a decrease in total enrollments for 1995.

TABLE 16

DISTRIBUTION OF ENROLLMENTS AND FELLOWSHIPS/ASSISTANTSHIPS BY DEGREE TYPE FOR 1990 IN THE 10 INSTITUTIONS WITH THE GREATEST ENROLLMENT

Greatest Enroll.	M.S.	M.Ag.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other	Total Inst.	% of Study
Univ. Minnesota	27 (2)		71 (1)		2	22 (11)		122 (14)	8.37 (9.79)
Ohio State	48 (6)					52 (20)	13	113 (26)	7.76 (18.18)
Univ. Missouri			60	18	2	16 (3)		96 (3)	6.59 (2.09)
Univ. Georgia			47	26	4 (1)			77 (1)	5.28 (0.70)
Univ. Nebraska	70 (2)							70 (2)	4.80 (1.39)
Utah State	29 (0)						30 (0)	59 (0)	4.05 (0.00)
Iowa State	31 (9)					26 (10)		57 (19)	3.91 (13.29
Univ. Tenn-Knox.	55 (2)							55 (2)	3.77 (1.39)
UW-Madison	27 (0)					17 (0)		54 (0)	3.71 (0.00)
Oklahoma State	32	4			15 (5)			51 (5)	3.50 (3.49)
Total for Study	741 (59)	21 (3)	335 (12)	48 (0)	38 (11)	156 (49)	100 (9)	1,457 (143)	
% Total Enrolled	50.86	1.44	22.39	3.29	2.61	10.71	6.86		
% Total Fellow/ Assistantships	(41.26)	(2.09)	(8.39)	(0)	(7.69)	(34.27)	(6.29)		

Ratio of Enrollment to Fellowship/Assistantships 10.2 : 1
(Fellowships/Assistantships in parenthesis)

TABLE 17

DISTRIBUTION OF ENROLLMENTS AND FELLOWSHIPS/ASSISTANTSHIPS BY DEGREE TYPE FOR 1995 IN THE 10 INSTITUTIONS WITH THE GREATEST ENROLLMENT

Greatest Enroll.	M.S.	M.Ag.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other	Total Inst.	% of Study
Iowa State	30 (4)	89				28 (9)		147 (13)	10.18 (6.50)
Ohio State	50 (5)					51 (10)		101 (15)	6.99 (7.50)
Mississippi State	43 (2)			4	4	17 (1)		68 (3)	4.71 (1.50)
Univ. Missouri			42 (4)	12	1	8 (3)		63 (7)	4/36 (3.50)
Univ. Georgia		8 (0)	29 (0)	16 (1)	6 (1)			59 (2)	4.09 (1.00)
Oklahoma State	20 (3)	15			19 (6)			54 (9)	3/74 (4.50)
Cal Poly-Pom	53 (0)							53 (0)	3/67 (0)
Michigan State	18 (5)					32 (8)		50 (13)	3.46 (6.50)
Texas A&M	10 (3)	6 (3)	7 (3)		2	21 (8)		46 (17)	3.19 (8.50
UW-River Falls	39						7 (1)	46 (1)	3.19 (0.50)
Total for Study	750 (88)	163 (17)	198 (20)	33 (1)	40 (10)	234 (61)	26 (3)	1,444 (200)	
% Total Enroll.	51.94	11.29	13.71	2.29	2.77	16.20	1.80		
% Total Fellow/ Assistantships	(44.00)	(8.50)	(10.00)	(0.50)	(5.00)	(30.50)	(1.50)		

Ratio of Enrollment to Fellowships/Assistantships 7.2 : 1
(Fellowships/Assistantships in parenthesis)

In Ph.D. programs, enrollments increased by about 50 percent, from 156 (10.71 percent) in 1990 to 234 (16.20 percent) in 1995. Fellowships/assistantships also experienced an increase from 49 to 61 (34.27 and 30.5 percent), respectively, for the periods.

In the Ed.D. category, enrollments were slightly up from 38 (2.61 percent) in 1990 to 40 (2.77 percent) in 1995. Although fellowships/assistantships remained relatively the same at 11 and 10 for both periods, they experienced a relative decrease from 7.69 percent in 1990 to 5.0 percent in 1995. While the M.Ag. experienced increased enrollments of 163 in 1995 from 21 in 1990, the M.Ed., Ed.S. and Other degree programs experienced decreased enrollments in 1995 compared to 1990 enrollments.

Differences Between 1990 and 1995 Enrollments and Fellowships/Assistantships

For the Chi Square Test for differences in enrollments in the M.S., M.Ag., M.Ed., Ed.S., Ed.D., Ph.D., total enrollments and total assistantships/fellowships in 1990 and 1995, the null (H_O) and alternate (H_A) hypothesis were:

H_O = There was no difference in the number of M.S., M.Ag., M.Ed., Ed.S., Ed.D. and Ph.D. degrees awarded between 1990 and 1995.

H_A = There was difference in the number of M.S., M.Ag., M.Ed., Ed.S., Ed.D. and Ph.D. degrees awarded between 1990 and 1995.

As indicated in Table 18, the Chi Square Test showed there were no statistically significant differences in the numbers of M.S., M.Ag., M.Ed., Ed.S., Ed.D. and Ph.D. degree enrollments between 1990 and 1995.

TABLE 18

DIFFERENCES BETWEEN 1990 AND 1995 ENROLLMENTS AND FELLOWSHIPS/ASSISTANTSHIPS

Degree Types	X^2 Values		Remarks*
	Calculated	Critical (Table)	
M.S.	1.79	42.60	Failed to Reject
M.Ag.	2.83	5.99	Failed to Reject
M.Ed.	6.68	22.40	Failed to Reject
Ed.S.	0.04	5.99	Failed to Reject
Ed.D.	0.56	7.82	Failed to Reject
Ph.D.	0.0001	11.07	Failed to Reject
Total Enrollments	9.27	42.80	Failed to Reject
Total Assistant/ Fellowships	0.002	36.40	

$p < .05$

*Kerlinger (1986); Keppel (1991); Leedy (1993); Key (1995); Bice (1995).

Similar results were found for total enrollments and total assistantships/fellowships during the periods.

The data in Table 19 revealed the average ranks of the graduate placement positions by the responding institutions. Historically, job placements in agricultural/extension education have been biased in favor of high school and community college teaching. The study data indicated that the pattern would likely remain the same for the future. Respondents were asked to rank the categories of placement from 1 to 9 with 1 being the greatest number placed and 9 the least. The average ranks for 1990 and 1995 were almost identical except for Agricultural Organizational Lobbyist position which moved from an overall rank position of

Agricultural Organizational Lobbyist position which moved from an overall rank position of 8th in 1990 to 9th in 1995. The other job placement categories maintained the same ranking from 1990 to 1995 with high school community college teaching, cooperative extension , government service (USDA, ASCS, etc.), teaching and research (university level), sales management and supervisory position (ag & ext) in that order.

TABLE 19

AVERAGE RANK OF GRADUATE PLACEMENT CATEGORIES

Area	History of Program			1990 - 1995		
	Rank	Mean	SD	Rank	Mean	SD
Teaching at high school & community college	1	1.39	1.00	1	1.40	0.97
Cooperative Extension	2	2.46	1.01	2	2.61	1.14
Government Service: USDA, ASCS, etc.	3	3.98	1.29	3	3.96	1.53
Teaching & Research (University)	4	4.10	1.75	4	4.11	2.02
Sales Management	5	4.31	1.49	5	4.29	1.50
Supervisory Position (Ag & Ext)	6	4.40	1.47	6	4.41	1.53
Other	7	4.95	2.16	7	4.54	1.77
Agricultural Organizational Lobbyist	8	7.19	0.98	9	7.33	0.89
Educational Organizational Lobbyist	9	7.42	1.26	8	7.20	1.47

The data in Table 20 showed the distribution of Grade Point Average (GPA) required by institutions for admission into their programs and for continuation in the various degree programs. In the M.S. degree programs, 17 institutions (27.42 percent) admitted students with a GPA of 3.0, but 54.84 percent required a GPA of 3.0 to stay in the program. The study revealed that for the M.S. degree, 24 institutions (38.71 percent) admitted with less than a 3.0 GPA, but in all except two, students were required to maintain a minimum of 3.0 to continue in the program.

TABLE 20

DISTRIBUTION OF GPA REQUIREMENTS

	Minimum Admission GPA									Minimum Retention GPA				
Program	4.0	3.5	3.0	2.8	2.75	2.7	2.6	2.5	2.0	4.0	3.25	3.0	2.8	2.5
M.S.	1	0	17	3	8	6	0	6	1	1	0	34	1	1
M.Ag.	0	0	4	1	0	1	0	0	0	0	0	6	0	0
M.Ed.	0	0	7	1	5	2	2	2	0	0	0	15	1	1
Ed.S.	0	1	5	0	1	0	2	0	0	0	1	7	0	0
Ed.D.	0	2	8	0	1	0	0	0	0	1	1	9	1	0
Ph.D.	0	0	15	0	1	2	0	0	0	1	1	14	1	0
Other	0	0	2	0	1	0	0	0	0	0	0	3	0	0

In M.Ed. programs the same scenario prevailed. Only seven institutions required a 3.0 GPA for admittance, however, to remain in the program 15 institutions required a GPA of 3.0. Twelve institutions admitted students with less than a 3.0 GPA, however, all but two required a 3.0 to continue. The M.Ag. and Ed.S. programs had similar requirements but they were not as consistently clustered as the others.

In the Ed.D. programs, 8 institutions admitted students into the program with a 3.0 GPA and all required the 3.0 to continue. Two admitted with a 3.5 GPA, but one each required a 4.0 and 3.25 GPA to continue, respectively. Only one institution had students admitted or retained with less than 3.0.

In the Ph.D. programs, 15 institutions admitted students with a 3.0 GPA, and 14 required students to maintain a 3.0 for continuation. Three institutions admitted with less than a 3.0, and one would allow the students to continue with less than a 3.0 GPA. In one institution each, students were required to maintain a 4.0 and 3.25 GPA, respectively, to graduation. The University of Minnesota required a 3.0 for admittance, but allowed students to continue with a 2.8 GPA.

A GPA of 3.0 appeared to be the most universally accepted norm for program admission and maintenance as revealed by the study. Tennessee State admitted students with a 2.0 GPA (the least popular admission requirement) but expected them to maintain a 3.0 GPA to continue in its M.S. program. Conversely, Southwest Texas State admitted students with a 2.75 but kept the student in the program with a 2.5 GPA, the least popular minimum retention GPA revealed by the study. Some institutions used some form of sliding scale as admission requirements. At Texas A&M, the sliding scale was used for admission to programs dependent on the Graduate Record Examination (GRE) but required a 3.0 GPA to

programs dependent on the Graduate Record Examination (GRE) but required a 3.0 GPA to continue. Thirty-five institutions or 56.45 percent responded "Not required or applicable" to the GPA question.

The data in Table 21 showed ranges of Graduate Record Examination (GRE) scores, MAT. Test scores and Other Test Scores as admission requirements by the institutions. For M.S. programs, 5 required a range of 300-500 each on the GRE verbal and quantitative sections.

