PROFESSIONAL EDUCATION COMPETENCIES NEEDED BY AGRICULTURAL TEACHERS IN THE MID-1990S

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by

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TABLE OF CONTENTS

Chapter		Page
I.	INTRODUCTION	1
	Statement of the Problem	2
	Purpose of the Study	3
	Objectives of the Study	3
	Definition of Terms	4
	Assumptions	6
	Limitations of the Study	7
II.	REVIEW OF LITERATURE	8
	Background	8
	Coping with Change	9
	Agricultural Teachers Make It Happen	11
	Past Agricultural Teacher Competency Studies.	13
	Future Competencies of Agricultural Teachers.	18
	Summary	23
III.	DESIGN AND METHODOLOGY	25
	Type of Research	26
	The Study Population	26
	Development of the Instrument	27
	Pilot Study	39
	Collection of Data	31
	Analysis of Data	31
IV.	PRESENTATION AND ANALYSIS OF DATA	33
	Introduction	33
	Description of Respondents	34
	Findings of the Perceived Presently Held Competency Levels and The Competency Levels Needed in the Future	39
	Planning, Development and Evaluation of Local Programs	39
	Instructional Planning	41
	Teaching Methods and Techniques	45
	Instructional Evaluation	50
	Departmental Management	52
	Guidance	55
	School-Community Relations	58

Chapter Page

National FFA Organization 61
Adult Education Program 66
Supervised Agricultural Experience (SAE) 69
Teacher Professionalism 72
Agricultural and Technological Development 74
Comparison of Perceptions of Future Needed Competencies According to Years of Experience of Agricultural Teachers 79
Planning, Development and evaluation of Local Programs 79
Instructional Planning 80
Teaching Methods and Techniques 80
Instructional Evaluation 82
Departmental Management 83
Guidance 84
School-Community Relations 85
National FFA Organization 86
Adult Education Program 86
Supervised Agricultural Experience (SAE) 87
Teacher Professionalism 88
Agricultural and Technological Development 89
Comparison of Perceptions of Teachers and Teacher Educators Concerning Levels of Education Competencies Needed in the 1990s 90
Planning, Development and Evaluation of Local Programs 91
Instructional Planning 92
Teaching Methods and Techniques 93
Instructional Evaluation 94
Departmental Management 95
Guidance 96
School-Community Relations 96
National FFA Organization 97
Adult Education Program 98
Supervised Agricultural Experience (SAE) 99
Teacher Professionalism 100

Agricultural and Technological Development 101
Comments Expressed by the Respondents 102

V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS 104

Summary of the Study 104
Findings of the Study 105

Chapter Page

Demographic Data Concerning the Teachers and Teacher Educators Participating in the Study 105
Findings Concerning Teachers' Perceived Levels of Present and Future Needed Education Competencies 107
Findings Concerning Perceptions of Teachers, Based on Years of Experience, on Future Needed Competencies 109
Findings Concerning Perceptions of Teachers and Teacher Educators on the Future Needed Competencies 109
Summary of the Top Thirty Percent of Future Needed Competencies As Perceived by Teachers and Teacher Educators 111
Conclusions 113
Recommendations 115

SELECTED BIBLIOGRAPHY 117

APPENDIXES 122

APPENDIX A - CORRESPONDENCE 123

APPENDIX B - QUESTIONNAIRE MAILED TO AGRICULTURAL TEACHERS IN SOUTHERN REGION OF THE UNITED STATES 128
APPENDIX C - QUESTIONNAIRE MAILED TO TEACHER EDUCATORS IN SOUTHERN REGION OF THE UNTIED STATES 133

LIST OF TABLES

Table		Page
I.	Distribution of Respondents by State and Region	35
II.	Distribution of Respondents by Age Group	36
III.	Distribution of Respondents by Education Level	37
IV.	Distribution of Respondents by Years of Experience	38
V.	Teachers' Perceived Levels of Present Competencies in Planning, Development and Evaluation of Local Programs	40
VI.	Teachers' Perceived Levels of Future Needed Competencies in Planning, Development and Evaluation of Local Programs	42
VII.	Teachers' Perceived Levels of Present Competencies in Instructional Planning	43
VIII.	Teachers' Perceived Levels of Future Needed Competencies in Instructional Planning	44
IX.	Teachers' Perceived Levels of Present Competencies in Teaching Methods and Techniques	46
X.	Teachers' Perceived Levels of Future Needed Competencies in Teaching Methods and Techniques	48
XI.	Teachers' Perceived Levels of Present Competencies in Instructional Evaluation	51
XII.	Teachers' Perceived Levels of Future Needed Competencies in Instructional Evaluation	53
XIII.	Teachers' Perceived Levels of Present Competencies in Departmental Management	54

Table		Page
XIV.	Teachers' Perceived Levels of Future Needed Competencies in Departmental Management ..	56
XV.	Teachers' Perceived Levels of Present Competencies in Guidance	57
XVI.	Teachers' Perceived Levels of Future Needed Competencies in Guidance	59
XVII.	Teachers' Perceived Levels of Present Competencies in School-Community Relations	60
XVIII.	Teachers' Perceived Levels of Future Needed Competencies in School-Community Relations	62
XIX.	Teachers' Perceived Levels of Present Competencies in National FFA Organization	63
XX.	Teachers' Perceived Levels of Future Needed Competencies in National FFA Organization	65
XXI.	Teachers' Perceived Levels of Present Competencies in Adult Education Program ..	67
XXII.	Teachers' Perceived Levels of Future Needed Competencies in Adult Education Program ..	70
XXIII.	Teachers' Perceived Levels of Present Competencies in Supervised Agricultural Experience (SAE)	70
XXIV.	Teachers' Perceived Levels of Future Needed Competencies in Supervised Agricultural Experience (SAE)	71
XXV.	Teachers' Perceived Levels of Present Competencies in Teacher Professionalism ..	73
XXVI.	Teachers' Perceived Levels of Future Needed Competencies in Teacher Professionalism ..	75
XXVII.	Teachers' Perceived Levels of Present Competencies in Agricultural and Technological Development	76
XXVIII.	Teachers' Perceived Levels Future Needed Competencies in Agricultural and Technological Development	78

Table		Page
XXIX.	Comparison of Perceptions According to Years of Experience Concerning Levels of Competencies in Planning, Development and Evaluation of Local Programs	80
XXX.	Comparison of Perceptions According to Years of Experience Concerning Levels of Competencies in Instructional Planning ...	81
XXXI.	Comparison of Perceptions According to Years of Experience Concerning Levels of Competencies in Teaching Methods and Techniques	81
XXXII.	Comparison of Perceptions According to Years of Experience Concerning Levels of Competencies in Instructional Evaluation	82
XXXIII.	Comparison of Perceptions According to Years of Experience Concerning Levels of Competencies in Departmental Management ..	83
XXXIV.	Comparison of Perceptions According to Years of Experience Concerning Levels of Competencies in GUIDANCE	84
XXXV.	Comparison of Perceptions According to Years of Experience Concerning Levels of Competencies in School-Community Relations	85
XXXVI.	Comparison of Perceptions According to Years of Experience Concerning Levels of Competencies in National FFA Organization	86
XXXVII.	Comparison of Perceptions According to Years of Experience Concerning Levels of Competencies in Adult Education Program ..	87
XXXVIII.	Comparison of Perceptions According to Years of Experience Concerning Levels of Competencies in Supervised Agricultural Experience (SAE)	88
XXXIX.	Comparison of Perceptions According to Years of Experience Concerning Levels of Competencies in Teacher Professionalism ..	89

Table		Page
XL.	Comparison of Perceptions According to Years of Experience Concerning Levels of Competencies in Agricultural and Technological Development	90
XLI.	Comparison of Perceptions of Teachers and Teacher Educators Concerning Levels of Future Needed Competencies in Planning, Development and Evaluation of Local Programs	92
XLII.	Comparison of Perceptions of Teachers and Teacher Educators Concerning Levels of Future Needed Competencies in Instructional Planning	93
XLIII.	Comparison of Perceptions of Teachers and Teacher Educators Concerning Levels of Future Needed Competencies in Teaching Methods and Techniques	93
XLIV.	Comparison of Perceptions of Teachers and Teacher Educators Concerning Levels of Future Needed Competencies in Instructional Evaluation	94
XLV.	Comparison of Perceptions of Teachers and Teacher Educators Concerning Levels of Future Needed Competencies in Departmental Management	95
XLVI.	Comparison of Perceptions of Teachers and Teacher Educators Concerning Levels of Future Needed Competencies in Guidance ...	96
XLVII.	Comparison of Perceptions of Teachers and Teacher Educators Concerning Levels of Future Needed Competencies in School-Community Relations	97
XLVIII.	Comparison of Perceptions of Teachers and Teacher Educators Concerning Levels of Future Needed Competencies in National FFA Organization	98
XLIX.	Comparison of Perceptions of Teachers and Teacher Educators Concerning Levels of Future Needed Competencies in Adult Education Program	99

Table Page

L. Comparison of Perceptions of Teachers and Teacher Educators Concerning Levels of Future Needed Competencies in Supervised Agricultural Experience (SAE) 100

LI. Comparison of Perceptions of Teachers and Teacher Educators Concerning Levels of Future Needed Competencies in Teacher Professionalism 101

LII. Comparison of Perceptions of Teachers and Teacher Educators Concerning Levels of Competencies in Agricultural and Technological Development 102

LIII. Summary of Comments Expressed by the Respondents 103

LIV. Summary of Demographic Data Concerning Teachers and Teacher Educators Participating in the Study 106

LV. Summary of Findings Concerning Teachers' Perceived Levels of Present and Future Needed Education Competencies 108

LVI. Summary of Findings Concerning Teachers' and Teacher Educators' Perceived Levels of Future Needed Competencies by Categories .. 110

LVII. Summary of the Top Thirty Percent of Future Needed Competencies as Perceived by Teachers and Teacher Educators 112

CHAPTER I

INTRODUCTION

The rural economic crisis has created an awareness of the importance of broadening students' experiences in agriculture. The traditional production focus of many vocational agricultural education programs is gradually giving way to more comprehensive and up-to-date approaches (Frick and Rollins, 1988). This changing situation was earlier reported in the publication "A Nation at Risk" (National Commission on Excellence in Education, 1983). The report criticized American education and issued several recommendations to remedy perceived problems.

Not long after, another report was issued. This time the Holmes Group report (Tomorrow's Teachers, 1986) expressed displeasure with the generally low quality of teacher preparation in this country. The Holmes Group goals, among others, were:

- make the education of teachers intellectually more solid. Teachers must have a greater command of academic subjects and of the skills to teach them, and

- recognize differences in teachers' knowledge, skill and commitment, in their education, certification and work... distinguish between novices, competent members of the profession and high-level professional leaders (Adams, Pratzner, Anderson and Zimmerer, 1987).

These concerns were eventually taken to task through a national study by a Committee on Agricultural Education. This study entitled "Understanding Agriculture: New Directions for Education" (National Research Council, 1988), has caused us to examine agricultural education as it now exists in public school. The study, in particular, pointed out that traditional agricultural education programs are not meeting the broader needs of agricultural teachers, students, and graduates generated by changes in the food and fiber industries and society as a whole. Subsequently, the study has challenged us to change but has also pointed direction for that change (Drake, 1990).

Statement of the Problem

The situation mentioned above calls for simultaneous change, and improvements on the part of the agricultural teachers' profession, particularly concerning their instructional delivery. It was found that several studies have been made on professional technical competencies in the subject areas of vocational secondary education, but national consensus is yet to be obtained regarding the professional education competencies essential for vocational agricultural teachers. Therefore, further studies on competencies relating to the instructional delivery of the basic agricultural education components, such as, classroom and laboratory instruction, National FFA Organization, supervised agricultural experience, and young/adult farmer education programs, are greatly needed. These components

have been traditionally regarded as the integral parts of vocational agriculture.

It is also felt that recent and rapid changes in the agriculture industry, coupled with changes and declining student enrollment in agricultural education, had created the need for agricultural teachers to initiate and update their education competencies.

Purpose of the Study

The purpose of the study was to determine the selected professional education competencies needed by agricultural teachers in facing the instructional delivery challenges of the mid-1990s, as perceived by agricultural teachers and agricultural teacher educators.

Objectives of the Study

In order to accomplish the above purpose, the following objectives are setforth:

1. To determine the agricultural teachers' present levels of selected professional education competencies.
2. To determine the future levels of selected professional education competencies needed by agricultural teachers.
3. To compare the perceptions of teachers based on years of experience concerning the levels of professional education competencies needed by agricultural teachers in the future.

4. To compare the perceptions of agricultural teachers with the agricultural teacher educators concerning the levels of professional education competencies needed by agricultural teachers in the future.