TABLE 21

DISTRIBUTION OF ADMISSION REQUIREMENTS (GRE, MAT AND OTHER)

Program	Verbal	Quantitative	Analytical	Composite	Min. MAT.	Min. Other
M.S.	300-500	300-500	450&500	650-1050 25&40%tile	25-47	525 TOEFL Writing ability profile
M.Ag.	500	500		790-1000	35	
M.Ed.	400&450	400&450		800-1200	32&44	450 GMAT
Ed.S.	450	450		900	48	
Ed.D.	500	450&500	450	450-1050	40	550 TOEFL
Ph.D.	400-500	400-500	450	1000-1400	48 50%tile	
Other	400	350	400	1160	75%tile	

In the M.Ag., M.Ed. and Ed.S. programs, the GRE was required by few. One institution each offering the M.Ag. and Ed.S. required GRE scores of 450 and 500 on verbal and quantitative sections. For the M.Ed., two institutions each required 400 and 450 on verbal and quantitative GRE scores. For the Ed.D. and Ph.D. programs, the range of GRE scores for admission was from 400-500 on verbal and quantitative sections. In the Other degree category, the range was from 350 to 400. At Texas A & M and Colorado State some form of sliding scale, depending on GPA, was applied in assessing GRE scores, whereas at the University of Connecticut, although GRE scores were required for the Ph.D., there were no specific minimum GRE scores set. Scores were evaluated along with GPA, recommendations, application and references.

Composite GRE scores were more of an acceptable form of admission requirements to graduate schools as revealed by the study. Ten institutions required GRE composite scores between 650 and 1050. In the M.Ed., Ed.D. and Ph.D. programs six, four and five institutions required GRE composite scores as part of admission requirements. GRE composite scores ranged from 650-1050 for the M.S., with Western Illinois University requiring the highest score; 790-1000 for the M.Ag., with the University of Florida requiring the highest score; 800-1200 for the M.Ed., with the University of Western Kentucky requiring the highest score; 900 for the Ed.S., with the University of Georgia requiring the highest score; 1050-1450 for the Ed.D., with Clemson University requiring the highest score and 1000-1400 for the Ph.D., with the highest score required by the University of Missouri. A combination of 700, 850 and 900 in Q&V was an acceptable admission requirement for North West Missouri State (M.Ed. and Ed.S. programs), Arkansas State (M.Ag. programs) and in Washington State M.S. and M.Ed.

programs, respectively. The University of New Hampshire accepted 1160 on the GRE composite for admission to Other degree programs. Not required or not applicable responses accounted for 74.19 percent or forty-six institutions in the study.

MAT, GMAT and TOEFL scores were the least required tests for admission to graduate schools as revealed from the study. MAT scores varied from institution to institution with a minimum and maximum of 25 and 48. The Universities of Minnesota and New Hampshire accepted >40 and 75 percentile range for their programs. The University of Wisconsin-Madison required 450 in GMAT, while the University of Tennessee and Oklahoma State University required 525 and 550 in TOEFL scores for international students for their respective programs. Michigan State and UW-Madison designed some form of written examination to demonstrate writing skills and logical thinking using the literate writing ability profile.

The data in Table 22 showed other program requirements including years of working or teaching experience, residency semesters required, program semester hours and thesis semester hours. Years of experience as a requirement for admission to a graduate program in agricultural/ extension education was not common especially for the Masters degree programs as revealed by the study. Only three institutions (4.84 percent) offering M.S. programs required 3 years of working or teaching experiences, while three others required 2 years for the M.Ed. programs.

In the doctorate programs working and teaching experience as a requirement was more widely accepted. In Ed.D. programs, 5 institutions or 8.06 percent required 3 years minimum working or teaching experience, whereas in Ph.D. programs there were 7 or 11.29 percent.

TABLE 22

DISTRIBUTION OF INSTITUTIONS' OTHER PROGRAM REQUIREMENTS (WORK OR TEACHING EXPERIENCE, RESIDENCY, PROGRAM HOURS, AND THESIS HOURS) BY DEGREE

	Exp (Yrs)			Residency (Sm)					Program (Sm Hr)								Thesis (Sm Hr)				
Type	3	2	1	≥3	2.5	2	1.5	1	≥70	≥60	≥50	≥40	≥36	≥32	≥30	≥24	1-5	6-15	16-20	21-30	>30
M.S.	3	1	1	1	4	4	1	5	--	--	--	--	6	4	19	9	10	20	--	--	--
M.Ag.	--	1	--	1	--	--	--	2	--	--	--	--	5	--	2	--	--	1	--	--	--
M.Ed.	--	3	1	2	3	--	1	2	--	--	--	1	5	6	5	--	7	1	--	--	--
Ed.S.	--	--	--	1	2	--	--	--	--	--	1	--	--	1	3	--	3	--	--	--	--
Ed.D.	5	--	--	3	3	2	--	2	5	3	1	1	1	--	--	--	--	4	3	2	--
Ph.D.	7	1	--	6	8	1	--	1	5	9	--	1	--	--	--	--	--	4	4	4	1
Other	1	--	1	--	1	--	--	--	--	--	--	--	--	2	2	--	1	2	--	--	--

For residency requirements, two semesters and 2.5 semesters were the most widely used criteria for establishing residency in the Masters programs, whereas in the doctorate programs, two and three semesters and above were used to establish residency. Three institutions only required one semester residency for the doctorate. For the study, 14 institutions or 22.58 percent required 3 semesters and above to establish residency, while 21 or 33.87 percent required two and a half semesters. Seven required 2 semesters, two required 1.5 semesters, whereas 12 required only 1 semester.

For program semester hour requirements, 16, 11 and 29 institutions required 36, 32 and 30 semester hours, respectively, to complete degree requirements in the M.S., M.Ag., M.Ed. and Ed.S. programs. In Masters degree programs, 30 semester hours was most widely required for graduation from the program.

In doctorate programs, 60 and over 70 semester hours were the most widely required minimum for program completion. A total of 12 institutions required 60 hours, while 10 others required that 70 hours be completed to earn a doctorate degree. Five institutions each in Ed.D. and Ph.D. programs required 70 and above, while three in Ed.D. and nine in Ph.D. programs required 60 or over for program completion. Over 50 hours and over 40 hours were also accepted minimum requirements by one institution each in their Ed.D. programs. One institution only required greater than 40 hours in their Ph.D. program.

The distribution of semester hours required for theses were as variable as program variations. Thesis hours varied from 1 semester hour for M.Ed. programs at Northwest Missouri State to between 20 and 40 semester hours at Virginia Polytechnic Ph.D. programs. In the Masters program, a 6 hour thesis option was most popular. In the

doctorate degree programs, 10 - 40 semester hours were most widely required by institutions as revealed by the study.

For the study, a total of 47 institutions (75.81 percent) indicated, either not required or not applicable, for minimum work or teaching experience, while 35 or 56.45 percent indicated not required or not applicable for residency conditions. Seventeen institutions (27.41 percent) did not respond to program semester hour requirements as well as 23 (37.1 percent) to thesis semester hour requirements. Thesis hour requirements were optional in the California Polytechnic State University and the University of Wisconsin - Madison M.S. programs. In Arkansas State the thesis was optional in the Other degree category.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

This chapter of the study presents a summarized form of the following: (1) problem statement, (2) purpose and objectives of the study, and (3) the major findings of the research. Also presented are summary of data, conclusions and recommendations.

Problem Statement

Historical records of agricultural/extension graduate programs in the United States have not been documented adequately by institutions, organizations or individuals.

Purpose of the Study

The purpose of the study was to identify and document agricultural/extension education graduate programs in colleges/universities in the United States.

Summary of Major Findings

Objective # 1

To identify 1862 Land-Grant, 1890 Land-Grant and non Land-Grant institutions which offer or have offered graduate programs in agricultural/extension education and when they were established.

The study revealed that 43 of the 63 responding institutions (68.25 percent) were 1862 land-grant institutions. Six institutions (9.52 percent) were 1890 land-grant, while 14 (22.22 percent) were non land-grant institutions. The number of responding institutions conducting or which have conducted agricultural/extension education graduate programs increased by 15 (31.35 percent) over those identified in a similar study by Ake in 1990. Responding institutions were established primarily between 1835 and 1935 (95 percent).

Objective # 2

To determine the dates graduate programs started at the institution and started in agricultural/extension education.

Institutional graduate programs were initiated in 1821, however, most programs were established between 1861 and 1980 (58 programs). Program establishment peaked between 1861-1880 (13 programs) and between 1941-1960 (13 programs), respectively.

The graduate programs in agricultural/extension education started about 1917, but most were initiated between 1921-1980 (52 programs). The last program initiated was in 1986, and the number of programs currently operational is declining.

Objective # 3

To determine the units administering and housing the agricultural/extension education graduate programs.

The graduate college primarily administered graduate programs in agricultural/ extension education in the United States. When institutions were asked where programs were administered, 90.48 percent (57 programs) indicated through the graduate college, 3.17 percent through the college of agriculture, 4.77 percent through colleges other than the graduate college or college of agriculture, and 1.59 percent indicated joint administration of both colleges.

The study revealed that the department was primarily located in the college of agriculture with 73.02 percent of responding institutions indicating so. About 13 percent of the departments were located in the college of education, while 11.11 percent were located in other colleges. Joint location accounted for 3.17 percent.

Objective # 4

To determine when the different graduate degrees were first awarded in agricultural/extension education.

More reporting institutions awarded the M.S. degree in agricultural/extension education than any other agricultural/extension education graduate degrees. The master of science (M.S.) degree was the first graduate degree awarded in agricultural/extension education in the U.S. in 1914 by Penn State. The master of agriculture (M.Ag.) was first awarded by the University of Florida in 1918. The master of education (M.Ed.) was awarded first by Auburn, Arizona and Colorado State in 1928. The specialist in

education (Ed.S.) degree was first awarded by the University of Illinois in 1940. The University of Missouri awarded the first doctor of education (Ed.D.) degree in 1938. The first doctor of philosophy (Ph.D.) degree was awarded by Penn State in 1927.

Objective # 5

To determine the degree types and the number of graduate degrees awarded in agricultural/extension education.

Between 1917-1937, only three types of graduate degrees, the M.S., the M.Ed and the Ph.D, were awarded in agricultural/extension education in the United States. The awarding of the M.Ag., the Ed.S., and the Ed.D. degrees started between 1937 and 1957.

The University of Missouri awarded the most masters degrees (49 M.S. and 2 M.Ed.) between 1917 - 37 and the University of Minnesota the most doctor of philosophy degrees (2). During the next 40 years, Oklahoma State awarded the most master of science degrees, followed by Ohio State and Michigan State in the next two time periods. The most master of agriculture degrees rotated from Michigan State, Clemson, Texas A&M and Clemson in ensuing time periods. The greatest numbers of master of education degrees were awarded by Sam Houston for 40 years, then Missouri and Georgia during the next two time periods. The greatest numbers of specialist in education degrees were awarded by Connecticut, Mississippi State and Georgia. The most doctor of education awards were by Illinois for 20 years, then Oklahoma State for the remaining years. The greatest number of doctor of philosophy degrees were awarded by Ohio State during all time periods after 1937.

Table 23 indicated the total number of degrees awarded by type of degree.

TABLE 23

SUMMARY OF PROGRAM GRADUATES IN AGRICULTURAL/EXTENSION EDUCATION

Degree Type	Number of Award
M.S.	8,510
M.Ag.	968
M.Ed.	4,553
Ed.S.	322
Ed.D.	550
Ph.D.	1,357
Other	1,249
Total for Study	17,509

Objective # 6

To identify the ten institutions in agricultural/extension education graduate programs in the United States producing the greatest number of graduate degrees.