Definition of Terms

For this study the following definitions are used:

1. Adult Education Program: "Organized instruction for persons beyond the age of compulsory school attendance to prepare them for agricultural employment or to increase knowledge and skills required in their agricultural occupation" (Knebel, 1982, p. 5).
2. Agricultural Education: The scientific study of the principles and methods of teaching and learning as they pertain to agriculture (Barrick, 1989, p. 24). For the purpose of this study, the term is used synonymously with vocational agriculture.
3. Agricultural Teacher Educator: "A professional person in the field of agricultural education responsible for the preservice preparation and inservice education of agricultural teachers" (Knebel, 1982, p. 20).
4. Competency: The mastery of knowledge,skills, attitudes, understanding, and judgement which a person demonstrates at a predetermined proficiency level.
5. Educational Competency: Refers to the mastery

level of knowledge and skills necessary for instructional delivery and management of agricultural education program in secondary education.

6. Future Competency: Refers to competency level needed by agricultural teachers in the year 1990s.
7. Less or More Experienced Teachers: Refers to number of years of teaching experience. For the purpose of this study, the years of experience were categorized in five different ranges.
8. Level of Competency: The degree to which one has adequate or specified qualification or capability. Five levels of competency were employed. Agricultural teachers and teacher educators were asked to choose a level for each item studied.
9. Local Program: Refers to agricultural education program conducted at local or school level.
10. National FFA Organization: "The national organization of students enrolled in agricultural education programs. The FFA activities are an integral part of the instructional programs under provision of the national vocational education acts" (Knebel, 1982, p. 11).
11. Present Competency: Refers to levels of competencies possessed or held by agricultural teachers.
12. Supervised Agricultural Experience or Supervised Occupational Experience: The two terms are used

synonymously in this study, the term refers to a series of related learning experiences which is an integral part of the instructional program of a student enrolled in vocational agriculture, designed to develop knowledge and skills in agriculture. These supervised learning experiences may be provided by utilizing facilities of the home, farm, school, or an agricultural business (Knebel, 1982).

13. Vocational Agriculture: "Generally refers to the curriculum or program in agricultural education designed to offer students at the secondary level the opportunity to explore and prepare for agricultural occupations. Also, post-secondary and adult programs are recognized as legal components of vocational agriculture" (Knebel, 1982, p. 21).

Assumptions

The following assumptions were made in conducting this study:

1. The agricultural teacher educators requested to provide information needed for the study were, by the nature of their professions and locations when the study was conducted, the most qualified persons to provide such information.
2. The agricultural teachers were qualified and capable of making judgement concerning their presently held competency level and the level of

competencies needed by the agricultural teachers in the future.

Scope and Limitations of the Study

The scope limitations which were recognized in this study included:

1. The population of this study consisted of 5440 agricultural teachers and 115 agricultural teacher educators located only within the thirteen Southern States (as defined by American Agricultural Teacher Educator Association), and listed in the Agriculture Teachers Directory (1990).
2. The large number of professional education competencies needed in agricultural education programs made it necessary to limit to only major competencies in each category by importance. These competencies were rated important by teachers and administrators in previous studies, and have been agreed upon by a panel of experts.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this chapter is to present background information for this investigation. Involved were research studies, books, newsletters, professional magazines, and periodicals pertinent to this study. The review of literature has been organized into five different sections. These are as follows:

1. Background
2. Coping with Change
3. Agricultural Teachers Make It Happen
4. Past Studies on Agricultural Teacher Competencies
5. Future Competencies of Agricultural Teacher
6. Summary

Background

From the time of its inception with the passage of the Smith-Hughes Act of 1917, vocational agriculture has addressed occupational preparation for individuals interested in agriculture. Since then, until 1963, programs of vocational agriculture had as their primary aims to train present and perspective farmers for proficiency in farming.

With the passage of Vocational Education Act of 1963, the instructional mission of vocational education in

agriculture expanded from strictly production agriculture to encompass agribusiness and natural resource occupations.

However, in the mid-1980s, in many instances, programs designed to stress vocational education were being threatened and, in many cases phased out (Cox, McCormick and Miller, 1989).

The concern about the viability of the vocational education programs was now felt by many factions. As a result, a national study was initiated 'because of concerns about declining enrollments, instructional content, and quality in agricultural education programs' (National Academy of Science, 1988). This study reported that vocational agricultural education had lagged behind the school reform movement and that changes in vocational agriculture must occur to maintain the programs.

Coping with Change

A study by the Committee in Agricultural Education in Secondary Schools (National Research Council, 1988) revealed that there is a need for change in agricultural education. The study noted that the focus of agricultural education must be broadened to encompass a much larger audience than traditionally served by vocational agriculture.

Change has to occur because the agricultural education profession demands change. Iverson and Robinson (1990) noted that the agricultural education program has been unable to keep pace with recent dramatic change in

agricultural industry and with societal demand on the individual.

If change is to occur, there must be a total commitment from the agricultural education community, because any direction of change would certainly impact the image of agricultural education. In one position paper, the National Association of Supervisors of Agricultural Education (1987) once made clear of the needed direction of change when it stated:

> The image of the instructional program in vocational agriculture must be changed to reflect a scientific and futuristic nature. The future of vocational agriculture depends upon a willingness of the agricultural education profession to analyze current programs and adjust them to meet the changes of today's rapidly advancing biotechnology and information technology...Supervised Occupational Experienced programs, Future Farmers of America, laboratory experiences, classroom instruction, and adult education must all be modernized to reflect this new image (p. 3).

Powers, (1991) reminded of the present and future challenges that agricultural teachers would be facing ahead. He said:

> Changes in technology, program structure, and delivery modes have challenged agriculture teachers to continue to develop programs that will satisfy the needs of current students and prepare them for present and future careers... if the agricultural education is to remain current, teachers must develop a minimum level of competency in computer technology and the expertise to communicate it to the students (p. 13).

In order to bring about agricultural education changes, teachers and their concepts of programs must also change.

Agricultural Teachers Make It Happen

Much of the success in agriculture today can be attributed to a sound agricultural education program. This program, however, must be able to be adjusted so as to meet the needs of the emerging agriculture industry. Some of the adjustments proposed by National Association of Supervisors of Agricultural Education (1987) included the need for the development of the individual student in the acquisition of:

- Personal skills and attitudes.
- Communication and computational skills and technological literacy.
- Employment skills.
- Broad agricultural concepts, specific occupational skills, and knowledge to form foundations for career planning and useful learning.
- An understanding of the role and importance of international agriculture and agri-marketing (p. 6).

The need to develop the education skills as mentioned above cannot be satisfactorily achieved without considering and involving the role and development of teachers, technically and professionally.

Okatahi and Welton (1983) made a special mention of the importance of competent teachers in agricultural education, and that the goals and objectives of agricultural education cannot be achieved without the availability of competent teachers. They also quoted The World Conference on Agricultural Education and Training (1970) held in Copenhagen which reported:

> ...of all aspects of agricultural education and training, the teacher is the most important. Without good teachers, competent at their work and possessing those qualities which enable

> them to inspire and develop the latent capacities of their students, agricultural education as a whole cannot function effectively (p 67).

Stewart (1983) recognized the importance of teacher contributions in bringing about change in quality instruction in agricultural education. He said:

> The teacher is the critical catalyst in quality instruction. Planning, assessing student needs, selecting contents, creating a positive atmosphere, utilizing appropriate methodology, maintaining student control, and utilizing resources are all parts of the process (p. 4).

Johnston (1989) agreed that teachers were responsible for changing and shaping the future of vocational education. He urged:

> Change in vocational education must start with teachers. The vocational education director and instructor must retrain themselves to keep pace with current practices in the workplace and emerging scientific theory (p. 38).

Gartin (1990) complemented highly of the responsibility of agricultural teachers in bringing about positive change to the students. He acknowledged that the teacher is one of the single most important features in developing students to become more functional people in society.

The importance of teacher as a tool in bringing about change in technical education was also recognized by Selman (1990) when he said:

> Teachers are a critical element in education, and in any meaningful education reform effort. Technical education teachers must assess the demands of a changing society and tailor their instruction to meet the present and future needs of students (p. 42).

Drake (1990) singled out teacher as a component of successful agricultural education program. He concluded

from various studies, saying:

> Studies of agricultural education ranging from factors of excellence in individual secondary school programs to perceptions held by administrators and parents often reveal one key overarching variable. That variable is the teacher (p. 10).

Past Agricultural Teacher Competency Studies

The identification and validation of competencies needed for the successful teaching of vocational agriculture has been a concern of individuals responsible for planning and administering the program in secondary schools for some time. Studies of educational competencies needed by agricultural teachers were most active in the 1960s and 1970s (Gott and Claycomb, 1981).

The importance of updating competencies in agricultural education was brought to focus again in the mid-1980s when agricultural educators were discussing the changing of curriculum and its impact on teaching competencies. To this effect, Moore and Borne (1986) conducted a study and concluded with the following recommendation:

> The curriculum in the upper grades should be based on occupational analysis but the profession should carefully heed the warning of Lathrop (1922) that conditions change and new competencies emerge in the various agricultural occupations. Many of the competency studies conducted ten to fifteen years ago are now out of date. The profession needs to constantly update the competency studies on which the curriculum is based (p. 79).

During the last decade, most of the teacher competency

studies were concentrated in the specific areas of technical competency skills, such as, computer usage, agricultural mechanics laboratory management, and teaching competencies.

One of the major computer competency studies was a project featuring a systematic approach in the identification of microcomputer competencies for vocational instructors (Roth and Tesolowski, 1984). Both the researchers utilized the DACUM (Developing a Curriculum) process to profile a graphic portrayal of how the microcomputer integrated with the overall schema of vocational instruction and curricula. The study resulted in profiling 47 competencies clustered within five categories:

A. Developing a personal plan for microcomputer competency.
B. Integrating computer-based instruction (CBI) into vocational curricula.
C. Planning, executing and evaluating CBI.
D. Planning and organizing vocational education learning environments for CBI.
E. Performing classroom management functions with CBI (p. 65).

Teachers in secondary school needed to be familiar and competent in the use of computer. Lacina (1985) reported that in her study to identify the computer competencies perceived to be needed by classroom teachers, results reflected a need for classroom teachers to become computer literate. The study recommended that inservice education should be provided to teachers currently in the schools, and in addition, it was recommended that a computer skills and knowledge be provided to preservice teachers as changes in computers and related technology occurred.

In another teacher competency study, Hunter (1987)

reported that agricultural teachers, in general, perceived the agricultural mechanics and agricultural management competencies were primarily of high importance to their program. It was also concluded that all seven groups of years teaching experience perceived both agricultural mechanics and agricultural management competencies as being of high importance. The study also concluded that teachers' perceptions concerning safety as an essential competency were considered of extreme importance.

In a parallel study to determine the laboratory management competencies needed by secondary agricultural instructors, Johnson and Schumacher (1988) reported that 88 percent of the agricultural mechanics laboratory management competencies identified were of above average importance. Therefore, it was concluded that the identified competencies represented the skills necessary for effective laboratory management as perceived by the agricultural mechanics specialists.

In a more comprehensive study of teacher education competency, Lamberth (1982) seek to identify and verify the professional education competencies needed and presently held by beginning teachers of vocational agriculture. His conclusion reached was that 96 of the 99 competencies needed by beginning teachers received very high mean ratings; and similarly, 93 of the 99 competencies presently held by the beginning teachers also received very high mean ratings. Thus, it was recommended that those 96 competencies endorsed to be of high ratings be included and incorporated in the

agricultural education curriculum. The study also called for teacher education to periodically evaluate the professional competency needs of the beginning teachers of vocational agriculture so that the preservice and inservice teacher education programs can be updated as needed.

Another significant study in professional education competencies needed by agricultural teachers was conducted by Rawls and Fatusin (1985). In their investigation, 61 professional education competencies were clustered into seven competency areas of program planning, teaching techniques, leadership skills, occupational experience, adult education, guidance, and school-community relations. The study concluded, among others:

- That strong internal consistency exists among vocational agricultural teachers' ranking of the importance of competency areas, supporting their effectiveness to measure competency area concepts.

- That years of experience in teaching vocational agriculture do not significantly affect the perceived importance or utilization of the professional education competency areas studied (p. 69).

Teachers of vocational agriculture used or valued those professional teaching competencies they perceived to be important to their effectiveness in instruction. A detailed study on the importance of teaching competencies in specific curricular areas in vocational education was conducted by Weiser (1989). The study reported that teachers and principals of vocational agricultural schools rated some 19 competencies as of highest importance. These identified teaching competencies which formed the core items fell

across all 12 categories of agricultural education components.

A study on the importance of teacher activities associated with the program components of agricultural education was undertaken by Cox (1986). It was revealed in this study that program component dealing with the FFA was considered important by principals and teachers of agricultural education. However, they were divided on the importance of SAE program; the teachers gave a high rating whereas the principal gave less importance to the program. As for adult education program, both principals and teachers rated considerably low, and did not give importance to the program. The study also concluded and made recommendations that high school principals be informed of the mission of agricultural education and the importance of its component parts and associated activities.

In another study by Kotrlik and Drueckhammer (1987), the importance of program components and teacher quality factors were highlighted. The results of the study pointed out that SAE programs and agricultural mechanics were perceived as being the most important components in insuring quality programs in the future. In the same study, teacher quality and retention was perceived as being the most important factor in insuring quality programs in the future. This factor loading included the five top ranked individual factors:

Teacher pay and benefit (# 1)
Teacher professionalism (# 2)
Retention of competent teachers in the

> profession (# 3)
> Quality of new vocational teachers (# 4)
> Leadership shown by individual agricultural teachers (# 5) (p. 28).

Future Competencies of Agricultural Teachers

While a number of studies had contributed significantly to the identification of a common core of competencies for vocational-technical teachers, it seemed important that these competencies be identified and validated from time to time in order to cope with emerging change in agriculture industry; hence agricultural education.

The future agricultural teachers needed to adjust their teaching skills to the demand of future technologies. Luft (1990), in laying down the foundation and types of variable agricultural programs of the 1990s said:

> Agricultural instructors should incorporate new technologies in the instruction. Exposure to technology in agriculture demonstrates to the students the changes that are occurring in which they can be a part of it (p. 18).

The need to prepare quality and competent future agricultural teachers could best be seen with the description of future high technology scenario. Toward this end, Mokma (1985) said:

> As we face the high technology future in agriculture, we need to consider the impact and use of satellite surveillance of crop and weather conditions, computers and electronic data processing; robotics with microchips and electronic sensors; cloning, recombinant DNA, protoplast fusion and genetic engineering; lasers and fiber optics; natural cell factories for producing phamaceuticals and health chemicals; and

> microwave communications all integrated into a vast system of agricultural production, marketing and processing. The equipment of the future will be combinations of mechanical, electrical, electronic, fluid, optical and thermal power applications (p. 13).

Mokma further added that the implications for preparing teachers are profound. The teachers of the future must be technologically competent but also must have the pedagogical skills to deliver quality instruction.

A future agricultural education teacher must be able to perform delivery instruction proficiently and competently in order to maintain a quality local program. According to Berkley (1986), a quality agricultural education program required a balanced classroom and laboratory instruction, National FFA Organization, and Supervised Agricultural Experience (SAE). He further asserted that an effective classroom and laboratory instructor must be knowledgeable of curriculum and the selection and use of quality instructional materials.

A future agricultural teacher would have to be more aware of the total industry of agriculture than they have been in the past. Herring and Norris (1987) gave high expectation of future agricultural teachers, especially in term of their attitudes and commitment toward the program. They said:

> Teachers of the future must be willing to embrace the new technologies being introduced into the agricultural industry as well as education. They must be flexible in thinking, ever aware of new innovations being introduced, and dedicated to continuing their education to keep abreast of the ever changing face of the industry ... With much of the delivery of

> information being done with computer and interactive video systems, the role of the teacher will take on new dimensions. More attention to individualized instruction will be necessity (p. 20).

A successful future teacher needed to have an all-round competency skills in order to cope with the changing time. Burton (1988) gave the following characteristics as some of the pre-requisites of a future agricultural teacher:

> Tomorrow's agricultural teacher will need to be skilled in the use of computers, both in the classroom and in management of budgets, inventories, grades, recordkeeping, and a variety of other uses. A high level of proficiency in adapting new technologies to educational uses will be a real asset to the future teacher (p. 5).

Agricultural teachers needed to be current in their technical and teaching skills. They must be adaptable to rapid changes both in agricultural industry itself, and in the educational setting in which they teach. Pool (1990) reminded agricultural educators to take a serious look at the present trend in agricultural education when he said:

> It does not take too much inspection of the current trends in today's agriculture and agricultural related business to see that the current and projected uses of technology is on the upswing and will continue so into the future. Today's farm management and agribusiness management have adopted the use of microcomputers and satellite video communications to better glean information available to make the best market and management decisions. The vocational agricultural teachers who are not knowledgeable and current on these technological advances will soon find themselves in the dust of obsolescence (p. 9).

A successful agricultural teacher was often identified as one who was flexible and could adopt to changing

situation. He must always be prepared, knowledgeable and skilled in adapting the constantly emerging curricular changes.

Recent studies in instructional areas and time spent in agricultural education program revealed that students and administrators felt the amount of time spent in all areas, except global agriculture and high technology, was adequate at the present time (Carpenter and Bishop, 1990). In the same study, it was reported that teachers, students and administrators felt that more concentration should be placed on non-production curricular areas with specific emphasis on high technology, agribusiness and global agriculture. This meant that future agricultural teachers must be prepared and competent to teach in the new curricular areas.

The future success of Supervised Agricultural Experience (SAE), which is the integral component of vocational instructional delivery depended on the attitudes and competencies of the agricultural teachers. Toward this end, Cheek and Arrington (1990) expected the agricultural teacher of the future to be knowledgeable and skillful in seeing and handling instruction involving Supervised Agricultural Experience. Of the future experiential learning/teaching activities, Cheek and Arrington said that there is the need to provide experiences in areas related to biotechnology, food science, marketing, communications, the environment, and exploratory programs. They went even farther suggesting that teachers should place their students in local university agricultural experimental station to

work on biotechnological experiments, or sending to food processing plant where students could seek experiences in testing, processing, storage, and quality control related to food products.

An agricultural teacher professional involvement in FFA program was recognized as an important contribution to total success of agricultural education. In fact, it was said that teacher factor made the difference between success and failure of an FFA program. Stewart (1990) related and described the importance of future teacher professionalism and FFA program success as follows:

> The teacher is ultimately the difference between success and failure in agricultural education/FFA programs ... National and state improvements are successful when local agricultural instructors make adaptations to maintain their competitive edge ... The profession (agricultural education) must do more to equip teachers with leadership and management skills which enable them to best utilize their talents and resources available in their school and community ... The teacher is the key to seeing a bright and growing future from the changes made in FFA (p. 16).

In order to survive and continue to be successful in the future, teachers involving in the FFA delivery instruction would have to plan and be sensitive to the future development of the FFA. Concerning this situation, Harris (1988) outlined some of the priorities that agricultural teachers should be aware of and concerned with. They were:

- Recruitment and maintenance of student enrollment
- Agriscience and emerging occupations and technologies
- Agrimarketing in global economy

- Leadership skill development
- Business skill development
- Enhancement of community support
- Understanding the social, political and economic forces which impact international agriculture (p. 5).

The skills and right attitude of an agricultural teacher had a lot to do with the success of future SAE program. This teacher factor was mentioned by Powers (1989) when he described the directions and strategies for future SAE programs. He said:

> Strategies for strengthening the summer program via developing effective SOE, which should start with a positive attitude on behalf of the teacher and a plan for development and implementation ... If the teacher can recognize and accept that student needs, school curriculum, and society are changing and endeavor to develop SOE consistent with these changes, this is the first step toward developing that positive attitude. Many writers have indicated that there is a strong correlation between the attitude of the teacher and the quality of the program he/she is directing (p. 10).

Summary

Chapter II presented an overview of recent changes that have taken place in agriculture industry and agricultural education. These changes have created a need to study present state of teachers' professional education competencies and competencies needed in the future.

A thorough investigation of the literature revealed that teachers were one of the important factors that could bring about changes and improvements in agricultural education. Previous studies in agricultural teacher

competencies pointed out the needs for teachers to upgrade their education competencies. The future competencies that were needed to be studied ranged from planning of instructional agricultural programs at local levels to instruction and management involving international or global agricultural markets. However, education competencies that were frequently mentioned and needed were those of computer skills and computer-assisted instruction.

CHAPTER III

DESIGN AND METHODOLOGY

The purpose of this chapter is to describe the methods and procedures used in conducting this study. These were formulated by the central purpose of the study, which was to determine the selected professional education competencies needed by agricultural teachers in facing the instructional delivery challenges of the mid-1990s as perceived by agricultural teachers and teacher educators. Four specific objectives were formulated and served as guidelines for the design and conduct of this investigation.

These objectives were as follows:

1. To determine the agricultural teachers' present levels of selected professional education competencies.
2. To determine the future levels of selected professional education competencies needed by agricultural teachers.
3. To compare the perceptions of teachers, based on teaching experience, concerning the levels of professional education competencies needed by agricultural teachers in the future.
4. To compare the perceptions of agricultural teachers

with the teacher educators concerning the levels of professional education competencies needed by the agricultural teachers in the future.

Type of Research

The research for this study was basically descriptive. According to Gay (1981):

> Descriptive research involves collecting data in order to test hypotheses or answer questions concerning the current status of the subject of the study. A descriptive study determines and reports the way things are. One common type of descriptive research involves assessing attitudes or opinions toward individuals ... Descriptive data are typically collected through a questionnaire survey, an interview, or observation (p. 12).

For this study, a questionnaire survey method was used. The purpose of a survey, according to Hopkins (1980) was:

> To establish prevailing conditions at a point in time and to compare them with some established standards or with conditions in another population or time. Generalizations may also be extracted from conditions. As with all research, the survey must be directed by a clearly presented question that defines the scope and depth of the study (p. 277).

The Study Population

The population addressed in the study, consisted of all agricultural teachers and teacher educators in the southern region of the United States, as defined by the American Association of Teacher Educators in Agriculture (AATEA), and whose names were registered in the Agriculture

Teachers Directory (Henry, 1989). The states included were: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.

A stratified proportional random sample of agricultural teachers were selected to participate in the study. Gay (1981) defines stratified sampling as:

> The process of selecting a sample in such a way that identified subgroups in the population are represented in the sample in the same proportion that they exist in the population (90).

Van Dalen (1966) suggested that proportional sampling would enable one to achieve even greater representation in the sample. He further said that this technique requires selection of units at random from each stratum in proportion to the actual size of the group in the total population.

The first sample in this study consisted of 357 agricultural teachers who were geographically located and stratified by the states named above. The number of teachers selected was in proportion to the total number in the each state.This randomly selected number was based on a table for determining needed size random sample from a given population, by Krejcie, R.V. and Morgan D.W (1976). The remaining population consisted of all agricultural teacher educators who were also located in the same region.

Development of the Instrument

The survey instrument used in this study was in the form of a questionnaire. This questionnaire was developed

in cooperation with members of the Graduate Study Committee. A review of literature was undertaken to find possible lists of educational competencies relevant to the study. Based upon this investigation, several tentative sets of agricultural teacher competencies recorded by DeVaughan (1974), Herring (1976), Gott & Claycomb (1981), Lamberth (1982), and Wilson (1983) were obtained. A thorough screening, modification synthesis process was undertaken to develop an appropriate instrument for this study.

The questionnaire was divided into two parts. Part I included demographics of the teaching population. Part II included competency items with rating scales.

Because of the long list of teacher competencies, the questionnaire was developed and arranged in different categories. The aim was to provide clarity and understanding. The competency items were categorized according to the following headings:

A. Planning, Development, and Evaluation of Local Programs
B. Instructional Planning
C. Teaching Methods and Techniques
D. Instructional Evaluation
E. Departmental Management
F. Guidance
G. School-Community Relations
H. National FFA Organization
I. Adult Education Program
J. Supervised Agricultural Experience (SAE)

K. Teacher Professionalism

L. Agricultural and Technological Development.

In the competency portion of the questionnaire, teachers were asked to rate the levels of competencies possessed or held resently by themselves, and the levels of competencies needed by agricultural teachers in the mid-1990s. As for teacher educators, they were asked to rate the levels of competencies needed by agricultural teachers in the mid-1990s only.

A five-point Likert type scale, with real limit, was used as follows:

1 = Minimal	= 1.00 to 1.49
2 = Below Average	= 1.50 to 2.49
3 = Average	= 2.50 to 3.49
4 = Above Average	= 3.50 to 4.49
5 = Highly Competent	= 4.50 to 5.00

Pilot Study

Most of the competency statements used in the questionnaire of this study were drawn from select educational competency studies. Further development and scrutiny was necessary in order to improve the content and format of the survey instrument. To accomplish this task, a class of graduate students in educational statistics was utilized to review and validate the instrument.

The proposed survey instrument was then ready for testing in the field. This field test was accomplished to ensure that the instrument was reliable in obtaining the

data needed to accomplish the objectives of the study. Fraenkel and Wallen (1990), defined a pilot study as: "A small-scale study administered before conducting an actual study - its purpose is to reveal defects in the research plan" (p. 479).

The pilot study was conducted using five agricultural teachers from the state of Oklahoma as the purposive samples. Kerlinger (1973) defined purposive sampling as:

> Another form of nonprobability sampling, which is characterized by the use of judgement and a deliberate effort to obtain representative samples by including typical areas or groups in the sample (p. 129).

The data from the pilot study was analyzed to estimate the reliability of the instrument. An internal consistency reliability or split-half reliability test was used. The coefficient of reliability was found to be .99, indicating that there was a high positive relationship between the even numbered competencies and the odd numbered competencies. Spearman-Brown prophecy formula was applied to correct the coefficient of reliability obtained (Ahmann and Glock, 1975; Gay, L.R., 1981); but no difference was found in the result. Hence, reliability was statistically established for the research instrument. The subjects used in the pilot study were excluded in the actual study which was conducted at a later date.