The top ten institutions by number of graduate degrees awarded in agricultural/extension education were 1862 land-grant institutions. The 1890 land-grant institutions and the non land-grant institutions did not fall in the top ten institutions in

agricultural/extension education graduate programs. Ohio State awarded the most degrees in agricultural/extension education with 1,216, representing 6.9 percent of all reported awards in the study. The second and third places went to Mississippi State and Oklahoma State with 964 (5.51 percent) and 931(5.32 percent) total awards, respectively. Missouri, Illinois, Michigan State, Iowa State, Penn State, and Minnesota were 4th through 9th places, respectively. The University of Tennessee was tenth with 510 (2.91 percent) total awards. The next ten in order of numbers were: Sam Houston (not included in the top 10 because of lack of positive growth [see criteria]), Cal Poly State-Pomona, Georgia, Texas Tech, Uni Cal-Davis, Texas A&M, NC A&T, Clemson, NC State and Cornell.

Objective # 7

To determine the Degree Concentration Ratio for the various graduate degrees in agricultural/extension education.

All degrees except the M.S. degree had high Degree Concentration Ratios, indicating only a few institutions offered each degree. The M.S. was awarded by many institutions.

Objective # 8

To determine the program emphasis in the agricultural/extension education graduate programs.

In response to the question of program emphasis, there have been no significant changes from the findings of the 1990 study. Educational methodology was the most

emphasized area followed by research, subject matter-agriculture, psychology and other, respectively.

Objective # 9

To determine enrollments and fellowships/assistantships in the agricultural/extension education graduate programs.

More fellowships/assistantships were offered in 1995 in agricultural education graduate programs than in 1990 (Table 24).

TABLE 24

SUMMARY OF PROGRAM ENROLLMENTS AND ASSISTANTSHIPS/ FELLOWSHIPS IN AGRICULTURAL/EXTENSION EDUCATION GRADUATE PROGRAMS IN 1990 AND 1995

Year	M.S.	M.Ag.	M.Ed.	Ed.S.	Ed.D	Ph.D.	Other	Assist/ Fellowships
1990	741	21	335	48	38	156	100	143
1995	750	163	198	33	40	234	26	200

Objective # 10

To determine the difference between total enrollments and fellowships/ assistantships between 1990 - 1995.

Chi Square Tests showed no statistically significant differences in enrollments for the M.S., M.Ag., M.Ed., Ed.S., Ed.D., Ph.D., total enrollments and assistantships/ fellowships for 1990 and 1995.

Objective # 11

To determine the perceived placement of graduates of the programs in agricultural/extension education.

When respondents were asked the most numerous placement positions, high school and community college teaching were the most common followed by cooperative extension, government service (USDA., ASCS. etc.), teaching and research (university level), sales management, supervisory position (ag & ext), others, agricultural organizational lobbyist and educational organizational lobbyist. Except for agricultural organizational lobbyist, there was no difference in placements between 1990 and 1995.

Objective # 12

To determine admission/retention requirements of the agricultural/extension education graduate programs.

A minimum GPA. requirement of 3.0, GRE. composite score of 1000, and 2-3 years of work experience were the accepted norms for admission to graduate doctoral programs in agricultural/extension education. Responding to the question on admission requirements, institutions indicated GPA. as the most commonly used criteria for admission to graduate programs. A GPA. of 3.00 was most popular for admission to and retention in the masters degree program. A minimum of 30 semester hours for the masters and 60 hours for the doctoral degree had wide spread acceptability. When

respondents were asked about program and thesis hours, 30 semester hours was the most frequent requirement for the M.S., the M.Ag., and the M.Ed. programs. For the doctorate programs, however, 50-60 semester hours in addition to hours for the master degree was most common. Six semester thesis hours were required by most institutions at the masters level. At the doctoral level, ten semester hours for the Ed.D. dissertation and 20 for the Ph.D. dissertation were most widely used.

Conclusions

After due consideration of the data analysis and findings of this study, the following conclusions were drawn:

1. Most of the agricultural/extension education graduate programs in the United States were conducted by land-grant institutions. This is a landmark fulfillment of the dreams and visions of the founding fathers and originators of the Morrill Acts. Agricultural education developed relatively slowly, in spite of the much felt need at local and national levels for agricultural education as a primary source by which the vast majority of settlers could climb out of the low economic doldrums. Even though visionaries of the Land-Grant Acts emphasized the need for agricultural information dissemination, graduate programs with specialization in agricultural education were slow to be realized.

2. Most institutional graduate programs were initiated around 1861 and thereafter, perhaps jointly in response to the farmer's movement of early 19th century and the Morrill Acts of 1862 and 1890. In the United States, most graduate programs in agricultural/extension education were initiated between 1921 - 1980 because emphasis in

training teachers of agriculture was in high demand due to the after effects of the various legislative acts. As educational funding dwindles and departmental consolidation continues, chances are that smaller departments in some universities and colleges will face the danger of being phased out or merged.

3. The location of agricultural/extension education departments in the college of agriculture perhaps was due primarily to proximity to available agricultural facilities. Strong support from colleges of agriculture has encouraged several departments to move from other colleges to the college of agriculture recently.

4. The M.S. degree was the most awarded degree in agricultural/extension graduate programs because it was the most widely offered graduate degree in the profession.

5. In the United States, there are more enrollments in the masters program in agricultural education than in other degree programs because jobs are becoming more technical. As science and technology advance, jobs are requiring specialization. A graduate degree has become the entry point for most jobs, and more people working with bachelors degrees are going to graduate school to enhance their training and marketability for better paying jobs and to remain competitive in the job market of the future. Subsequently, enrollment in Ed.D. and Ph.D. programs has increased and so too has research emphasis. Therefore, it may be concluded that job demand has a direct effect on graduate programs in agricultural/extension education.

6. The top 10 institutions with agricultural/extension education graduate programs were the 1862 land-grant institutions because they had the benefit of being the

first to be established under the acts and perhaps had the most well developed program/course structure.

7. The high Degree Concentration Ratios exhibited by the M.Ag., the M.Ed., the Ed.S., the Ed.D. and the Ph.D. degrees were indications of how institutionally specific those degree awards were. The M.S. degree was the only degree widely offered by most institutions indicating it was not institutionally specific.

8. The major emphasis stressed in agricultural education was educational methodology and is likely to remain so because most recipients of the masters and doctoral degrees teach either at the high schools, community colleges or in the university. Enhancing their teaching skills require taking courses structured to reflect educational methodological approaches.

9. There were no significant differences in program enrollments and assistantships/ fellowships between 1990 and 1995, perhaps because programs were established long enough to be efficient. Enrollments are perhaps at the optimal level.

10. High school and community college teaching, as well as jobs in cooperative extension, offer the most prospects for graduates of agricultural/extension education graduate programs in the United States because employers, especially educational employers, were demanding better and higher training for their staff and faculty. Demand for teachers with graduate degrees at the high school and community college levels will probably increase as older staff retires and new positions are replaced by higher degree recipients.

Recommendations and Implications

The results of this study do not conclude the whole story. Paucity of data was a major draw back. For example, data on program graduates were grossly incomplete for most institutions involved in the study. The following recommendations were drawn from this study:

1. It is recommended that agricultural/extension education departments develop and maintain an adequate record keeping strategy. Lack of a graduate database is a serious problem in the profession.

2. It is recommended that committees be set up at regional and national AVA levels to coordinate annually data on graduate enrollment, degrees awarded, and placements, to mention but a few. This would allow easy monitoring of program major emphasis and professional focus.

3. It is also recommended that such data be placed on the Internet and be made available to all institutions and the public.

4. It is further recommended that studies be initiated on the effects of GRE, TOEFL, MAT and GMAT and other admission and retention requirements on enrollment and completion of agricultural/extension education graduate programs.

5. It is recommended that program emphasis information be researched further to determine agreements or differences among graduate agricultural/extension programs across the United States.

6. It is recommended that the placement office exploit other placement areas to enhance job opportunities for program graduates.

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APPENDIXES

APPENDIX A

INSTITUTIONAL REVIEW BOARD

STATEMENT

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 06-14-95 **IRB#:** AG-96-002

Proposal Title: HISTORICAL ASPECTS OF GRADUATE PROGRAMS IN AGRICULTURAL EDUCATION IN THE UNITED STATES

Principal Investigator(s): James P. Key, James I.M. Oyawiri

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.
APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Signature: _____ Date: August 3, 1995

Chair of Institutional Review Board

APPENDIX B

SURVEY INSTRUMENT WITH COVER LETTER

AND INSTITUTIONAL DATA

FOR VERIFICATION

September 5, 1995

Dear Dr. :

RE-STUDY: HISTORICAL ASPECTS OF GRADUATE PROGRAMS IN AGRICULTURAL EDUCATI\ON IN THE UNITED STATES

History has no end to it but surely has a beginning. In 1990 we started a study of the historical aspects of graduate programs in agricultural education in the United States. Drs. James P. Key (Oklahoma State), A. P. Bell (North Carolina A. &. T) and Alex Hash (Clemson) coordinated the data as Steve Ake (Oklahoma State) adopted the study as his Master's degree thesis. We appreciated your inputs toward the success of the first phase of this study.

As the study enters its second phase, James I. M. Oyawiri (Oklahoma State) has adopted it for his Doctor of Education dissertation. We would appreciate your inputs towards this goal.

At this phase of the study, we are enclosing a copy of your previous instrument with adjustments for entry of institutional data between 1990 and present. Other sets of data are also enclosed. **We would appreciate it if you would take time to verify the other data and to furnish us with updated information on your institution**. We realize that this time of the year is particularly a busy period however, we would very much appreciate your contributions.

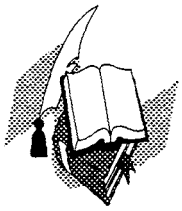
Thanks for your cooperation and participation in this study. The information you would supply is very vital to the success of this study.

Sincerely,

Dr. James P. Key
Oklahoma state

James I. M. Oyawiri
Oklahoma State

GRADUATE STUDY SURVEY



Name of Institution: _____ Year Founded_____

Name of Department:_____

Please Check:

1._____1862 Land Grant Institution_____1890 Land Grant Institution

_____Non Land Grant Institution

2. Year Graduate Program started at institution _____

3. Year Graduate Program started in Agricultural/Extension Education _____

4. Graduate Program in Agricultural/Extension Education is administered under: Please Check:

_____Graduate College

_____Other (specify) _____

5. Agricultural Education Department is located in:(Please Check)

_____ College of Agriculture

_____College of Education

_____Other (specify) _____

6. Year Graduate degrees first awarded in Agricultural/Extension Education: Please List Date for Each:

____ M.S. ____M.Ag.

____ Ed.S. ____ M.Ed.

____ Ed.D. ____Ph.D.

_____Other (specify) _____

7. Number of Graduate degrees awarded in Agricultural/Extension Education: (If year breakdown not available, please give totals)

Period	M.S.	MAG.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Others
Prior to 1917	____	____	____	____	____	____	____
1917 - 1937	____	____	____	____	____	____	____
1937 - 1957	____	____	____	____	____	____	____
1957 - 1977	____	____	____	____	____	____	____
1977 - 1990	____	____	____	____	____	____	____
Total	____	____	____	____	____	____	____
1990 - 1995	____	____	____	____	____	____	____

8. Focus of Graduate Study in Agricultural Education: (Rank order according to emphasis) (5 greatest and 1 least)

1995 1990

_____ _____ Educational Methodology

_____ _____ Psychology

_____ _____ Research

_____ _____ Subject Matter Agriculture

_____ _____Other (please specify) _____

9. Current status of Graduate Study in Agricultural Education for 1995

	M.S.	M.Ag.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Others
Enrollment	____	____	____	____	____	____	____
Number of Fellowships/ Assistantships	____	____	____	____	____	____	____

10. What have been the most numerous placement positions last 5 years and history of entire program for your graduate students in Agricultural/Extension Education? (Please rank according to numbers of placements with 1 being greatest number and 9 the least)

	Placement of Program before 1990	Placement of Program 1990 - 95
Teaching and Research (University level)	_____	_____
Teaching High School and Community College	_____	_____
Cooperative Extension	_____	_____
Government Service (i.e. ASCS., SCS., FmHA USAID.)	_____	_____
Educational Organization Lobbyist	_____	_____
Agricultural Organization Lobbyist	_____	_____
Sales Management	_____	_____
Supervisory Position (Agriculture and Extension)	_____	_____
Other (please specify) _____	_____	_____

11. Admission Requirements, Residency Conditions, and Work Experience(s) required in Agricultural Education graduate program. (Please answer for all that are offered in your institution).