Before mailing, the questionnaire was checked again by the Graduate Study Committee. Again, modifications were made following input from the field test and the Graduate Study Committee.

Collection of Data

Two sets of questionnaires were prepared for the data collection. One set of questionnaires were mailed to the 357 agricultural teacher sample, and the other set of 116 questionnaire were mailed to the teacher educator sample. A self-addressed stamped envelope was enclosed for each respondent. In addition, a cover letter explaining the importance and value of the study and its relationships to the continued success of the agricultural education programs was also included.

Approximately three weeks after the first mailing, about 35 percent of the teacher responses and 70 percent of teacher educator responses were returned. After that period a second follow-up mailing to the non-respondents was carried out.

The last returned mail was received after about six weeks of the first mailing out. The final tally of the responses returned was 170 (47.6 percent) from the teachers, and 97 (84.3 percent) from the teacher educators.

Analysis of Data

The completed instruments returned were scored and tabulated according to different populations (teacher and teacher educator) and by geographical states. A System for Statistics (SYSTAT) program was used to analyze the data.

The first step in data analysis was to describe it in a

summary fashion using descriptive statistics such as frequency counts, mean scores, and percentages. A five point Likert-type scale was utilized to determine the mean responses from the data collected. Real limits were established and numerical values were assigned to the categories of importance with regard to teacher competencies.

A one-way analysis of variance was employed in order to compare mean responses between five age groups. Where differences were found, a follow-up Duncan Multiple Range Test was employed to locate where the differences occurred between these groups. The groups analyzed were divided into five groups according to years of experience. They were 0 - 5 years; 6 - 10 years; 11 - 15 years; 16 - 20 years, and 21 plus years.

A T-test was used to analyze differences in competency levels between teacher and teacher educator responses.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

The primary purpose of this study was to determine the selected professional education competencies needed by agricultural teachers in facing the instructional delivery challenges of the mid-1990s, as perceived by agricultural teachers and agricultural teacher educators. In order to accomplish the purpose of the study, the following objectives were set forth:

1. To determine the agricultural teachers' present levels of selected professional education competencies.
2. To determine the future levels of selected professional education competencies needed by agricultural teachers.
3. To compare the perceptions of teachers based on years of experience concerning the levels of professional education competencies needed by agricultural teachers in the future.
4. To compare the perceptions of agricultural teachers with the agricultural teacher educators concerning the levels of professional education competencies

needed by agricultural teachers in the future.

Description of Respondents

In order to more adequately describe the respondents, descriptive research techniques were employed to develop a profile of the teachers and teacher educators included in the study. This brief profile includes the variables of geographic locations (states), age, educational level, and years of teaching experience.

A total of 357 agricultural teachers and 115 teacher educators teaching in the Southern Region of the United States, as defined by the American Association of Teacher Educators in Agriculture (AATEA), were included in the study. Table I contains data related to geographic state of employment of respondents. The Southern Region consisted of thirteen states. There is a total of 5440 agricultural teachers and 115 agricultural teacher educators working in the region. One hundred and seventy (47.6 percent) of the teachers, and 97 (84.3 percent) of the teacher educators responded to the questionnaires. Percentages of response of teachers by state ranged from a low of 29.8 percent in Florida to a high of 87.3 percent in Tennessee. As for teacher educators, the range of response was from a low of 37.5 percent from Alabama to a maximum high of 100.0 percent in Mississippi, Oklahoma and Tennessee.

TABLE I

DISTRIBUTION OF RESPONDENTS BY STATE AND REGION

State	Teachers			Teacher Educators		
	N	% Returned By State	% Returned By Region	N	% Returned By State	% Returned By Region
Alabama	12	42.9	7.1	4	37.5	4.1
Arkansas	6	35.3	3.5	11	91.7	11.3
Florida	14	29.8	8.2	6	85.7	6.2
Georgia	6	30.0	3.5	4	66.7	4.1
Kentucky	5	31.3	3.0	6	62.5	6.2
Louisiana	6	33.3	3.5	4	80.0	4.1
Mississippi	11	73.3	6.5	6	100.0	6.2
N. Carolina	14	53.8	8.2	5	62.5	5.2
Oklahoma	17	58.6	10.0	10	100.0	10.3
S. Carolina	8	66.7	4.7	5	85.7	5.2
Tennessee	13	87.3	7.7	5	100.0	5.2
Texas	50	54.3	29.4	23	95.8	23.7
Virginia	8	38.1	4.7	8	88.9	8.2
Total	170	-	100.0	97	-	100.0

Information in Table II shows the distribution of respondents by age group. Both teacher and teacher educator respondents were grouped into five different age ranges, namely, below 25 years; 26-35 years; 36-45 years; 46-55 years; and 55 years and above. The highest age group among

the teachers was that of 36-45 year range which represented 42.3 percent, and the lowest age group was that of 25 year and below, representing 2.3 percent.

TABLE II

DISTRIBUTION OF RESPONDENTS BY AGE GROUP

Age Group	Teachers		Teacher Educators	
In Years	N	%	N	%
25 and below	4	2.3	0	0
26 - 35	45	26.5	8	8.2
36 - 45	72	42.3	38	39.2
46 - 55	29	17.1	25	25.8
56 and above	10	5.9	22	22.7
Non-respondent	10	5.9	4	4.1
Total	170	100.0	97	100.0

As for teacher educators, the highest percentage was also represented by the 36-45 year age group which accounted for 39.2 percent. Less percentages were recorded for the lower age groups among teacher educators. In fact, none reported to be in the 25 years and below age group.

Another demographic variable for which data was gathered concerned the educational level of the respondents. Information presented in Table III shows that a majority of

the teachers (54.7 percent) possessed Master's degrees while fewer teachers (37.1 percent) possessed Bachelor's degrees. There were substantial number of teachers (4.7 percent) holding Education Specialist degrees.

TABLE III

DISTRIBUTION OF RESPONDENTS BY EDUCATION LEVEL

Education Level	Teachers		Teacher Educators	
	N	%	N	%
Bachelor's	63	37.1	1	1.0
Master's	93	54.7	3	3.1
Specialist	8	4.7	1	1.0
Doctoral	2	1.2	92	94.9
No Response	4	2.3	0	0
Total	170	100.0	97	100.0

The highest degrees held by teacher educators, the doctoral degree, was 94.9 percent, while the next highest level, the Master's, was held by only 3.1 percent. Only one percent held the Specialist degree and only one percent held only the Bachelor's degree.

Another demographic variable studied was the number of years of teaching experience. Information in Table IV shows the distribution of respondents by the number of years of experience.

The years of experience was categorized into five groups: 0-5 years; 6-10 years; 11-15 years; 16-20 years; and 21 plus years experience. It was found that the teacher experience was almost equally shared among three groups: 6-10 year (20.6 percent), 11-15 year (18.8 percent), and 16-20 year experience (18.2 percent). However, the group that was most represented was that of 21 and plus years of experience, accounting for 27.1 percent. The number of teachers with 0-5 years of experience were much less, accounting for only 8.2 percent. Data presented in Table IV also shows that almost half of the teacher educators (48.5 percent) were recorded with 21 plus years of experience.

TABLE IV

DISTRIBUTION OF RESPONDENTS BY YEARS OF EXPERIENCE

Years Experience Group	Teachers N	Teachers %	Teacher Educators N	Teacher Educators %
0 - 5	14	8.2	6	6.2
6 - 10	35	20.6	7	7.2
11 - 15	32	18.8	11	11.3
16 - 20	31	18.2	18	18.6
21 plus	46	27.1	47	48.5
No Response	12	7.1	8	8.2
Total	170	100.0	97	100.0

These numbers decreased almost evenly with the decrease

in years of experience groups. The least experience group (0-5 years) recorded with only six teacher educators which was 6.2 percent.

Findings of the Perceived Presently Held Competency Levels and the Competency Levels Needed in the Future

The findings described in this section is in accordance with the first and second objectives of the study, that is one, to determine the education competencies presently held by agricultural teachers and two, to determine the future levels of education competencies needed by agricultural teachers. These competencies were categorized into twelve main instructional competency areas.

Planning, Development and Evaluation of Local Programs

Table V contains data from 170 teacher respondents concerning competency levels presently held by the agricultural teachers in planning, development and evaluation of local programs. All competency items presently held by teachers were perceived to be of 'above average' competency, except for the first item 'planning and conducting community survey' where 50 percent of the respondents indicated as of 'average' competency. The competency item perceived as of 'highly competent' presently held by teachers was 'developing annual teaching plan', recorded with a mean of 3.90. The total mean of all

TABLE V

TEACHERS' PERCEIVED LEVELS OF PRESENT COMPETENCY IN PLANNING, DEVELOPMENT AND EVALUATION OF LOCAL PROGRAMS

Competency N = 170	Percentage of Responses							Mean Value*
	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	
Planning and conducting community survey	2.4	4.7	10.6	50.6	23.5	8.2	100.0	3.21
Organizing and working with advisory committee	2.9	4.1	8.8	31.2	35.9	17.1	100.0	3.54
Developing short and long range goals & objectives	2.4	0.6	1.8	34.1	32.3	18.8	100.0	3.79
Developing an annual teaching plan	2.9	0	4.1	27.1	40.0	25.9	100.0	3.90
Evaluating local programs	4.1	1.2	2.4	27.6	44.7	20.0	100.0	3.83
Total Group Mean Value								3.65

* Minimal = 1.00 to 1.49
Below Average = 1.50 to 2.49
Average = 2.50 to 3.49
Above Average = 3.50 to 4.49
Highly Competent = 4.50 to 5.00

competency items in this category was 3.65 which was about mid-way between average and above average competency.

Teachers' perceived levels of education competencies needed in the future in the area of planning, development and evaluation of local programs is shown in Table VI. The data indicates that more responses were 'above average' competency, except competency in 'developing an annual teaching plan' which was rated as of 'highly competent' (39.4 percent). On the whole, the teachers rated 'average' competency as the least needed, and 'highly competent' as the most needed level of education competency in this category in the future.

Instructional Planning

Data presented in Table VII depicts the perceived levels of competency that were held presently by agricultural teachers in the category of instructional planning. It was indicated that the majority of teachers possessed a minimum of 'average' competency in all three competency items in the instructional planning area. It was also found that more teachers (49.4 percent) responded in 'determine needs and interests of students' competency, making it the highest competency item scored in this category. The total group mean value for this category of competencies was 3.68.

Data in Table VIII shows the percentage of response by teachers on the levels of competencies in instructional planning needed in the future. It was pointed out that the highest percentage response in all competency items fell

TABLE VI

TEACHERS' PERCEIVED LEVELS OF FUTURE NEEDED COMPETENCY IN PLANNING, DEVELOPMENT AND EVALUATION OF LOCAL PROGRAM

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Planning and conducting community survey	4.1	1.8	3.0	30.0	44.7	16.5	100.0	3.74
Organizing and working with advisory committee	4.1	1.2	2.9	20.6	41.2	30.0	100.0	4.00
Developing short and long range goals & objectives	4.1	0.6	0	16.5	44.1	34.7	100.0	4.17
Developing an annual teaching plan	4.7	3.0	1.8	17.0	34.1	39.4	100.0	4.11
Evaluating local programs	6.5	0	1.7	20.0	45.3	26.5	100.0	4.03
Total Group Mean Value								4.01

* Minimal = 1.00 to 1.49
Below Average = 1.50 to 2.49
Average = 2.50 to 3.49
Above Average = 3.50 to 4.49
Highly Competent = 4.50 to 5.00

TABLE VII

TEACHERS' PERCEIVED LEVELS OF PRESENT COMPETENCY IN INSTRUCTIONAL PLANNING

Competency N = 170	Percentage of Responses							Mean Value*
	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	
Determine needs and interests of students	3.5	0	1.2	28.8	49.4	17.1	100.0	3.85
Develop student performance objectives	4.1	0.6	4.7	37.1	39.4	14.1	100.0	3.64
Plan and write daily teaching plan	3.5	1.8	9.4	35.3	37.7	15.3	100.0	3.54
Total Group Mean Value								3.68

* Minimal = 1.00 to 1.49
Below Average = 1.50 to 2.49
Average = 2.50 to 3.49
Above Average = 3.50 to 4.49
Highly Competent = 4.50 to 5.00

TABLE VIII

TEACHERS' PERCEIVED LEVELS OF FUTURE NEEDED COMPETENCY IN INSTRUCTIONAL PLANNING

Competency N = 170	Percentage of Responses							Mean Value*
	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	
Determine needs and interests of students	5.3	0.6	0.6	11.2	45.3	37.0	100.0	4.24
Develop student performance objectives	5.3	0	0.6	18.2	42.4	33.5	100.0	4.15
Plan and write daily teaching plan	5.3	2.4	4.7	19.4	39.4	28.8	100.0	3.93
Total Group Mean Value								4.11

* Minimal = 1.00 to 1.49
Below Average = 1.50 to 2.49
Average = 2.50 to 3.49
Above Average = 3.50 to 4.49
Highly Competent = 4.50 to 5.00

within the level of 'above average' competency. The highest percentage scored was 'above average' (45.3 percent) in 'determine needs and interests of students'. The mean value for this competency item was 4.24. The total group mean value for all the competencies within this category was 4.11.

Teaching Methods and Techniques

The next category of competency studied was teaching methods and techniques. Eight different competency items were administered. Information recorded in Table IX shows how teachers perceived their presently held competencies in methods and techniques of teaching. The results reveal that six of the eight presently held education competencies were perceived to be of 'above average' competency. The single most competency item which was rated as 'highly competent' was in the 'control student behavior by establishing good rapport'. The mean value for this item was 4.07. Teachers responded poorly on the 'use of computer-assisted instruction' competency. Thirteen percent of the teachers rated the presently held competency in this particular item as 'minimal'; the mean value for this item was only 2.78, the lowest among all competency items within this category. The total group mean value for all the competency items within this category was 3.66.

Information presented in Table X shows the percentage of response on levels of future needed competencies in teaching methods and techniques. As shown in the table, the

TABLE IX

TEACHERS' PERCEIVED LEVELS OF PRESENT COMPETENCY IN TEACHING METHODS AND TECHNIQUES

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Introduce a lesson	3.5	0	1.2	22.4	48.2	24.7	100.0	4.00
Apply different methods and techniques of teaching	3.5	0.6	0.6	26.5	48.8	20.0	100.0	3.90
Motivate and involve students in teaching/ learning process	3.5	0.6	1.2	30.6	46.5	17.6	100.0	3.82
Use appropriate audio-visual aids	3.5	0.6	6.5	25.9	43.5	20.0	100.0	3.79
Control student behavior by establishing good rapport	3.5	0	1.2	21.7	42.4	31.2	100.0	4.07
Use computer-assisted instruction	3.5	13.0	28.8	28.8	18.8	7.1	100.0	2.78

TABLE IX (Continued)

Competency N = 170	Percentage of Responses							Mean Value*
	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	
Apply team teaching	5.3	11.2	15.9	39.4	22.3	5.9	100.0	2.96
Summarize a lesson	4.7	0	0	26.5	48.2	20.6	100.0	3.94
Total Group Mean Value								3.66

* Minimal = 1.00 to 1.49
Below Average = 1.50 to 2.49
Average = 2.50 to 3.49
Above Average = 3.50 to 4.49
Highly Competent = 4.50 to 5.00

TABLE X

TEACHERS' PERCEIVED LEVELS OF FUTURE NEEDED COMPETENCY IN TEACHING METHODS AND TECHNIQUES

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Introduce a lesson	4.7	0	0	12.3	51.8	31.2	100.0	4.20
Apply different methods and techniques of teaching	4.7	0	0	7.1	43.5	44.7	100.0	4.40
Motivate and involve students in teaching/ learning process	4.7	0.6	0	8.8	36.5	49.4	100.0	4.41
Use appropriate audio-visual aids	5.3	0	0.6	12.3	44.7	37.1	100.0	4.25
Control student behavior by establishing good rapport	5.3	0	0	8.2	36.5	50.0	100.0	4.44
Use computer-assisted instruction	4.7	1.8	3.5	17.6	31.8	40.6	100.0	4.11

TABLE X (Continued)

Competency N = 170	Percentage of Responses							Mean Value*
	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	
Apply team teaching	6.5	5.3	4.1	30.0	37.6	16.5	100.0	3.60
Summarize a lesson	6.5	0	0	15.9	48.8	28.8	100.0	4.14
Total Group Mean Value								4.19

* Minimal = 1.00 to 1.49
Below Average = 1.50 to 2.49
Average = 2.50 to 3.49
Above Average = 3.50 to 4.49
Highly Competent = 4.50 to 5.00

majority of the teachers responded only to two competency levels: the 'above average' and the 'highly competent' competencies. The item 'control student behavior by establishing good rapport' was perceived to be the most needed competency in the future, having a value of 4.44. On the other side of the scale, the teachers perceived 'apply team teaching technique' as the least needed competency in the future, with only 3.60 mean value. The total group mean value for all the competency items within this category was 4.19.

Instructional Evaluation

The next category of education competency studied was instructional evaluation. Three competency items were included in this category. Information presented in Table XI shows the perceived levels of education competency in instructional evaluation presently held by agricultural teachers. It was perceived that two levels, the 'average' and the 'above average' were the most commonly responded to by teachers for all competencies in this category. The competency 'assess student performance of manipulative skills and abilities' received the highest response (45.9 percent) in the 'above average level', with a mean value of 3.65. On the next lower scale, the competency 'establish criteria for student performance' was responded to by 40.0 percent in 'average' competency level; its mean value is 3.60. The total group mean value for all competencies presently held by teachers in the instructional

TABLE XI

TEACHERS' PERCEIVED LEVELS OF PRESENT COMPETENCY IN INSTRUCTIONAL EVALUATION

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Establish criteria for student performance	3.5	0	5.3	40.0	39.4	11.8	100.0	3.60
Assess student performance of manipulative skills and abilities	4.1	0.6	4.7	33.5	45.9	11.2	100.0	3.65
Evaluate instructional effectiveness	3.5	0	3.5	40.6	41.2	11.2	100.0	3.62
Total Group Mean Value								3.62

* Minimal = 1.00 to 1.49
Below Average = 1.50 to 2.49
Average = 2.50 to 3.49
Above Average = 3.50 to 4.49
Highly Competent = 4.50 to 5.00

evaluation competency category was 3.62.

Information in Table XII shows the levels of competencies in instructional evaluation that was perceived by teachers to be needed by the agricultural teachers in the future. On the whole, the results reveal that the teachers perceived higher level of competencies will be needed by the agricultural teachers in the future. This was indicated by the fact that all of the responses for all the three competency items fell within the 'above average' competency. All of the competency items received more than a 4.0 mean value. The total group mean value for all the competency items within this category was 4.10. It was also noted that less than one percent of the teachers responded to competency levels below than 'average' level.

Departmental Management

The next competency item studied was departmental management. Five competency items were included in this category. Information in Table XIII shows the perceptions of agricultural teachers on the levels of presently held competencies in departmental management. It was revealed that more teachers perceived the level of competencies in this category as 'above average.' The one competency 'provide healthy and safe learning environment' was responded to most frequently in the 'above average' and 'highly competent' levels registering 50.6 percent and 23.5 percent respectively. The mean value for this competency was 4.00. On the lower side of the scale, the competency

TABLE XII

TEACHERS' PERCEIVED LEVELS OF FUTURE NEEDED COMPETENCY IN INSTRUCTIONAL EVALUATION

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Establish criteria for student performance	4.1	0.6	0	18.8	52.4	24.1	100.0	4.04
Assess student performance of manipulative skills and abilities	4.7	0.6	0	16.5	49.4	28.8	100.0	4.11
Evaluate instructional effectiveness	4.1	0	0	16.5	48.8	30.6	100.0	4.15
Total Group Mean Value								4.10

* Minimal = 1.00 to 1.49
Below Average = 1.50 to 2.49
Average = 2.50 to 3.49
Above Average = 3.50 to 4.49
Highly Competent = 4.50 to 5.00

TABLE XIII

TEACHERS' PERCEIVED LEVELS OF PRESENT COMPETENCY IN DEPARTMENTAL MANAGEMENT

Competency N = 170	Percentage of Responses							Mean Value*
	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	
Develop and implement a statement of departmental policy	3.5	2.9	7.1	41.2	30.6	14.7	100.0	3.49
Determine and budget instructional resource needs	2.3	0.6	4.7	26.5	45.9	20.0	100.0	3.82
Organize and maintain filing system	2.3	1.8	10.0	38.2	31.8	15.9	100.0	3.51
Provide healthy and safe learning environment	2.3	0.6	1.8	21.2	50.6	23.5	100.0	4.00
Organize and manage classroom and laboratory facilities	2.9	0	0	23.6	54.1	19.4	100.0	3.96
Total Group Mean Value								3.76

* Minimal = 1.00 to 1.49
Below Average = 1.50 to 2.49
Average = 2.50 to 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

'develop and implement a statement of departmental policy' received a response of 41.2 percent for 'average' level competency; its mean value is 3.49. The total group mean value for all competencies in this category was 3.76.

The information in Table XIV shows the teachers' perceived levels of competencies needed in the future in departmental management competency category. It was indicated that a higher percentage of teachers rated 'highly competent' level of competency on all but one competency in this category. The competency 'provide healthy and safe learning environment' received with 57.6 percent on 'highly competent' level of competency. The mean value for this competency item is 4.53. On the next lower level of competency, the item 'develop and implement a statement of departmental policy' was responded with 41.7 percent on 'above average' level of competencies. The mean value for this competency was 4.17, the lowest among other competencies in this category. The total group mean value for teacher education competencies needed in the future in departmental management category was 4.39.

Guidance

The next category of competency studied was guidance. Three competency items were included in this category. Information presented in Table XV shows teachers' perceived levels of present competencies in guidance. It was revealed that all competencies in guidance category presently held by teachers were mostly at 'above average' level of competency.

TABLE XIV

TEACHERS' PERCEIVED LEVELS OF FUTURE NEEDED COMPETENCY IN DEPARTMENTAL MANAGEMENT

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Develop and implement a statement of departmental policy	4.7	1.8	1.2	25.3	41.7	25.3	100.0	4.17
Determine and budget instructional resource needs	5.3	0.6	0.6	12.3	37.1	44.1	100.0	4.30
Organize and maintain filing system	5.3	0	0	17.6	37.7	39.4	100.0	4.54
Provide healthy and safe learning environment	5.3	0	0	7.1	30.0	57.6	100.0	4.53
Organize and manage classroom and laboratory facilities	6.5	0	0	7.6	37.6	48.2	100.0	4.43
Total Group Mean Value								4.39

* Minimal = 1.00 to 1.49
Below Average = 1.50 to 2.49
Average = 2.50 to 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

TABLE XV

TEACHERS' PERCEIVED LEVELS OF PRESENT COMPETENCY IN GUIDANCE

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Develop and maintain liaison with school guidance personnel	2.3	1.8	10.6	28.2	37.7	19.4	100.0	3.64
Assess students' performance and make advisory recommendation	2.3	1.2	3.5	34.7	42.4	15.9	100.0	3.70
Provide information and assist students in securing employment or further education	2.9	1.2	7.1	34.7	35.3	18.8	100.0	3.66
Total Group Mean Value								3.67

* Minimal = 1.00 - 1.49
Below Average = 1.50 - 2.49
Average = 2.50 - 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

It was also noted that there was no competency item being responded to were rated extreme low or high on competency levels. The mean value for each competency was very close to each other. The total group mean value for all the competency items within this category was 3.67.

Information presented in Table XVI shows teachers' perceived levels of guidance competencies needed in the future. Two competency items 'develop and maintain liaison with school guidance personnel' and 'providing information and assist students in securing employment or further education' both recorded high percentage of responses in 'highly competent' level. The mean values for these two competencies are 4.30 and 4.35, respectively. The other competency item 'assess students' performance and make advisory recommendations' recorded the highest response in 'above average' level of competency. The mean value for this competency item is 4.17. The total group mean value for all the competencies in this category was 4.27. It was also noted that less than one percent response was recorded in 'below average' and 'minimal' levels.

School-Community Relations

The next category of competencies studied was school community relations. Three competency items were included in this category. Information presented in Table XVII shows teachers' perceived levels of present competencies in school community relations. It was found that most teachers responded highly in 'average' level for all the competencies

TABLE XVI

TEACHERS' PERCEIVED LEVELS OF FUTURE NEEDED COMPETENCY IN GUIDANCE

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Develop and maintain liaison with school guidance personnel	5.3	0.6	0	11.7	40.6	41.8	100.0	4.30
Assess students' performance and make advisory recommendation	5.3	0.6	0.6	15.9	42.9	34.7	100.0	4.17
Provide information and assist students in securing employment or further education	5.3	0.6	0	12.9	33.5	47.7	100.0	4.35
Total Group Mean Value								4.27

* Minimal = 1.00 - 1.49
Below Average = 1.50 - 2.49
Average = 2.50 - 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

TABLE XVII

TEACHERS' PERCEIVED LEVELS OF PRESENT COMPETENCY IN COMMUNITY RELATIONS

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Develop a plan for school community relations	2.3	1.2	7.7	40.0	32.5	15.9	100.0	3.56
Publicize the agriculture, education program through newspapers, electronic media, and public events	3.5	2.4	12.9	35.3	28.2	17.7	100.0	3.48
Maintain liaison with state and local education community and employment agencies	2.3	1.2	7.7	40.0	34.7	14.1	100.0	3.50
Total Group Mean Value								3.67

* Minimal = 1.00 - 1.49
Below Average = 1.50 - 2.49
Average = 2.50 - 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50

in this category. However, when the mean value was considered, the teachers perceived all competencies in this category to be of 'above average' level. The total group mean value for all the competencies in this category was 3.53.