Type of Degree		MS.	M.Ag.	M.Ed.	Ed.S.	Ph.D	Ed.D
Minimum GPA. (Admission)		___	___	___	___	___	___
Minimum GPA. (Maintain)		___	___	___	___	___	___
Minimum GRE. Score	Verbal	___	___	___	___	___	___
	Quantitative	___	___	___	___	___	___
	Analytical	___	___	___	___	___	___
OR	Composite	___	___	___	___	___	___
Minimum MAT Score		___	___	___	___	___	___
Minimum (Other Test) Please Specify		___	___	___	___	___	___
Minimum Work or Teaching Experi		___	___	___	___	___	___
Residency (Yrs. or *Sem. Hrs* C/work)		___	___	___	___	___	___
Program (Sem. Hrs. Coursework)		___	___	___	___	___	___
Thesis (Sem. Hrs.)		___	___	___	___	___	___

Graduate School Data

	1st Grad in AGED	1st M.S** in AGED	1st Ed.S** in AGED	1st M.Ag** in AGED	1st Ed.D** in AGED	1st Ph.D** in AGED
Uni California	1912					
Iowa State		1918				
Uni Illinois			1940			
Uni Florida				1918		
Uni Missouri					1938	
Uni Minnesota						1928

Most Total Degrees (1917 - 1990)

M.Ag. = Tennessee Tech	312
M.S. = Ohio State	752
M.Ed. = Uni Missouri	602
Ed.S. = Washington State	54
Ed.D = Oklahoma State	159
Ph.D = Ohio State	328
Other = Colorado State	214

Sources: *William A. Broyles, (1925). Graduate work in agricultural education. Unpublished doctoral dissertation. Illinois State University, Normal.

** Steve Ake, (1993). Historical aspects of agricultural education graduate programs in the United States. Unpublished master's degree thesis, Oklahoma State University, Stillwater.

APPENDIX C

IDENTIFICATION INSTRUMENT WITH

COVER LETTER

September 5, 1995

Dear Dr.:

RE-STUDY: HISTORICAL ASPECTS OF GRADUATE PROGRAMS IN AGRICULTURAL EDUCATION IN THE UNITED STATES

Drs. James P. Key (Oklahoma State), A. P. Bell (North Carolina A. &. T) and Alex Hash (Clemson) are coordinating this study. James I. M. Oyawiri (Oklahoma State) has adopted this study for his Doctor of Education dissertation.

We are in the process of identifying institutions with graduate programs in Agricultural/ Extension Education or related field. We would appreciate your response to the following questions:

1. Does your institution conduct graduate programs in Agricultural/Extension Education?_____ Yes _____ No (Please Check the Correct Response and specify the type of Graduate Program if offered

_____)

2. Does your institution conduct graduate programs in a related field?_____ Yes _____ No (If so, please specify -

_____

3. Has your institution ever conducted graduate programs in Agricultural/Extension Education or related field? _____ Yes _____ No (Please specify

_____)

Thanks for your cooperation and quick response.

Sincerely,

Dr. James P. Key
Oklahoma State

James I. M. Oyawiri
Oklahoma State

APPENDIX D

REMINDER: FIRST MAILING

September 21, 1995

Dr. ,

I realize this is a very busy time of the year and everything else is demanding your attention. I also know you want your institution's graduate studies history represented accurately in the AG ED HISTORY book. If you had trouble downloading the questionnaire (like several of the others did) we can fax you a copy. If you have mislaid the fax or letter copy, we will be happy to send you another. Just let us know what we can do to help you get your institution's information in the HISTORY book accurately. We will be glad to do it. Thanks for your interest and prompt response. Jim Key and James Oyawiri

p.s. If you have already responded, thanks a bunch!

APPENDIX E

REMINDER: SECOND MAILING

October 6, 1995

Joe, this is just a friendly reminder. We appreciate your working on the history of graduate studies information. We realize how busy this time of year is and how difficult some of this information is to access. If you have misplaced the questionnaire or have not gotten it, we will be happy to send another. We eagerly await your reply. If you have already replied, please send us a note so we can recheck our records. Thanks very much.

Jim Key

APPENDIX F

REMINDER:THIRD MAILING

October 19, 1995

Joe, this is just the second friendly reminder. We appreciate your working on the history of graduate studies information. We realize how busy this time of year is and how difficult some of this information is to access. If you have misplaced the questionnaire or have not gotten it, we will be happy to send another. We eagerly await your reply. If you have already replied, please send us a note so we can recheck our records. It is imperative that we have information from all agricultural education graduate programs, so we need to hear from you. If there is any way we can help, please let us know. Thanks very much.

Sincerely,

Dr. James P. Key
Oklahoma State

James I. M. Oyawiri
Oklahoma State

APPENDIX G

DATABASE FOR THE STUDY

DATABASE FOR TABLES 10, 11, 12, 13, AND 14

		1917 - 1937			1937 - 1957							1957 - 1977							1977 - 1990							1990 - 1995														
STATE	INSTITUTION	M S	M Ed	Ph D	M S	M Ag	M Ed	Ed S	Ed D	Ph D	Oth	M S	M Ag	M Ed	Ed S	Ed D	Ph D	Oth	M S	M Ag	M Ed	Ed S	Ed D	Ph D	Oth	M S	M Ag	M Ed	Ed S	Ed D	Ph D.	Oth	Tot 17-37	Tot 37-57	Tot 57-77	Tot 77-90	Tot 90-95	M S	M Ag	M Ed	Ed S	Ed D	Ph D.	Oth	GRAN TOTAL
AL	AUBURN UNIV																																										
AR	ARKANSAS STATE											72																								72	56						56	184
AR	UNIV ARKANSAS																		46		38	14	9			18		1	2	2					107	23	64		39	16	11			130
AZ	UNIV ARIZONA				1							10							40							29							1	10	40	29	80							80
CA	CAL POL S U -POM											147							308							39								147	308	39	494							494
CA	CAL POL S U -SLO											1							80							30								1	80	30	111							111
CA	UNIV CAL-DAVIS						109							180							134							36					109	180	134	36		459					459
CO	COLORADO STATE																																			12							12
CT	UNIV CONNECTICUT						13	5		1				33	8		3				28	10		2				7	2				19	44	40	9		81	25		6		112
FL	UNIV FLORIDA												20						27	124						15	25							20	151	40	42	169						211
GA	UNIV GEORGIA												29	48	11	24				53	46	16	37				24	132	41	5				112	152	202		106	226	68	66			466
IA	IOWA STATE UNIV	12			58							161					30		134				87			53				44		12	116	191	221	97	418	58			161		637
ID	UNIV IDAHO	7			16							58							55							31						7	16	58	55	31	167						167
IL	S ILLINOIS UNIV											16					2		72				4			22				7				18	76	29	110				13		123
IL	UNIV ILLINOIS								14	2						36	5						7	23		50				15			16	41	30	65	250		400	42	57	45		794
IL	W ILLINOIS UNIV																		20		10							8						30	8	20		18					38
IN	PURDUE UNIV																15		75					4		9								15	79	9	84				19		103
KS	KANSAS STATE U																		180							31									180	31	211						211
KY	UNIV KENTUCKY																		180							50									180	50	230						230
KY	W KENTUCKY U																																										
LA	LOUSIANA S U																		37				8	8		19				16					53	35	56				8	24		88
LA	SOUTHERN UNIV																																				58							58
MA	UNIV MASS																				13	2	3					4							18	4			17	2	3			22
MD	UNIV MD-E SHORE																		20							15									20	15	35							35
MD	UNIV MARYLAND											110					6		70					45										116	115		180				51		231
MI	MICHIGAN S U				3	8	1		2	13	74		3			3		55	56	69				18	67	74				21			101	231	210	95	133	80	1	3	2	107	311	637
MN	UNIV MINNESOTA	18		2	77					10		171		20			54		42		61			24		17		40		1	23		20	87	245	127	81	325		121		1	113		560
MO	NW MISSOURI S U											2		4					26		4													6	30		28		8					36
MO	UNIV MISSOURI	49	2	1	10		135		10					203		79	25				262	23	3	48				44	7	2	10		57	155	257	336	63	59		651	30	44	84		868
MS	MISSISSIPPI STATE				33		74				130	20		71	45			182	38		44	41	23	6	184	16	2	7	5	6	14	23		237	318	336	73	107	2	196	91	29	20	519	964
MT	MONTANA S U				13							85							28							9								13	85	28	9	135						135
NC	NC A&T STATE U				69							113							141							54								69	113	141	54	377						377
NC	NC STATE UNIV	6			7		68					70		120		2			22		37					5	1	20				6	75	192	59	26	104	1	245		2			352
ND	N DAKOTA S U																									3		21							24	3	21							24
NE	UNIV NEBRASKA	9			53							111							67							15						9	53	111	67	15	255						255
NH	NEW HAMPSHIRE																								45										45	3						48	48
NJ	RUTGERS UNIV																																						50			15		65
NM	UNIV NEW MEXICO											85							143							59								85	143	59	287						287
NY	CORNELL UNIV																		55					61	112	13				41	47			228	101	68				102	159	329
OH	OHIO STATE	23		1	88					32		314					175		327					120		66		4		66		24	120	489	447	136	818		4		394		1,216
OK	OKLAHOMA STAT	6			128				2			372			1	88			162	17			69			61	1			24		6	130	461	248	86	729	18		1	183			931
OR	OREGON STATE				9	3	2		1			37	4	38		10			2	4	75		2	5		5	17	28		1	1			15	89	88	52	53	28	143		14	6		244
PA	PENN STATE				101		20		10	12		16		133		43	16		27	5	108		12	32		9		25		1	22			143	208	184	57	153	5	286		66	82		592
RI	UNIV RHODE ISLAND																	134																134								134	134
SC	CLEMSON UNIV				22	3						23	114							124			12				59		2				25	137	136	61	45	300			14			359
SD	S DAKOTA S U	10			20									30							20							5			10	20	30	20	5	30		55					85
TN	UNIV TENN- MARTIN																		30							0									30	0	30							30
TN	TENNESSEE S U																		75							10									10								200
TN	UNIV TENN-KNOX				60							228							179							43							60	228	179	43	510						510
TN	TENN TECH UNIV																								2										2							2	2
TX	SAM HOUSTON S U						446							462							16							3					446	462	16	3		927					927
TX	SW TEXAS S U																				46							30							46	30			76					76
TX	TARLETON S U																		33												90				33	90	123							123
TX	TEXAS A&M UNIV																37		13	130	131		1	34		33	15	43		1	14				37	309	106	46	145	174		2	85		452
TX	TEXAS TECH UNIV				32		91					28		157					10		88					55							123	185	98	55	125		336					461
UT	UTAH STATE UNIV											35							60				1											35	61		95				1			95
VA	VPI & STATE UNIV											48			5	9			40			30	29			10			8	7	2		94	62	99	27	192			43	45	2		282
WA	WASHINGTON S U	4			9							109							157							22						4	9	109	157	22	301						301
WI	UW - MADISON																		33					24		6				2					57	8	39					26		65
WI	UW-PLATTEVILLE											44							110		12							7						44	122	7	154		19					173
WI	UW-RIVER FALLS											99						5	39						6	14								104	45	14	152					11		163
WV	W VIRGINIA UNIV																		79							28									79	28	107							107
WY	UNIV WYOMING											21			1	2			22					2		2									24	24	2	45				1	2	2		50
	GRAND TOTAL	144	2	4	809	14	959	5	39	70	204	2606	170	1499	74	293	423	491	3360	526	1173	136	216	547	614	1040	144	465	65	52	298	160	155	2252	5434	6372	2239	8510	968	4553	322	550	1357	1249	17,509