Information presented in Table XVIII contains teachers' perceived levels of competencies in school and community relations needed in the future. It was found that the majority of teachers perceived all competencies in this category to be a minimum of 'above average' competency level. The competency items 'develop a plan for school-community relations' and 'publicize the agricultural education program through leaflets, newspapers, electronic media, and public events' both were responded with 38.2 percent and 51.7 percent, respectively, in 'highly competent' level. The mean values for both the competencies were 4.21 and 4.42 respectively. The remaining competency 'maintain liaison with state and local education, community and employment agencies' was received with 40.0 percent response value was in 'above average' level of competency. This competency had a 4.21 mean value. The total group mean value for all the competencies in the school community relations category was 4.26.

National FFA Organization

The next category of competency studied was National FFA Organization. Five different competency items were administered in the study. Information in Table XIX shows

TABLE XVIII

TEACHERS' PERCEIVED LEVELS OF FUTURE NEEDED COMPETENCY IN COMMUNITY RELATIONS

Competency N = 170	Percentage of Responses							Mean Value*
	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	
Develop a plan for school community relations	5.3	0	0	18.3	38.2	38.2	100.0	4.21
Publicize the agriculture, education program through newspapers, electronic media, and public events	6.5	0	1.2	10.6	30.0	51.7	100.0	4.42
Maintain liaison with state and local education community and employment agencies	5.3	0.6	1.2	17.0	40.0	35.9	100.0	4.16
Total Group Mean Value								4.26

* Minimal = 1.00 - 1.49
Below Average = 1.50 - 2.49
Average = 2.50 - 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

TABLE XIX

TEACHERS' PERCEIVED LEVELS OF PRESENT COMPETENCY IN NATIONAL FFA ORGANIZATION

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Publicize and attract prospective members of FFA	2.4	1.2	5.9	38.2	38.8	13.5	100.0	3.59
Supervise students in the organization and planning of FFA activities	3.5	0.6	3.5	25.3	47.1	20.0	100.0	3.85
Assist students in financial planning and management	3.5	1.2	7.6	37.7	38.8	11.2	100.0	3.53
Train teams for participation in shows and leadership contests	3.5	1.2	3.5	29.4	35.9	26.5	100.0	3.86
Evaluate the local FFA chapter	3.5	1.2	1.2	35.3	38.2	20.6	100.0	3.79
Total Group Mean Value								3.72

* Minimal = 1.00 - 1.49
Below Average = 1.50 - 2.49
Average = 2.50 - 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

teachers' perceived levels of education competencies presently held by agricultural teachers. It was revealed that all competency items recorded higher response in the 'above average' level of competency. The competency item 'train team for participation in shows and leadership contests' recorded a highest response (26.5 percent) among other competency items in 'highly competent' level. The mean value for this particular competency was 3.86. On the other side of the scale, the competency 'assist students in financial planning and management' recorded a highest response of 7.6 percent among other competency items in 'below average' level; its mean value was only 3.53, the lowest among all competencies within this category. The total group mean value for all present competencies in National FFA Organization category was 3.72.

Information presented in Table XX shows levels of competencies in National FFA Organization that are needed in the future. It was indicated that higher responses were recorded by all competency items in two higher levels: the 'above average' and 'highly competent' levels. The most well received competency item in 'highly competent' level was that of 'publicize and attract prospective members of FFA' with a response of 52.3 percent. Its mean was 4.38, the highest value within this competency category. On the lower levels of competency, the item 'assist students in financial planning and management' recorded a high response (20.6 percent) in 'average' level of competency; its mean value was only 4.13, the lowest among competency values in this

TABLE XX

TEACHERS' PERCEIVED LEVELS OF FUTURE NEEDED COMPETENCY IN NATIONAL FFA ORGANIZATION

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Publicize and attract prospective members of FFA	5.9	0.6	0.6	14.1	26.5	52.3	100.0	4.38
Supervise students in the organization and planning of FFA activities	4.7	0.6	0.6	12.9	37.7	43.5	100.0	4.29
Assist students in financial planning and management	4.7	0	0.6	20.6	40.0	34.1	100.0	4.13
Train teams for participation in shows and leadership contests	5.3	0	2.4	15.3	33.5	43.5	100.0	4.25
Evaluate the local FFA chapter	4.7	0	1.2	19.4	40.0	34.7	100.0	4.14
Total Group Mean Value								4.24

* Minimal = 1.00 - 1.49
Below Average = 1.50 - 2.49
Average = 2.50 - 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

category. The total group mean value for all future needed competencies in National FFA Organization was 4.24.

Adult Education Program

The next category of competencies studied was Adult Education Program. Three competency items were included in the study. Information in Table XXI shows the teachers' perceived levels of present competencies in Adult Education Program. It was revealed that all competency items recorded highest response in 'average' level of competency. On the higher scale, the competency item 'organize demonstrations, field-days and tours' were responded with 26.5 percent in 'above average' level; its mean value is 3.01. On the slightly lower side of the scale, the competency 'plan an annual instruction for adults' recorded higher responses (20.0 percent) among other competencies in 'below average' level. Its mean value was only 2.71, the lowest among the competencies in this category. The total group mean for all the competencies presently held by teachers in the Adult Education Program was 2.89

Information in Table XXII shows teachers' perceived levels of future needed competencies in Adult Education Program. It was found that the majority of teachers perceived all competency items needed in the future to be of 'above average' level of competency. On the higher scale, the competency 'organize demonstrations, field-days and tours' recorded the highest response (22.3 percent) in 'highly competent' level. The mean value for this

TABLE XXI

TEACHERS' PERCEIVED LEVELS OF PRESENT COMPETENCY IN ADULT EDUCATION PROGRAM

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Plan an annual program of instruction for adult	6.5	16.5	20.0	32.9	18.2	5.9	100.0	2.76
Utilize specialists and resource persons in the education program	7.1	12.3	17.7	29.4	22.3	8.2	100.0	2.90
Organize demonstration, field-days and tours	6.5	14.1	15.9	27.6	26.5	9.4	100.0	3.01
Total Group Mean Value								2.89

* Minimal = 1.00 - 1.49
Below Average = 1.50 - 2.49
Average = 2.50 - 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

TABLE XXII

TEACHERS' PERCEIVED LEVELS OF FUTURE NEEDED COMPETENCY IN ADULT EDUCATION PROGRAM

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Plan an annual program of instruction for adult	7.1	8.8	2.3	29.4	35.9	16.5	100.0	3.53
Utilize specialists and resource persons in the education program	7.1	10.0	1.7	27.1	33.5	20.6	100.0	3.57
Organize demonstration, field-days and tours	6.6	7.6	2.3	30.0	31.2	22.3	100.0	3.62
Total Group Mean Value								3.57

* Minimal = 1 00 - 1.49
Below Average = 1 50 - 2.49
Average = 2.50 - 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

competency was 3.62, the highest among other competencies within this category. On the slightly lower scale, the competency 'plan an annual instruction for adults' recorded a response of 29.4 percent in 'average' level; its mean value was only 3.53, the lowest among all competencies within this category. The total group mean value for all competencies needed in the future in Adult Education Program was 3.57.

Supervised Agricultural Experience (SAE)

The next category of competencies studies is Supervised Agricultural Experience (SAE). Four competencies were included in this category.

Information presented in Table XXIII shows the teachers' perceived levels of present competencies in Supervised Agricultural Experience. It was indicated that all competency items except one, recorded higher responses in the 'average' level competency. The competency 'plan and develop SAE' recorded the highest response (38.2 percent) among other competencies in 'above average' level of competency. The mean value for this particular competency was 3,46. On the lower scale, the competency 'prepare students to become involved in advanced technology development' recorded highest response (13.5 percent) among other competencies in 'below average' level. Its mean value was 3.29, the lowest in this category. The total group mean value for all competencies in the SAE category was 3.43.

Information presented in Table XXIV shows teachers'

TABLE XXIII

TEACHERS' PERCEIVED LEVELS OF PRESENT COMPETENCY IN SUPERVISED AGRICULTURAL EXPERIENCE

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Plan and develop SAE	3.5	2.4	12.9	31.2	38.2	11.8	100.0	3.46
Assist and supervise students in selecting and conducting SAE program	4.1	1.8	9.4	35.9	34.7	14.1	100.0	3.52
Assist students in developing comprehensive management skills	4.1	1.2	10.6	38.2	37.7	8.2	100.0	3.43
Prepare students to become involved in advanced technology development	4.7	3.5	13.5	41.2	25.9	11.2	100.0	3.29
Total Group Mean Value								3.43

* Minimal = 1.00 - 1.49
Below Average = 1.50 - 2.49
Average = 2.50 - 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

TABLE XXIV

TEACHERS' PERCEIVED LEVELS OF FUTURE NEEDED COMPETENCY IN SUPERVISED AGRICULTURAL EXPERIENCE

Competency N = 170	Percentage of Responses							Mean Value*
	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	
Plan and develop SAE	5.3	0	1.2	25.3	41.7	26.5	100.0	3.99
Assist and supervise students in selecting and conducting SAE program	7.1	0	1.8	24.7	38.8	27.6	100.0	3.99
Assist students in developing comprehensive management skills	6.5	0	1.2	23.5	40.6	28.2	100.0	4.03
Prepare students to become involved in advanced technology development	5.9	0	1.2	20.0	32.3	40.6	100.0	4.19
Total Group Mean Value								4.05

* Minimal = 1.00 - 1.49
Below Average = 1.50 - 2.49
Average = 2.50 - 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

perceived levels of competencies in Supervised Agricultural Experience needed in the future. It was found that a majority of teachers responded highly in all competencies except one, in 'above average' competency level. The competency 'prepare students to become involved in advanced technology development' recorded a high response of 40.6 percent in 'highly competent level; its mean value was 4.19, the highest among all competencies in this category. On the slightly lower scale, the competency 'plan and develop SAE' recorded a response of 25.3 percent in 'average' competency level. Its mean value was 3.99. The total group mean value for all competencies in SAE category was 4.05. It was also noted that no response was given to 'minimal' level in all competencies in this category.

Teacher Professionalism

The next category of competencies studied was teacher professionalism. Three competency items were included in in this category. Information presented in Table XXV shows teachers' perceived levels of present competencies in teacher professionalism. It was revealed that more teachers responded to 'above average' and 'highly competent' levels for all competencies in this category. The competency 'maintain a friendly, cooperative and helpful relationship with faculty and staff' was responded with 46.5 percent in 'highly competent' level. Its mean value was 4.36, the highest among all competencies in this category. On the slightly lower scale, the competency 'exhibit leadership by

TABLE XXV

TEACHERS' PERCEIVED LEVELS OF PRESENT COMPETENCY IN TEACHER PROFESSIONALISM

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Maintain a friendly, cooperative and helpful relationship with faculty and staff	2.9	0.6	1.2	7.6	41.2	46.5	100.0	4.36
Exhibit leadership by sharing knowledge and techniques with other faculty	1.8	1.2	6.5	22.3	41.2	27.0	100.0	3.88
Demonstrate evidence of professional demeanor, scholarship, and behavior	1.8	0	2.9	14.	48.8	31.8	100.0	4.11
Total Group Mean Value								4.12

* Minimal = 1.00 - 1.49
Below Average = 1.50 - 2.49
Average = 2.50 - 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

sharing knowledge and techniques with other faculty' recorded a response of 22.3 percent in 'average' category, the highest response among all competencies in this level. The mean for this competency was 3.88, the lowest value within this category. The group mean value for all competencies in teacher professionalism category was 4.12.

Information presented in Table XXVI shows teachers' perceived levels of competencies in teacher professionalism needed in the future. It was indicated that a majority of teachers responded to 'highly competent' level in all competencies. The competency 'maintain a friendly, cooperative and helpful relationship with faculty and staff' recorded the highest percentage of response (55.9 percent) in 'highly competent' level. Its mean value was 4.52, the highest value within this competency category. The competency 'exhibit leadership by sharing knowledge and techniques with other faculty' recorded a response of 46.5 percent in 'above average' level. The mean for this competency was 4.29, the lowest value within this competency category. The total group mean for all needed competencies in this category was 4.39.