DATABASE FOR TABLE 15

		PROGRAM INCEPTION TILL 1990					1990 - 1995				
STATE	INSTITUTION	EDUCATIONAL METHODOLOGY	PSYCHOLOGY	RESEARCH	SUBJECT MATTER AG.	OTHER	EDUCATIONAL METHODOLOGY	PSYCHOLOGY	RESEARCH	SUBJECT MATTER AG.	OTHER
AL	AUBURN UNIV	5	2	4	3	1					
AR	ARKANSAS STATE						4	3	2	5	1
AR	UNIV ARKANSAS	4	1	2	3		4	1	3	2	
AZ	UNIV ARIZONA	4		3	5		4		2	5	3
CA	CAL POL S. U.-POM.	4	1	1	5		3	1	1	5	
CA	CAL POL S. U.-SLO	4	3	1	2	5	2			6	3
CA	UNIV CAL-DAVIS	5	2	4	3		3	1			3
CO	COLORADO STATE	5	2	4	3	1	5	2	4	3	1
CT	UNIV CONNETICUT	5	1	2	3	4	5	1	2	3	4
FL	UNIV FLORIDA	5	2	1	4	3	4	1	2	5	3
GA	UNIV GEORGIA	4	3	2	5	1	4	1	2	5	3
IA	IOWA STATE UNIV						1	3	2	4	
ID	UNIV IDAHO	5	1	4	3	2	5	1	3	2	4
IL	S. ILLINOIS UNIV	2		3	1		5	3	4	1	
IL	UNIV ILLINOIS	5					5	3	4	2	
IL	W. ILLINOIS UNIV	5	2	3	4	1	5	4	2	3	1
IN	PURDUE UNIV	5	2	1	4	3	5	2	1	4	3
KS	KANSAS STATE U.	5	3	2	4		5	3	2	4	
KY	UNIV KENTUCKY	5	1	1	3		5	1	3	2	
KY	W. KENTUCKY U.						5	3	2	4	
LA	LOUSIANA S. U.						1	3	4	2	
LA	SOUTHERN UNIV	1	3	4	2	5					
MA	UNIV MASS	3	2	1	4	5	4	1	2	3	5
MD	UNIV MARYLAND										
MI	MICHIGAN S. U.						1	2	4	3	5
MN	UNIV MINNESOTA	5	3	4	1	2	5	3	4	1	2
MO	NW MISSOURI S. U.	2	3	4	1		2	3	4	1	
MO	UNIV MISSOURI	1	2	4	3		1	3	4	2	
MS	MISSISSIPPI STATE	5	2	3	4						
MT	MONTANA S. U.	5	2	4	3		5	2	4	3	
NC	NC A&T STATE U.	1	4	2	3		1	4	2	3	
NC	NC STATE UNIV						2	4	3	1	
ND	N. DAKOTA S. U.	2	4	3	1		2	4	3	1	
ND	UNIV MD-E.SHORE	1		3	2		4		2	5	3
NE	UNIV NEBRASKA	1	4	3	2		5	4	3	2	
NH	NEW HAMPSHIRE	5	3	4	1		5	3	4	2	
NJ	RUTGERS UNIV	1	3	2	5	4					
NM	UNIV NEW MEXICO						1	3	2	5	4
NY	CORNELL UNIV	5	2	4	3		5	3	4	2	1
OH	OHIO STATE	5		4	3		5		4	3	
OK	OKLAHOMA STATE	5	1	4	2	3	5	1	4	2	3
OR	OREGON STATE	2	4	6	1	5	2	4	6	1	5
PA	PENN STATE						5		1		2, 4, 3
RI	UNIV RHODE ISLAND										
SC	CLEMSON UNIV	5	1	3	4	2	5	1	3	2	4
SD	S. DAKOTA S. U.	4	2	3	1	5	4	3	2	1	5
TN	UNIV TENN- MARTI	1	3	2	4						
TN	TENNESSEE S. U.						3	4	1	2	
TN	UNIV TENN-KNOX.	AgEd 5;ExtEd5	4 ; 2	2 ; 3	3 ; 4		5 ; 5	3 ; 2	2 ; 3	4 ; 4	
TN	TENN TECH UNIV	5	2	3	4						
TX	SAM HOUSTON S. U.	2	3	4	1		2	3	4	1	
TX	SW TEXAS S. U.	2		3	1		3	2	4	1	5
TX	TARLETON S. U.	2	4	3	1		2	4	3	1	
TX	TEXAS A&M UNIV	5	1	3	2	4	5	1	3	2	4
TX	TEXAS TECH UNIV	5	1	4	3	2	5	1	4	3	2
UT	UTAH STATE UNIV	4	3	2	1	5	4	3	2	1	5
VA	VPI & STATE UNIV	5	3	3	2		5	2	4	3	1
WA	WASHINGTON S. U.	2	5	1	3	4					
WI	UW - MADISON	1 M.S ; 2 Ph.D	2 ; 3	3 ; 1			5 ; 4	4 ; 3	3 ; 5		
WI	UW-PLATTEVILLE	3	4	2	1						
WI	UW-RIVER FALLS	2	4	3	1	4	2	4	3	1	5
WV	W. VIRGINIA UNIV	5	2	1	3	4	5			3	4
WY	UNIV WYOMING	4			5		4			5	
	MEAN	3.653846154	2.511111111	2.8	2.72	3.2609	3.735849057	2.47826087	2.97959184	2.74	3.345
	STD DEVIATION	1.557834286	1.079187873	1.1780302	1.309930673	1.4838	1.456430613	1.110337895	1.12712385	1.45419871	1.421

DATABASE FOR 16 AND 17

		ENROLLMENT FOR 1991								# OF FELLOWSHIPS/ ASSISTANTSHIPS FOR 1991							ENROLLMENT FOR 1995								# OF FELLOWSHIPS/ASSISTANTSHIPS FOR 1995							
STATE	INSTITUTION	M.S.	M.Ag.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other	Total	M.S.	M.Ag.	M.Ed.	Ed.D.	Ph.D.	Other	Total	M.S.	M.Ag.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other	Total	M.S.	M.Ag.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other	Total
AL	AUBURN UNIV			18		1		12	31	1			1			2								2								
AR	ARKANSAS STATE																2							2								
AR	UNIV ARKANSAS	44		4	1	2			51	2						2	42							42								
AZ	UNIV ARIZONA	6	4						10	1	1					2															1	1
CA	CAL POL S. U.-POM	40							40								53							53								
CA	CAL POL S. U.-SLO	41		3					44								39							39								
CA	UNIV CAL-DAVIS			15					15			1				1			6					6								
CO	COLORADO STATE			6					6			1				1		7	4			2		13			1			1		2
CT	UNIV CONNECTICUT			5	2				7										5	1				6								
FL	UNIV FLORIDA																6	13						19			7					7
GA	UNIV GEORGIA			47	26	4			77				1			1		8	29	16	6			59				1	1			2
IA	IOWA STATE UNIV	31					26		57	9				10		19	30	89				28		147	4					9		13
ID	UNIV IDAHO	28							28	2						2	25					3		28	1							1
IL	S. ILLINOIS UNIV	16					7		23	5				1		6	11					3		14	2							2
IL	UNIV ILLINOIS									3		1		1		5	25					10		35	6					2		8
IL	W ILLINOIS UNIV																		4					4								
ID	PURDUE UNIV			10			2		12								2					2		4	1							1
KS	KANSAS STATE U																22					6		28								
KY	UNIV KENTUCKY	15			1	3			19	1						1	25							25								
KY	W KENTUCKY U.																										1					1
LA	LOUSIANA S. U																								3							3
LA	SOUTHERN UNIV			5					5			1				1																
MA	UNIV MASS			1					1										1		1			2								
MD	UNIV MD-E.SHORE	20							20	1						1	15							15	3							3
MD	UNIV MARYLAND																										4			3		7
MI	MICHIGAN S. U.																18					32		50	5					8		13
MN	UNIV OF MINNESOT	27		71		2	22		122	2		1		11		14	8		20			10		38	3					2		5
MO	NW MISSOURI S. U.	4		3					7	1						1	1		7					8			1					1
MO	UNIV MISSOURI			60	18	2	16		96					3		3			42	12	1	8		63								
MS	MISSISSIPPI STATE	19	4	5					28								43			4	4	17		68	2					1		3
MT	MONTANA S. U.	7							7	2						2	10							10	2							2
NC	NC A&T STATE U.	15							15	3						3	15							15	4							4
NC	NC STATE UNIV																8	5	1		3			17	2		1					3
ND	N DAKOTA S. U.	10		14					24	2		1				3	2		33					35			2					2
NE	UNIV NEBRASKA	70							70	2						2	20							20	3							3
NH	NEW HAMPSHIRE							27	27						3	3							6	6							1	1
NJ	RUTGERS UNIV																															
NM	UNIV NEW MEXICO																30							30	6							6
NY	CORNELL UNIV																5					17	13	35	1					1		2
OH	OHIO STATE	48					52	13	113	6				20		26	50					51		101	5					10		15
OK	OKLAHOMA STATE	32	4			15			51				5			5	20	15			19			54	3				6			9
OR	OREGON STATE	4	2	26		2	4		38								2	10				2		14		2				2		4
PA	PENN STATE																8		6		1	17		32	7		3			12		22
RI	UNIV RHODE ISLAND																															
SC	CLEMSON UNIV					3		17	20				1		6	7		10			3			13				5				5
SD	S. DAKOTA S. U.			5					5										6					6			4					4
TN	UNIV TENN- MARTIN	2							2																							
TN	TENNESSEE S. U.																10							10								
TN	UNIV TENN-KNOX	55							55	2						2	45							45	2							2
TN	TENN TECH UNIV							3	3																							
TX	SAM HOUSTON S. U.			4					4										2					2								
TX	SW TEXAS S. U.			25					25			2				2			22					22	3							3
TX	TARLETON S. U.	12							12	2						2	40							40								
TX	TEXAS A&M UNIV	10	7	14			10		41	2	2	2		3		9	10	6	7		2	21		46	3	3	3			8		17
TX	TEXAS TECH UNIV	2		10					12	2		2				4	25							25	6				3			9
UT	UTAH STATE UNIV	29						30	59								8							8	5							5
VA	VPI & STATE UNIV	20				4			24	1			3			4	14					5		19	4					2		6
WA	WASHINGTON S. U	17							17								3							3								
WI	UW - MADISON	37					17		54								4							4								
WI	UW-PLATTEVILLE	16		2					18	5						5	1		3					4	1							1
WI	UW-RIVER FALLS	31						1	32	2						2	39						7	46							1	1
WV	W VIRGINIA UNIV	32							32								11							11								
WY	UNIV WYOMING	1							1								5							5	1							1
	TOTAL ENROLLMENT	741	21	335	48	38	156	100	1457																							
		TOT. ASSISTANTSHIPS/ FELLOWSHIPS								59	3	12	11	49	9	143																
																	750	163	198	33	40	234	26	1444								
																	TOT. ASSISTANTSHIPS/ FELLOWSHIPS								88	17	20	1	10	61	3	200

DATABASE FOR TABLE 17

		ENROLLMENT								# OF FELLOWSHIPS/ ASSISTANTSHIPS							
ST	INSTITUTION	M.S.	M.Ag.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Oth	Tot	M.S.	M.Ag.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Oth	Tot
AL	AUBURN UNIV																
AR	ARKASAS STATE	2							2								
AR	UNIV ARKANSAS	42							42	3							3
AZ	UNIV ARIZONA															1	1
CA	CAL POL S. U.-POM.	53							53								
CA	CAL POL S. U.-SLO	39							39								
CA	UNIV CAL-DAVIS			6					6								
CO	COLORADO STATE		7	4			2		13			1			1		2
CT	UNIV CONNETICUT			5	1				6								
FL	UNIV FLORIDA	6	13						19		7						7
GA	UNIV GEORGIA		8	29	16	6			59				1	1			2
IA	IOWA STATE UNIV	30	89				28		147	4					9		13
ID	UNIV IDAHO	25					3		28	1							1
IL	S. ILLINOIS UNIV	11					3		14	2							2
IL	UNIV ILLINOIS	25					10		35	6					2		8
IL	W. ILLINOIS UNIV			4					4								
IN	PURDUE UNIV	2					2		4	1							1
KS	KANSAS STATE U.	22					6		28								
KY	UNIV KENTUCKY	25							25	1							1
KY	W. KENTUCKY U.											1					1
LA	LOUSIANA S. U.								0							3	3
LA	SOUTHERN UNIV																
MA	UNIV MASS			1		1			2								
MD	UNIV MD-E.SHORE	15							15	3							3
MD	UNIV MARYLAND	DP 1990															
MI	MICHIGAN S. U.	18					32		50	5					8		13
MN	UNIV MINNESOTA	8		20			10		38	3					2		5
MO	NW MISSOURI S. U.	1		7					8			1					1
MO	UNIV MISSOURI			42	12	1	8		63			4			3		7
MS	MISSISSIPPI STATE	43			4	4	17		68	2					1		3
MT	MONTANA S. U.	10							10	2							2
NC	NC A&T STATE U.	15							15	4							4
NC	NC STATE UNIV	8	5	1		3			17	2		1					3
ND	N. DAKOTA S. U.	2		33					35			2					2
NE	UNIV NEBRASKA	20							20	3							3
NH	NEW HAMPSHIRE							6	6							1	1
NJ	RUTGERS UNIV																
NM	UNIV NEW MEXICO	30							30	6							6
NY	CORNELL UNIV	5					17	13	35	1					1		2
OH	OHIO STATE	50					51		101	5					10		15
OK	OKLAHOMA STATE	20	15			19			54	3				6			9
OR	OREGON STATE	2	10				2		14		2				2		4
PA	PENN STATE	8		6		1	17		32	7		3			12		22
RI	UNIV RHODE ISLAND																
SC	CLEMSON UNIV		10			3			13		5						5
SD	S. DAKOTA S. U.			6					6								
TN	UNIV TENN- MARTIN	DP 1993															
TN	TENNESSEE S. U.	10							10								
TN	UNIV TENN-KNOX.	45							45	2							2
TN	TENN TECH UNIV																
TX	SAM HOUSTON S. U.			2					2								
TX	SW TEXAS S. U.			22					22			4					4
TX	TARLETON S. U.	40							40	3							3
TX	TEXAS A&M UNIV	10	6	7		2	21		46	3	3	3			8		17
TX	TEXAS TECH UNIV	25							25	6				3			9
UT	UTAH STATE UNIV	8							8	5							5
VA	VPI & STATE UNIV	14					5		19	4					2		6
WA	WASHINGTON S. U.	3							3								
WI	UW - MADISON	4							4								
WI	UW-PLATTEVILLE	1		3					4	1							1
WI	UW-RIVER FALLS	39						7	46							1	1
WV	W. VIRGINIA UNIV	11							11								
WY	UNIV WYOMING	5							5	1							1
	TOT. ENROLLMENT	752	163	198	33	40	234	26	1446								
		TOT ASSIST/ FELLOWSHIPS								86	17	20	1	10	61	5	200

DP--Dropped Program

DATABASE FOR TABLE 19

		INCEPTION OF PROGRAM TILL 1990								1990 - 1995								
STATE	INSTITUTION	T & R (U.L)	T&H S&C C	Coop. Ext	Gov"t Serv	E.O. L	A.O.L	Sales Mgt	S. P(Ag&Ext)	Other	T & R (U.L)	T&H S&C C	Coop. Ext	Gov"t Serv	E.O.L	A.O.L	Sales Mgt	S.P (Ag&Ext)	Other
AL	AUBURN UNIV	6	1	2	3		7	4	5										
AR	ARKANSAS STATE	5	1	2	3	4	6	7	8		5	1	2	3	4	6	7	8	
AR	UNIV ARKANSAS	6	1	2	3			5	4		6	1	2	5			3	4	
AZ	UNIV ARIZONA	5	1	3				2	4			1	2				3		2
CA	CAL POL S. U.-POM.		1	4				2		3		1	4				2		3
CA	CAL POL S. U.-SLO		1		2			3				1		2			3		
CA	UNIV CAL-DAVIS	3	1	2	6	7	8	5	4		2	1	3	4	6	7	8	5	
CO	COLORADO STATE	6	1	2	3		7	4	5		7	2	2	3			5	6	4
CT	UNIV CONNECTICUT	5	1	2	4			5	6		5	1	2	4			5	6	
FL	UNIV FLORIDA		1	2	3			4	5			1	2	3			4	5	
GA	UNIV GEORGIA	4	1	2	3			6	5	7	2	1	6	4			7	3	5
IA	IOWA STATE UNIV	1	2	4	5	8	7	6	3		1	4	2	6			5	3	
ID	UNIV IDAHO	4	1	2					3		4	1	2					3	5
IL	S. ILLINOIS UNIV	6	1	2	3			4	5		3	1	6	3		6	2	3	
IL	UNIV ILLINOIS	3	1	2	4				5		3	1	2	4					
IL	W. ILLINOIS UNIV		1		4			2	5	3		4							
IN	PURDUE UNIV	3	1	2	6			4	5	7		1	2					3	
KS	KANSAS STATE U.	5	1	2	7	9	8	3	6	4	5	1	2	7	9	8	3	6	4
KY	UNIV KENTUCKY	5	1	2	3			4			6	1	2	3			5		4
KY	W. KENTUCKY U.	6	1	5	4	8	9	3	2	7	6	1	5	4	8	9	3	2	7
LA	LOUSIANA S. U.	2	3	1	6			5	4		2	3	1	6			5	4	
LA	SOUTHERN UNIV	5	1	2	3			4			4	1	2	3			5		
MA	UNIV MASS	3	1	2					5	4	5	1	2						
MD	UNIV MD-E.SHORE	4	1	2	3					5	3			2					1
MD	UNIV MARYLAND	4	1	2	5	8	7	9	6	3	DP 1990								
MI	MICHIGAN S. U.	3	1	2	4	7	7	6	5	9	3	1	2	4	7	7	6		5
MN	UNIV MINNESOTA	4	1	3	6			7	5	2	5	1	2	6			7	5	4
MO	NW MISSOURI S. U.	4	1	2	3	8	7	6	5		6	1	4	5	7	8	2	3	
MO	UNIV MISSOURI	2	1	5	3			4			2	1	4	3			5		
MS	MISSISSIPPI STATE	3	2	1	4			6	5		3	2	1	4			6	5	
MT	MONTANA S. U.	4	1	2	3						3	1	2	4					5
NC	NC A&T STATE U.	6	1	2	3	8	9	5	4	7	7	1	3	4	6		5	6	2
NC	NC STATE UNIV		1	3	2			4				1	3	2			4		
ND	N. DAKOTA S. U.		1	2	5			3	4		6	1	2	5			4	3	
NE	UNIV NEBRASKA	4	1	2				5	3		4	1	2				3	5	
NH	NEW HAMPSHIRE		1	2						3		1	2						3
NJ	RUTGERS UNIV	4	3	2					1										
NM	UNIV NEW MEXICO	6	1	2	3	8	7	5	4	9	6	1	2	3	8	7	5	4	9
NY	CORNELL UNIV	1	2	3					4		1	2	3	6			5	4	
OH	OHIO STATE	1	2	3	6			4	5		1	2	3				5	4	
OK	OKLAHOMA STATE	1	5	4	6			7	2	3	1	2	3	6			7	4	5
OR	OREGON STATE	3	1	2	3			4	6		4	1	5	3			2		
PA	PENN STATE	1	4	5	6			4.0	5.2	3	1	3		4					6
RI	UNIV RHODE ISLAND										9	1	4	8			5		6
SC	CLEMSON UNIV	7	1	4	2	8	6	5	3		6	1	2	3	8	7	4	5	
SD	S. DAKOTA S. U.		1	2	5			3	4		6	1	2	5			4	3	
TN	UNIV TENN- MARTIN	2	1	3	4														
TN	TENNESSEE S. U.										6	3	2	1			4	5	
TN	UNIV TENN-KNOX.	6	5	1	3			4	2			6	1	2	5		4	3	
TN	TENN TECH UNIV		2																
TX	SAM HUSTON S. U.	6	1	2	3	8	7	4	5		6	1	2	3	8	7	4	5	
TX	SW TEXAS S. U.		1	3	5			4	2		6	1	2	4			5	3	
TX	TARLETON S. U.	6	1	2	4	8	7	3	5		6	1	3	2	9	8	4	5	
TX	TEXAS A&M UNIV	6	1	2	3	9	8	5	4	7	5	1	2	7	9	8	3	6	4
TX	TEXAS TECH UNIV	5	1	3	4	7	8	2	9	6	6	1	2	3	7	8	4	9	5
UT	UTAH STATE UNIV	7	1	2	3	8	6	4	4										
VA	VPI & STATE UNIV	3	1	2	5	5	5	4	4		2	1	3	4		6		5	
WA	WASHINGTON S. U.		1	6	5			2	4	3		1	4	5			2	3	6
WI	UW - MADISON	1	5	2	3	6	7		4		1		4	2				3	
WI	UW-PLATTEVILLE	4	1	2	5	7	8	3	6		4	1	2	5	7	8	3	6	
WI	UW-RIVER FALLS	4	1	2	6			5	3		4	1	3				5	2	
WV	W. VIRGINIA UNIV	6	1	2	3			4		5		1	2	3			4		5
WY	UNIV WYOMING	2	1	3						4		1							
	MEAN	4.1	1.39344262	2.485517241	3.980392157	7.421052632	7.190476191	4.3125	4.40425532	4.962381	4.1111111	1.4	2.61538462	3.958521739	7.2	7.33333333	4.295454545	4.41025641	4.54545455
	STD DEVIATION	1.752549164	1.004634071	1.01247512	1.288257677	1.261207071	0.980767435	1.48977008	1.469391688	2.15583372	2.02509308	0.973728991	1.140241568	1.53415227	1.473576795	0.899735411	1.503167902	1.534136972	1.765469639