Agricultural and Technological Development

The last category of competencies studied in this section was agricultural and technical development. Six competency items were included in this category. Information presented in Table XXVII shows the teachers' perceived levels of present instructional competencies in

TABLE XXVI

TEACHERS' PERCEIVED LEVELS OF FUTURE NEEDED COMPETENCY IN TEACHER PROFESSIONALISM

Competency	Percentage of Responses							
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	Mean Value*
Maintain a friendly, cooperative and helpful relationship with faculty and staff	5.3	0.6	0	5.3	32.9	55.9	100.0	4.52
Exhibit leadership by sharing knowledge and techniques with other faculty	4.1	0	1.2	8.8	46.5	39.4	100.0	4.29
Demonstrate evidence of professional demeanor, scholarship, and behavior	4.1	0	0	8.8	42.4	44.7	100.0	4.37
Total Group Mean Value								4.39

* Minimal = 1.00 - 1.49
Below Average = 1.50 - 2.49
Average = 2.50 - 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

TABLE XXVII

TEACHERS' PERCEIVED LEVELS OF PRESENT COMPETENCY IN AGRICULTURAL AND TECHNOLOGICAL DEVELOPMENT

Competency N = 170	Percentage of Responses							Mean Value*
	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	
<u>Deliver instruction in</u>:								
International economy or global agriculture	2.9	5.9	12.3	41.2	30.6	7.1	100.0	3.21
Marketing, finance and trading skills	3.5	4.1	13.5	41.8	28.8	8.3	100.0	3.24
Biotechnology and genetic engineering	2.9	10.0	22.4	37.6	21.8	5.3	100.0	2.90
International competition in food and fiber market	2.9	11.2	24.7	42.4	14.7	4.1	100.0	2.75
Managerial skills	4.1	2.9	11.2	37.1	35.3	9.4	100.0	3.39
Information technology	3.5	12.4	24.7	35.9	18.2	5.3	100.0	2.79
Total Group Mean Value								3.05

* Minimal = 1.00 - 1.49
Below Average = 1.50 - 2.49
Average = 2.50 - 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

agricultural and technological development. It was revealed that all the highest responses in each competency were checked in 'average' level' of competency. The instructional competency in 'managerial skills' recorded highest response (35.3 percent), among other competency items, in 'above average' level. Its mean value was 3.39, the highest in this category. On the lower side of the scale, the instructional competency in 'international competition in food and fiber markets' recorded a higher response (24.7 percent) in 'below average' level of competency. The mean for this competency was 2.75, the lowest in this category. The total group mean value for all the competencies in this category was 3.05.

Information presented in Table XXVIII shows the teachers' perceived levels of instructional competencies in agricultural and technological development needed in the future. It was found that a majority of teachers responded to all but one competency items, in 'above average' level. The instructional competency in 'managerial skills' was recorded highest response (40.0 percent) in 'highly competent' level. The mean value for this needed instructional competency was 4.23, the highest within this competency category. On the slightly lower scale, the instructional competency in 'international competition in food and fiber markets' recorded a high percentage of response (24.1 percent) in 'average' level of competency. The mean value for this competency was 3.93, the lowest in this competency category. The total group mean for all

TABLE XXVIII

TEACHERS' PERCEIVED LEVELS OF FUTURE NEEDED COMPETENCY IN AGRICULTURAL AND TECHNOLOGICAL DEVELOPMENT

Competency	Percentage of Responses							Mean Value*
N = 170	No Resp.	Minimal	Below Average	Average	Above Average	Highly Compet.	Total Pct	
Deliver instruction in:								
International economy or global agriculture	4.7	1.2	0.6	23.5	38.8	31.2	100.0	4.03
Marketing, finance and trading skills	5.3	0.6	0.6	21.2	40.0	32.3	100.0	4.09
Biotechnology and genetic engineering	4.7	0.6	3.5	18.2	37.7	35.3	100.0	4.09
International competition in food and fiber market	4.7	1.8	2.3	24.1	40.0	27.1	100.0	3.93
Managerial skills	5.3	0.6	0.6	15.3	38.2	40.0	100.0	4.23
Information technology	5.9	1.8	3.5	16.5	40.6	31.7	100.0	4.03
Total Group Mean Value								4.07

* Minimal = 1.00 - 1.49
Below Average = 1.50 - 2.49
Average = 2.50 - 3.49
Above Average = 3.50 - 4.49
Highly Competent = 4.50 - 5.00

instructional competencies in this category was 4.07.

Comparison of Perceptions of Future Needed Competencies According to Years of Experience of Agricultural Teachers

This section deals with future educational competencies as perceived by agricultural teachers based on their number of years of experience. The data to be presented are concerned with means related to levels of competencies in different categories of educational competencies as rated by teachers of different years of experience. The years of teaching experience were classified into five groups: 0-5 years; 6-10 years; 11-15 years; 16-20 years; and 21 plus years. There were 170 teachers who responded to the questionnaires.

Planning, Development and Evaluation of Local Program

Five educational competencies were included in this category. Data in Table XXIX shows the mean values of levels of competencies as rated by teachers based on their years of experience. It was found that all groups of teachers rated the future needed competencies within the 'above average' level. The mean response ranged from 3.80 (rated by 0-5 year group) to 4.07 (rated by 16-20 year group). The F-value was .44, indicating that there was no significant difference (at .05 level) in the responses by teachers according to years of experience.

TABLE XXIX

COMPARISON OF PERCEPTIONS ACCORDING TO YEARS OF EXPERIENCE CONCERNING LEVELS OF COMPETENCIES IN PLANNING, DEVELPMENT AND EVALUATION OF LOCAL PROGRAMS

	Years of Experience						F-Value
	No Res.	0-5	6-10	11-15	16-20	20+	
N = 170	13	14	32	32	31	48	
Mean		3.80	3.96	4.04	4.07	4.02	.443

Instructional Planning

Three competency items were included in this category. Data were presented in Table XXX. The mean values obtained ranged from 3.91 to 4.16. This indicated that teachers from all groups of experience perceived educational competencies needed in the future in istructional evaluation to be of 'above average' level. The F - value derived from the analysis was .51, indicating that there was no significant differences (at .05 level) in the response by teachers from all different years of teaching experience.

Teaching Methods and Techniques

The next competency category studied was teaching methods and techniques. Eight competency items were included in this category. Data presented in Table XXXI shows the response of teachers of different years of experience to the competency levels needed in the future.

It was indicated that all teachers from all groups of years of experience responded to the competencies in this category with 'above average' level.

TABLE XXX

COMPARISON OF PERCEPTIONS ACCORDING TO YEARS OF EXPERIENCE CONCERNING LEVELS OF COMPETENCIES IN INSTRUCTIONAL PLANNING

	Years of Experience						F-Value
	No Res.	0-5	6-10	11-15	16-20	20+	
N = 170	13	14	32	32	31	48	
Mean		3.91	4.02	4.16	4.14	4.13	.51

The mean values ranged from the lowest of 3.97 responded by teachers with 0-5 years experience to 4.39 responded by teachers with 11-15 years of experience.

TABLE XXXI

COMPARISON OF PERCEPTIONS ACCORDING TO YEARS OF EXPERIENCE CONCERNING LEVELS OF COMPETENCIES IN TEACHING METHODS AND TECHNIQUES

	Years of Experience						F-Value
	No Res.	0-5	6-10	11-15	16-20	20+	
N = 170	13	14	32	32	31	48	
Mean		3.97	4.14	4.39	4.20	4.16	1.56

The F - value was 1.56 indicating that there was no significant difference (at .05 level) in the response among the years of experience groups.

Instructional Evaluation

The next competency category studied was instructional evaluation. Three competency items were included in this category. Data in Table XXXII shows the mean response of teachers based on different years of experience. It was

TABLE XXXII

COMPARISON OF PERCEPTIONS ACCORDING TO YEARS OF EXPERIENCE CONCERNING LEVELS OF COMPETENCIES IN INSTRUCTIONAL EVALUATION

	Years of Experience						F-Value
	No Res.	0-5	6-10	11-15	16-20	20+	
N = 170	13	14	32	32	31	48	
Mean		3.98	4.00	4.17	4.12	4.11	.47

found that teachers from all groups of years of experience perceived needed future competencies in instructional evaluation to be of 'above average' level. The mean response ranged from 3.98 by 0-5 year experience group to 4.17 by 11-15 year experience group. The F - value derived from the analysis was .47, indicating that there was no significant difference (at .05 level) in the ratings made by teachers of different years of teaching experience groups.

Departmental Management

The next competency category studied was departmental management. Five competency items were included in this category. Data in Table XXXIII shows the perceptions of teachers, by years of experience groups, toward departmental management competencies needed in the future. It was

TABLE XXXIII

COMPARISON OF PERCEPTIONS ACCORDING TO YEARS OF EXPERIENCE CONCERNING LEVELS OF COMPETENCIES IN DEPARTMENTAL MANAGEMENT

	Years of Experience						F-Value
	No Res.	0-5	6-10	11-15	16-20	20+	
N = 170	13	14	32	32	31	48	
Mean		4.30	4.10	4.47	4.25	4.25	1.73

revealed that all groups of teachers, except one, perceived needede competencies to be of 'above average' level. The group with 16-20 years experience perceived this needed competencies to be of 'highly competent' level. The mean response for the whole groups ranged from 4.10 to 4.47. The F - value obtained was 1.73 which indicates that there was no significant difference (at .05 level) among the responses.

Guidance

Three competency items were included in the guidance competency category. Data in Table XXXIV shows the perceptions of teachers, by years of teaching experience, on the future needed competencies in guidance category. It was

TABLE XXXIV

COMPARISON OF PERCEPTIONS ACCORDING TO YEARS OF EXPERIENCE CONCERNING LEVELS OF COMPETENCIES IN GUIDANCE

	Years of Experience						F-Value
	No Res.	0-5	6-10	11-15	16-20	20+	
N = 170	13	14	32	32	31	48	
Mean		4.14	4.12	4.37	4.36	4.25	.83

found that teachers from all groups of years of teaching experience perceived all needed competencies to be of 'above average' level. The mean response ranged from 4.14 by 11-15 year experience group to 4.37 by 16-20 year experience group. The F - value derived from this analysis was .83, indicating that thre was no significant difference (at .05 level) in the responses of teachers from all identified years of experience groups.

School-Community Relations

The next competency category studied was school community relations. three competency items were included in this category. Data in Table XXXV shows the mean values of competency levels as perceived by teachers of different groups of years of teaching experience. It was revealed

TABLE XXXV

COMPARISON OF PERCEPTIONS ACCORDING TO YEARS OF EXPERIENCE CONCERNING LEVELS OF COMPETENCIES IN SCHOOL-COMMUNITY RELATIONS

	Years of Experience						F-Value
	No Res.	0-5	6-10	11-15	16-20	20+	
N = 170	13	14	32	32	31	48	
Mean		4.36	4.08	4.39	4.21	4.25	.99

that teachers from all experience groups rated 'above average' level to be the needed competencies in the future. The mean response ranged from 4.08 rated by 11-15 year experience group to 4.39 rated by 16-20 year experience group. The F- value derived from this particular analysis was .99. This indicates that there was no significant difference (at .05 level) in the response made by teachers based on their years of teaching experience.

National FFA Organization

The next competency category studied was National FFA Organization. Five competency items were included in the study. Data in Table XXXVI shows a summary of mean response on future needed competencies as perceived by teachers of

TABLE XXXVI

COMPARISON OF PERCEPTIONS ACCORDING TO YEARS OF EXPERIENCE CONCERNING LEVELS OF COMPETENCIES IN NATIONAL FFA ORGANIZATION

	Years of Experience						F-Value
	No Res.	0-5	6-10	11-15	16-20	20+	
N = 170	13	14	32	32	31	48	
Mean		4.37	4.18	4.16	4.41	4.12	1.61

different years of teaching experience. It was found that teachers from all experience groups rated competencies needed in the future to be of 'above average' level. The mean response ranged from 4.12 rated by 21 plus years group to 4.41 rated by 16-21 years experience group. The F value derived from this analysis was 1.61, indicating that there was no significant difference (at .05 level) in the response made by teachers of all experience groups.

Adult Education Program

The next category of educational competencies studied was Adult Education Program. Five competency items were

included in this category. Data in Table XXXVII shows a summary of mean response on future needed competencies in Adult Education Program as perceived by teachers of

TABLE XXXVII

COMPARISON OF PERCEPTIONS ACCORDING TO YEARS OF EXPERIENCE CONCERNING LEVELS OF COMPETENCIES IN ADULT EDUCATION PROGRAM

	Years of Experience						F-Value
	No Res.	0-5	6-10	11-15	16-20	20+	
N = 170	13	14	32	32	31	48	
Mean		3.57	3.47	3.51	3.66	3.52	.50

different groups of teaching experience. It was found that all teachers of different experience groups, except one, perceived these needed future competencies as 'above average' level. The mean response ranged from a low of 3.47 ('average' level) rated by 6-10 year experience group to 3.66 rated by 16-20 year experience group. The F - value derived from this analysis was .50, indicating that there was no significant (at .05 level) difference in the response made by teachers based on their years of teaching experience.

Supervised Agricultural Experience (SAE)

The next category of educational competencies studied was Supervised Agricultural Experience (SAE). Four

competency items were included in this category. Data in Table XXXVIII contains a summary of mean response in future needed competencies as perceived by teachers of different years of teaching experience. It was revealed that teachers from all groups of years of experience rated all competencies in this category to be of 'above average' level. The mean response ranged from 3.94 rated by 6-10 year experience group to 4.13 rated by 0-5 year experience group. The F - value derived from this analysis was .25. This idicated that that there was no significant difference (at .05 level) in the response by all teachers on the basis of years of teaching experience.