T & R (U.L) = Teaching and Research (University Level); T at H & C.C = Teaching at High School and Community Colleges; E.O.L = Educational Oganizational Lobbyist; A.O.L = Agricultural Organizational Lobbyist; S.P = Supervisory Position; DP= Dropped Prog

DATABASE FOR TABLE 20

		MINIMUM				GPA			MINIMUM			GPA			(Maintain)
STATE	INSTITUTION	M.S.	MAg.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other	M.S.	MAg.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other
AL	AUBURN UNIV														
AR	ARKANSAS STATE														
AR	UNIV ARKANSAS	2.7		2.7	3	3	3.25		3		2.85	3	3	3	
AZ	UNIV ARIZONA	3						3MAGED	3						3MAGED
CA	CAL POL S.U.-POM.	2.75 Last 90 units							3						
CA	CAL POL S.U.-SLO	2.75							3						
CA	UNIV CAL-DAVIS			3											
CO	COLORADO STATE	3	3	3	3	3	3		3	3	3	3	3	3	
CT	UNIV CONNECTICUT			2.6	2.6		3				3	3		3	
FL	UNIV FLORIDA	3	3						3	3					
GA	UNIV GEORGIA			2.6	2.6	3					3	3	3		
IA	IOWA STATE UNIV	2.7					3								
ID	UNIV IDAHO	2.8							3						
IL	S. ILLINOIS UNIV	2.5							3					3	
IL	UNIV ILLINOIS	4							4				4	4	
IL	W. ILLINOIS UNIV			2.8					3		3				
IN	PURDUE UNIV	3					3		3					3	
KS	KANSAS STATE U.	3					3		3					3	
KY	UNIV KENTUCKY	2.5					3								
KY	W. KENTUCKY U.			2.75							3				
LA	LOUSIANA S. U.	3	(Proba adm with GPA 2.55)				3		3					3	
LA	SOUTHERN UNIV										3				
MA	UNIV MASS			2.75		3					3		3		
MD	UNIV MD-E.SHORE	2.5							3						
MD	UNIV MARYLAND	3	Dropped Program 1990				3		3					3	
MI	MICHIGAN S. U.	3					3		3					3	
MN	UNIVMINNESOTA	2.8		2.5		3	3		2.8		2.8		2.8	2.8	
MO	NW MISSOURI S. U.	2.5		2.75	3.25				3		3	3.25			
MO	UNIV MISSOURI	3		3	3	3	3		3		3	3	3	3	
MS	MISSISSIPPI STATE	2.75			3		3								
MT	MONTANA S. U.	3							3						
NC	NC A&T STATE U.								3						
NC	NC STATE UNIV	3	3	3	3.5	3.5			3	3	3	3	3		
ND	N. DAKOTA S. U.	2.7		2.7					3		3				
NE	UNIV NEBRASKA	3							3						
NH	NEW HAMPSHIRE							3							3
NJ	RUTGERS UNIV														
NM	UNIV NEW MEXICO	2.5							3						
NY	CORNELL UNIV	2.7	NA	NA	NA	NA	2.7								
OH	OHIO STATE	2.7		2.7			2.7		3		3			3	
OK	OKLAHOMA STATE	2.8	2.8			3			3	3			3		
OR	OREGON STATE	3	3	3		3	3		3	3	3		3	3	
PA	PENN STATE	2.8	2.8	2.5		3.4	3.4		3	3	3		3	3	
RH	UNIV RHODE ISLAND	NOT GIVEN													
SC	CLEMSON UNIV	2.7	2.7			3.5									
SD	S. DAKOTA S. U.			3											
TN	UNIV TENN- MARTIN	Dropped Program 1993													
TN	TENNESSE S. U.	2							3						
TN	UNIV TENN-KNOX.	2.7							3						
TN	TENN TECH UNIV	NOT GIVEN													
TX	SAM HOUSTON S. U.			2.5							3				
TX	SW TEXAS S. U.	3		2.75					3		2.5				
TX	TARLETON S. U.	2.5							2.5						
TX	TEXAS A&M UNIV	SLIDING SCALE- DEPENDS ON GRE SCORES							3	3	3		3	3	
TX	TEXAS TECH UNIV	2.75							3						
UT	UTAH STATE UNIV	3			3				3			3			
VA	VPI & STATE UNIV	2.75 Last 60 hours			2.75	2.75	2.75		3			3	3	3	
WA	WASHINGTON S. U.	3		3					3		3				
WI	UW - MADISON	3					3		3					3	
WI	UW-PLATTEVILLE	2.75		2.75											
WI	UW-RIVER FALLS	2.75						2.75MA	3						3.0MAT
WV	W. VIRGINIA UNIV	2.75													
WY	UNIV WYOMING	3				3	3		3				3.25	3.25	

DATABASE FOR TABLE 21

		MINIMUM GRE SCORE																										
		VERBAL							QUANTITATIVE							ANALYTICAL							GRE COMPOSITE						
STATE	INSTITUTION	M.S.	MAg.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other	M.S.	MAg.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other	M.S.	M.Ag.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other	M.S.	M.Ag.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other
AL	AUBURN UNIV																											
AR	ARKANSAS STATE		820 V&Q					NA		820V&Q					NA		NA					NA		790				NA
AR	UNIV ARKANSAS	NOT REQUIRED																										
AZ	UNIV ARIZONA	NA						NA																				
CA	CAL POLY S U -POM	NOT REQUIRED																										
CA	CAL POLY S U -SLO	NOT REQUIRED																										
CA	UNIV CAL-DAVIS	GRE REQUIRED BUT NO VALUE GIVEN																										
CO	COLORADO STATE	DEPENDS ON GPA SCORES																										
CT	UNIV CONNECTICUT	GRE IS REQUIRED FOR Ph D SCORES ARE EVALUATED ALONG WITH GPA, RECOMMENDATIONS, APPLICATION & REFERENCES NO SPECIFIC MINIMUMS ARE SET																										
FL	UNIV FLORIDA	500	500						500	500						NA	NA						1000	1000				
GA	UNIV GEORGIA			400	450	500					400	450	500					NA	NA	NA					850	900	1000+*		
IA	IOWA STATE UNIV	BLANK																										
ID	UNIV IDAHO	NOT REQUIRED																										
IL	S ILLINOIS UNIV	BLANK																										
IL	UNIV ILLINOIS	NOT REQUIRED																										
IL	W ILLINOIS UNIV																						1050		1050			
IN	PURDUE UNIV																						1000					1000
KS	KANSAS STATE U	BLANK																										
KY	UNIV KENTUCKY																						800V&Q					1000
KY	W KENTUCKY U																								1200			
LA	LOUISIANA S U	400					400		400					400									1000	(Proba adm with GRE 870)				1000
LA	SOUTERN UNIV																											
MA	UNIV MASS	NOT REQUIRED																										
MD	UNIV MD-E SHORE	BLANK																										
MD	UNIV MARYLAND	NOT REQUIRED																										
MI	MICHIGAN S U	NOT REQUIRED																										
MN	UNIV MINNESOTA	NA		NA					450		NA		450	450		450		NA		450	450				NA		NA	NA	
MO	NW MISSOURI S U	300		700V&Q	700V&Q				300																			
MO	UNIV MISSOURI						500							500														1400
MS	MISSISSIPPI STATE	BLANK																										
MT	MONTANA STATE	BLANK																										
NC	NC A&T STATE U																											
NC	NC STATE UNIV	NA	NA	NA	NA	NA																						
ND	N DAKOTA S U	NOT REQUIRED																										
NE	UNIV NEBRASKA	BLANK																										
NH	NEW HAMPSHIRE							400							350							400						1160
NJ	RUTGERS UNIV																											
NM	UNIV NEW MEXICO	N/A							N/A							N/A							N/A						
NY	CORNELL UNIV	470	NA	NA	NA	NA	480																					
OH	OHIO STATE	BLANK																										
OK	OKLAHOMA STATE																										1050	
OR	OREGON STATE	NOT REQUIRED																										
PA	PENN STATE	800q&v		800q&v			1000	1000															800		800		1000	1000
RI	UNIV RHODE ISLAND																											
SC	CLEMSON UNIV																										1450	
SD	S DAKOTA S U	BLANK																										
TN	UNIV TENN-MARTIN	DROPPED PROGRAM																					650					
TN	TENNESSEE S U																						870					
TN	UNIV TENN-KNOX	NOT REQUIRED																										
TN	TENN TECH UNIV																											
TX	SAM HOUSTON S U																								800			
TX	SW TEXAS S U																								950			
TX	TARLETON S U	BLANK																										
TX	TEXAS A&M UNIV	SLIDING SCALE DEPENDS ON GPA																										
TX	TEXAS TECH UNIV	NOT REQUIRED																										
UT	UTAH STATE UNIV	500							500							500							1000V&Q					
VA	VPI & STATE UNIV	BLANK																										
WA	WASHINGTON S U	900V&Q		900V&Q																			900		900			
WI	UW - MADISON																											
WI	UW PLATTEVILLE	NOT REQUIRED																										
WI	UW-RIVER FALLS	NOT REQUIRED																										
WV	W VIRGINIA UNIV	NOT REQUIRED																										
WY	UNIV WYOMING																						900				1000	1000

DATABASE FOR TABLE 21

		MINIMUM		MAT			SCORE		MINIMUM		OTHER		TEST		
STATE	INSTITUTION	M.S.	MAg.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other	M.S.	MAg.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other
AL	AUBURN UNIV														
AR	ARKANSAS STATE		35					NA							
AR	UNIV ARKANSAS	NA		NA	NA	NA	NA								
AZ	UNIV ARIZONA	NOT REQUIRED													
CA	CAL POL S. U.-POM.	NA							WPE8/12						
CA	CAL POL S. U.-SLO	NOT REQUIRED							NONE						
CA	UNIV CAL-DAVIS	NOT REQUIRED													
CO	COLORADO STATE	NA													
CT	UNIV CONNECTICUT	NOT REQUIRED													
FL	UNIV FLORIDA	BLANK													
GA	UNIV GEORGIA			44	48	NA							NA		
IA	IOWA STATE UNIV	NOT REQUIRED													
ID	UNIV IDAHO	NOT REQUIRED													
IL	S. ILLINOIS UNIV	NOT REQUIRED													
IL	UNIV ILLINOIS	NOT REQUIRED													
IL	W. ILLINOIS UNIV	NA		NA											
IN	PURDUE UNIV	NOT REQUIRED													
KS	KANSAS STATE U.	BLANK													
KY	UNIV KENTUCKY	NOT REQUIRED													
KY	W. KENTUCKY U.			NA							450GMAT				
LA	LOUSIANA S. U.	NA					NA		NA					NA	
LA	SOUTHERN UNIV														
MA	UNIV MASS	NOT REQUIRED													
MD	UNI MD-E.SHORE	NOT REQUIRED													
MD	UNIV MARYLAND	25%tile					50%tile								
MI	MICHIGAN S. U.	Written Examination designed to demonstrate writing skills													
MN	UNIV MINNESOTA	>40%tile		NA		NA	NA								
MO	NW MISSOURI S. U.	NOT REQUIRED													
MO	UNIV MISSOURI			Var											
MS	MISSISSIPPI STATE	NOT REQUIRED													
MT	MONTANA S. U.	BLANK													
NC	NC A&T STATE U.	BLANK													
NC	NC STATE UNIV	NA	NA	NA	NA	NA									
ND	N. DAKOTA S. U.	32-33		32/33											
NE	UNIV NEBRASKA														
NH	NEW HAMPSHIRE							75%tile							
NJ	RUTGERS UNIV														
NM	UNIV NEW MEXICO	N/A							N/A						
NY	CORNELL UNIV	47					48								
OH	OHIO STATE	BLANK													
OK	OKLAHOMA STATE					40									
OR	OREGON STATE	NOT REQUIRED													
PA	PENN STATE	NA	NA	NA					Toefl 550	Toefl 550	Toefl 550		Toefl 550	Toefl 550	
RI	UNIV RHODE ISLAND	NOT GIVEN													
SC	CLEMSON UNIV														
SD	S. DAKOTA S. U.	NOT REQUIRED													
TN	UNIV TENN- MARTIN	DROPPED PROGRAM													
TN	TENNESSEE S. U.	25													
TN	UNIV TENN-KNOX								525TOEFL						
TN	TENN TECH UNIV														
TX	SAM HOUSTON S. U.	NOT REQUIRED													
TX	SW TEXAS S. U.	NOT REQUIRED													
TX	TARLETON S. U.	NOT REQUIRED													
TX	TEXAS A&M UNIV	NOT REQUIRED													
TX	TEXAS TECH UNIV	NOT REQUIRED													
UT	UTAH STATE UNIV	43							NA						
VA	VPI & STATE UNIV	BLANK													
WA	WASHINGTON S. U.	NOT REQUIRED													
WI	UW - MADISON								** For Ph.D logical and literate writing ability profile **						
WI	UW-PLATTEVILLE	NOT REQUIRED													
WI	UW-RIVER FALLS	NOT REQUIRED													
WV	W. VIRGINIA UNIV	NOT REQUIRED													
WY	UNIV WYOMING	NA				NA	NA								

DATABASE FOR TABLE 22

		MINIMUM WORK / TEACHING EXPERIENCE							RESIDENCY (YRS. OR SEM. HRS. COURSES)							PROGRAM (SEM. HRS. COURSES)							THESIS SEMESTER HRS).						
STATE	INSTITUTION	M.S.	MAg.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other	M.S.	MAg.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other	M.S.	MAg.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other	M.S.	MAg.	M.Ed.	Ed.S.	Ed.D.	Ph.D.	Other
AL	AUBURN UNIV																												
AR	ARKANSAS STATE		NA					NA		NA					NA		30					33		6					6 optional
AR	UNIV ARKANSAS	0			0	3YRS	3YRS	3YRS	6SmHrs				2YRS	2YRS		33		30	30	66			6				18	18	
AZ	UNIV ARIZONA							1								30						32	3--4						NA
CA	CAL POL S U -POM															30													
CA	CAL POL S U -SLO	NONE							NONE							30							optional						
CA	UNIV CAL-DAVIS	BLANK																											
CO	COLORADO STATE	3 YEARS OF TEACHING							2 CONTINOUS SEMESTERS									32			87								
CT	UNIV CONNECTICUT													1 Yr				30	30		39								
FL	UNIV FLORIDA								Semester	7Hrs						36	36						3--6						
GA	UNIV GEORGIA					3Yrs					40Sem	30Sem	2Qtrhrs, 10 Hrs/Qtr (7 S H)			36	36	40	30	40 S. H	80 Beyond B.S				5N RMD	5RMD	10 S.H		
IA	IOWA STATE UNIV						3YRS							1YR		30					80		6					10	
ID	UNIV IDAHO															22							8						
IL	S ILLINOIS UNIV															30					64+RES								
IL	UNIV ILLINOIS						3Yrs		1 Sem					1Sem		32					64		8					32	
IL	W ILLINOIS UNIV										12 S.Hrs					32		32							2				
IN	PURDUE UNIV	BLANK																											
KS	KANSAS STATE U.						X							1YR		30					60		6 optl					30	
KY	UNIV KENTUCKY	BLANK																											
KY	W. KENTUCKY U																	30							6				
LA	LOUSIANA S U	NA					NA		NA					1YR		36NT24T					90 Beyond B S.		6					12	
LA	SOUTHERN UNIV																												
MA	UNIV MASS			1Yr		3Yrs							18 semhr					33	30	36					None		18		
MD	UNIV MD-E SHORE								1Yr							24							6						
MD	UNIV MARYLAND	1Yr	Dropped Program 1990				2Yrs		1Yr							30													
MI	MICHIGAN S U	3YRS					3YRS							24semhr		30					45-60		3--6					24	
MN	UNIV MINNESOTA	NONE											1 Qtr	1 Qtr		44 Qtr Hr		45		108	90		6		3		36	36	
MO	NW MISSOURI S U	NOT REQUIRED							24Hrs		24Hrs	24Hrs				32		32	32 Post MED				5		1	2--6			
MO	UNIV MISSOURI										1Yr			3Yrs															
MS	MISSISSIPPI STATE								1YR			1YR	1YR	3YRS		24			57	70	70		6			3	20	20	
MT	MONTANA S U	BLANK														30													
NC	NC A&T STATE U	NA							Full-Time or Part-Time Enrollment							33							3						
NC	NC STATE UNIV	NA	NA	NA	NA	NA			NA	NA	NA	NA	1YR			36	36	36	60	90			6	NA	NA	NA	12		
ND	N DAKOTA S U	NA		2-3YRS					15		15					30		30					6--12						
NE	UNIV NEBRASKA	BLANK							NONE																				
NH	NEW HAMPSHIRE							3Yrs							1Yr							30							6
NJ	RUTGERS UNIV																												
NM	UNIV NEW MEXICO	N/A							N/A							30T/32N													
NY	CORNELL UNIV	3YRS					3YRS		2 SEM. + THESIS					6 SEMESTERS (FULL-TIME)															
OH	OHIO STATE			2Yrs			3Yrs							24 S. Hrs		30 S.Hrs		34 S. Hrs		60 S.Hrs			2S.Hrs		2S.Hrs			20 S. Hrs	
OK	OKLAHOMA STATE					3Yrs.							1Yr.			24	36			50			6				10		
OR	OREGON STATE	2Yrs	2Yrs	2Yrs		3Yrs	3Yrs		30Hrs	30Hrs	30Hrs		36Hrs	36Hrs		45qt hrs	45	45		220	220						24 qt hrs	36qt hrs	
PA	PENN STATE	NA	NA	NA		2YRS	2YRS		20CR	20CR	20CR		30CR	2 SEM		30	30	30		90	75		6	3+PrP	6		15Min	12Max	
RI	UNIV RHODE ISLAND	NOT GIVEN																											
SC	CLEMSON UNIV	BLANK																											
SD	S DAKOTA S U										22-25							32							3				
TN	UNIV TENN- MARTIN	DROPPED PROGRAM 1993							18																				
TN	TENNESSEE S U	0														26							4						
TN	UNIV TENN-KNOX	NA							NA							24 T; 30 NT							6T						
TN	TENN TECH UNIV																												
TX	SAM HOUSTON S U			NA							NA							36							0				
TX	SW TEXAS S U			NA							NA							36											
TX	TARLETON S U	NA														30							6						
TX	TEXAS A&M UNIV					3Yrs	3Yrs		1 Sem	12Hrs	12Hrs		30Hrs	1Yr		32	36	36		64	64		4				12	12	
TX	TEXAS TECH UNIV	NONE														36							6						
UT	UTAH STATE UNIV	NA							18qtrs							45 qtrs							9 qtrs						
VA	VPI & STATE UNIV												2SEM	2SEM		30				90SH	90SH		6 SH				20-30	20-40	
WA	WASHINGTON S U	NONE		NONE					NONE		NONE					23		31					7		4				
WI	UW - MADISON								32 WEEKS					96WEEKS		24credits							* M.S. 3 hrs seminar paper; 6 hrs thesis or 30hrs no thesis optio						
WI	UW-PLATTEVILLE	BLANK																											
WI	UW-RIVER FALLS															30						30	1--3						1--3
WV	W. VIRGINIA UNIV															24							6						
WY	UNIV WYOMING												2Yrs	2Yrs		26				60	60		4				12	12	

VITA 2

James Imene Mudiare Oyawiri

Candidate for the Degree of

Doctor of Education

Thesis: HISTORICAL ASPECTS OF GRADUATE PROGRAMS IN AGRICULTURAL/EXTENSION EDUCATION IN THE UNITED STATES

Major Field: Agricultural Education

Biographical:

Personal Data: Born in Sapele, Delta State, Nigeria, June 20, 1957, the son of Comfort O. and the late Michael A. Oyawiri.

Education: Graduated from St. Peter Claver's Grammar School, Aghalokpe-Sapele, Nigeria, June, 1974; received the General Certificate of Education, Advanced Level from St. Patrick's College, Asaba, Delta State, Nigeria, June, 1976; received the Bachelor of Agriculture Degree in Agricultural Economics from the University of Ife, Ile-Ife, Oyo State, June, 1984; received the Master of Science in Agricultural Industries (Ag. Econs emphasis) from the University of Wisconsin, Platteville, Wisconsin, August 1990; completed requirements for the Doctor of Education Degree in Agricultural Education at Oklahoma State University, May, 1996.

Professional Experience: Line Worker, Oberlin Color Press, 1993-present, Stillwater, Graduate Research Assistant, Department of Agricultural Industries, UW-Platteville, 1989-90; Tutor, Special Services, UW-Platteville, 1989-90; Housekeeper, Student Center, UW-Platteville, 1989-90; Monitoring and Evaluation Coordinator, Agricultural Project Monitoring and Evaluation Unit, Benin City, Nigeria, 1987-92; Area Marketing Manager, Tropical farming and Food Processing Co., Lagos, Nigeria, 1985-87; Agricultural Officer, Lower Benue River Basin

Development Authority, Otukpo, Nigeria, 1984-85; Science Teacher, Chude Girls Grammar School, Sapele, Nigeria, 1978-79; Laboratory Technician, Guinness (Nig) Ltd, Benin City, Nigeria, 1974-76; Laboratory Assistant, Chudes Girls Grammar School, Sapele, Nigeria, 1973-74;

Professional Organization: Member, National Agric-Marketing Association, UW-P Chapter; Member, Nigerian National Farmer's Cooperative Union, Member, Association of Agricultural Economics, Unife Chapter; Member, Ag. Education Graduate Student Association, AgEd Dept, Oklahoma State University.