TABLE XXXVIII

COMPARISON OF PERCEPTIONS ACCORDING TO YEARS OF EXPERIENCE CONCERNING LEVELS OF COMPETENCIES IN SUPERVISED AGRICULTURAL EXPERIENCE (SAE)

	Years of Experience						F-Value
	No Res.	0-5	6-10	11-15	16-20	20+	
N = 170	13	14	32	32	31	48	
Mean		4.13	3.94	4.01	4.11	4.06	.25

Teacher Professionalism

The next category of educational competencies studied was teacher professionalism. Three competency items were included in this category. Data presented in Table XXXIX

shows a summary of mean response in teacher professionalism competencies as perceived by teachers of different years of experience groups. It was found that teachers of all experience groups, except one, perceived needed future competencies to be of 'above average' level. The mean response ranged from 4.19 rated by 0-5 year experience group

TABLE XXXIX

COMPARISON OF PERCEPTIONS ACCORDING TO YEARS OF EXPERIENCE CONCERNING LEVELS OF COMPETENCIES IN TEACHER PROFESSIONALISM

	Years of Experience						F-Value
	No Res.	0-5	6-10	11-15	16-20	20+	
N = 170	13	14	32	32	31	48	
Mean		4.19	4.47	4.51	4.31	4.38	.82

to 4.51 ('highly competent' level) reated by 11-15 year teaching experience group. The F - value derived from this analysis was .82, indicating that there was no significant difference (at .05 level) in the response by teachers of all experience groups.

Agricultural and Technical Development

The last competency category studied in this section was competency instructional delivery in agricultural and technical development. Six competency items were included in this category. Data in Table XL shows a summary of mean response of needed instructional competencies in

agricultural and technical development by teacher of different years of teaching experience.

TABLE XL

COMPARISON OF PERCEPTIONS ACCORDING TO YEARS OF EXPERIENCE CONCERNING LEVELS OF COMPETENCIES IN AGRICULTURAL AND TECHNOLOGICAL DEVELOPMENT

	Years of Experience						F-Value
	No Res.	0-5	6-10	11-15	16-20	20+	
N = 170	13	14	32	32	31	48	
Mean		3.88	3.98	4.12	4.16	3.99	1.25

It was revealed that teachers from all groups of teaching experience perceived instructional competencies in this category to be of 'above average' level. The mean response ranged from 3.88 rated by 0-5 year experience group to 4.16 as rated by 16-20 year experience group. The F - value derived from this analysis was 1.25, indicating that there was no significant difference (at .05 level) in the response by teachers based on their years of experience.

Comparison of Perceptions of Teachers and Teacher Educators Concerning Levels of Educational Competencies Needed in the 1990s

This section deals with the fourth and the last objective of the study, that is to compare the perceptions

of agricultural teachers with the teacher educators concerning the levels of educational competencies needed by the agricultural teachers in the mid-1990s. Data presented are concerned with means and standard deviations of each competency category. A T - value was obtained in each category of competencies in order to determine whether significant difference existed between the study groups.

Planning, Development and Evaluation of Local Programs

The first category of competencies studied in this section was concerned with planning, development and evaluation of local programs. Five competency items were included in this category. Data in Table XLI shows a summary of analysis of means and standard deviations concerning teacher and teacher educator responses to the levels of needed competencies in this category. It was revealed that both groups of respondents perceived competencies needed in the future to be of 'above average' level. The mean response obtained for teachers was 4.00 with a standard deviation of .65. The mean response for teacher educators was 4.21 with a standard deviation of .59. A T - value of 2.65 was derived which demonstrates that there was a significant difference between the responses made by teachers and those made by teacher educators.

TABLE XLI

COMPARISON OF PERCEPTIONS OF TEACHERS AND TEACHER EDUCATORS CONCERNING FUTURE NEEDED LEVELS OF COMPETENCIES IN PLANNING, DEVELOPMENT AND EVALUATION OF LOCAL PROGRAMS

	Teacher N = 170	Teacher Educator N = 97	T-Value	Probability
Mean	4.00	4.21	2.65	.01
Std. Dev.	.65	.59		

there were significant differences between the responses of teachers and teacher educators on the competency levels needed in the future.

Instructional Planning

Three competency items were included in this competency category. A comparison of responses from teachers and teacher educators was conducted, and results are shown in Table XLII. It was observed that both teachers and teacher educators perceived these needed competencies to be of 'above average' level. The mean response for teacher group was 4.10 with a standard deviation of .66. The response for the teacher group was higher with a mean of 4.44; its standard deviation was .54. The T - value derived from the total response and analysis was 4.26. This indicates that there was a significant difference in the response of teachers and teacher educators in this future needed competency category .

TABLE XLII

COMPARISON OF PERCEPTIONS OF TEACHERS AND TEACHER EDUCATORS CONCERNING LEVELS OF COMPETENCIES IN INSTRUCTIONAL PLANNING

	Teacher N = 170	Teacher Educator N = 97	T-Value	Probability
Mean	4.10	4.44	4.26	0.00
Std. Dev.	.66	.54		

Teaching Methods and Techniques

The next competency category studied was teaching methods and techniques. Six competencies were included in this category. Data in Table XLIII shows a summary of mean responses and standard deviations analysed for each group of respondents. It was found that both teachers and teacher educators rated competencies in this category to be of 'above average' level. The mean response of teachers was 4.17 with a standard deviation Of .56. The teacher educators' response gave a mean of 4.53 with a standard

TABLE XLIII
COMPARISON OF PERCEPTIONS OF TEACHERS AND TEACHER EDUCATORS CONCERNING LEVELS OF COMPETENCIES IN TEACHING METHODS AND TECHNIQUES

	Teacher N = 170	Teacher Educator N = 97	T-Value	Probability
Mean	4.17	4.53	4.90	0.00
Std. Dev.	.56	.62		

deviation of .62. The F - value derived from both group responses was 4.90. This indicates that there was a significant difference (at .05 level) between responses of the two groups.

Instructional Evaluation

The next competency category studied was instructional evaluation. Three competency items were included in this category. Data in Table XLIV contains a summary of mean responses from teachers and teacher educators. It was found that teachers rated 'above average' level of competency in this competency category, while teacher educators rated as 'highly competent' level for the same competency category. The mean response of teachers was 4.10 with a standard deviation of .54, while teacher educators returned with a mean score of 4.54 with a standard deviation of .51. The F - value derived from both group responses was 4.90.

TABLE XLIV

COMPARISON OF PERCEPTIONS OF TEACHERS AND TEACHER EDUCATORS CONCERNING LEVELS OF COMPETENCIES IN INSTRUCTIONAL EVALUATION

	Teacher N = 170	Teacher Educator N = 97	T-Value	Probability
Mean	4.10	4.54	5.99	0.00
Std. Dev.	.54	.51		

This was a clear indication that there is a significant difference (at .05 level) between the responses made by teachers and those made by teacher educators.

Departmental Management

The next competency category studied was departmental management. Five competency items were included in this category. Table XLV contains a summary of data relating to mean response and standard deviations. It was revealed that both groups of teachers and teacher educators perceived needed competencies in this category to be of 'above average' level. The mean obtained by teacher response was 4.30 with a standard deviation of 1,22. The mean for teacher educator response was 4.26 with a standard deviation of .53. The T - value derived from the analysis was .53, indicating that there was no significant difference (at .05 level) between the responses of the two groups of teachers and teacher educators.

TABLE XLV

COMPARISON OF PERCEPTIONS OF TEACHERS AND TEACHER EDUCATORS CONCERNING LEVELS OF FUTURE NEEDED COMPETENCIES IN DEPARTMENTAL MANAGEMENT

	Teacher N = 170	Teacher Educator N = 97	T-Value	Probability
Mean	4.30	4.26	.53	.60
Std. Dev.	1.22	.53		

Guidance

The next competency category studied was guidance. Three competency items were included in this category. A summary of responses by teachers and teacher educators is presented in Table XLVI. It was revealed that both groups of respondents perceived level of future needed competencies in this category to be of 'above average'. The mean value obtained from teacher response was 4.28 with a standard deviation of .63. The mean value obtained from teacher educator response was 4.31 with a standard deviation of .57. The T - value derived from the analysis of responses of both groups was .48, indicating that there was no significant difference (at .05 level) between the two group responses.

School-Community Relations

The next competency category studied was school community relations. Three competency items were included in this category.

TABLE XLVI

COMPARISON OF PERCEPTIONS OF TEACHERS AND TEACHER EDUCATORS CONCERNING LEVELS OF FUTURE NEEDED COMPETENCIES IN GUIDANCE

	Teacher N = 170	Teacher Educator N = 97	T-Value	Probability
Mean	4.28	4.31	.48	.63
Std. Dev.	.63	.57		

A summary of data concerning means of responses and standard deviations for both teachers and teacher educators is presented in Table XLVII. The results pointed out that both teachers and teacher educators

TABLE XLVII

COMPARISON OF PERCEPTIONS OF TEACHERS AND TEACHER EDUCATORS CONCERNING LEVELS OF FUTURE NEEDED COMPETENCIES IN SCHOOL-COMMUNITY RELATIONS

	Teacher N = 170	Teacher Educator N = 97	T-Value	Probability
Mean	4.26	4.17	1.10	.27
Std. Dev.	.66	.61		

rated future needed competencies in school community relations to be of 'above average' level. The mean score for the teachers was 4.26 with a standard deviation of .66, while the teacher educators obtained a mean of 4.17 with a standard deviation of .61. A T - value of 1.10 was derived from the responses of both groups. This value indicated that there was no significant difference (at .05 level) between the responses of teachers and teacher educators.

National FFA Organization

The next competency category studied was National FFA Organization. Five competencies were included in this category. A summary of means of responses and standard deviations is presented in Table XLVIII. It was found that

both teacher and teacher educators perceived future needed competencies in this category to be of 'above average'

TABLE XLVIII

COMPARISON OF PERCEPTIONS OF TEACHERS AND TEACHER EDUCATORS CONCERNING LEVELS OF FUTURE NEEDED COMPETENCIES IN NATIONAL FFA ORGANIZATION

	Teacher N = 170	Teacher Educator N = 97	T-Value	Probability
Mean	4.21	4.19	.28	.78
Std. Dev.	.64	.62		

level. The mean obtained by teacher group was 4.21 with a standard deviation of .64, while the teacher educator group recorded a mean of 4.19 with a standard deviation of .62. A T - value of .28 was derived from the two groups of responses. This value indicated that there was no significant difference (at .05 level) between the ratings given by both groups of teachers and teacher educators.

Adult Education Program

The next competency category studied was Adult Education Program. Three competency items were included in this category. Data in Table XLIX contains a summary of means and standard deviations obtained from teacher and teacher educator responses in the levels of competencies in this category.

TABLE XLIX

COMPARISON OF PERCEPTIONS OF TEACHERS AND TEACHER EDUCATORS CONCERNING LEVELS OF FUTURE NEEDED COMPETENCIES IN ADULT EDUCATION PROGRAM

	Teacher N = 170	Teacher Educator N = 97	T-Value	Probability
Mean	3.57	3.62	.31	.76
Std. Dev.	1.07	.94		

It was revealed that both teacher and teacher educator groups perceived needed competencies in Adult Education Program to be of 'above average' level. The mean obtained from teacher response was 3.57 with a standard deviation of 1.07, while the mean of the teacher educator response was 3.62 with a standard deviation of .94. The T -value derived from the two groups responses was .31 indicating that there was no significant difference (at .05 level) existed between the responses of the two groups.

Supervised Agricultural Experience (SAE)

The next competency category studied was Supervised Agricultural Experience (SAE). Four competency items were included in this category. A summary of information related to means and standard deviations obtained from teacher and teacher educator responses is presented in Table L. The results pointed out that both teachers and teacher educators

TABLE L

COMPARISON OF PERCEPTIONS OF TEACHERS AND TEACHER EDUCATORS CONCERNING LEVELS OF FUTURE NEEDED COMPETENCIES IN SUPERVISED AGRICULTURAL EXPERIENCE (SAE)

	Teacher N = 170	Teacher Educator N = 97	T-Value	Probability
Mean	4.05	4.39	4.06	0.00
Std. Dev.	.68	.63		

perceived level of competencies in this category needed in the future to be of 'above average'. The mean obtained by teachers was 4.05 with a standard deviation of .68, while the mean obtained by teacher educators was 4.39 with a standard deviation of .63. A T- value of 4.06 was derived from the analysis of responses from both groups. This value indicated that there was a significant difference (at .05 level) between the two groups.

Teacher Professionalism

The next category studied was teacher professionalism. Three competency items were included in this category. A summary of information related to means and standard deviations obtained from teacher and teacher educator responses is presented in Table LI. The results pointed out that both teachers and teacher educators perceived level of

TABLE LI

COMPARISON OF PERCEPTIONS OF TEACHERS AND TEACHER EDUCATORS CONCERNING LEVELS OF FUTURE NEEDED COMPETENCIES IN TEACHER PROFESSIONALISM

	Teacher N = 170	Teacher Educator N = 97	T-Value	Probability
Mean	4.39	4.43	.54	.59
Std. Dev.	.59	.58		

competencies needed in the future in this category to be of 'above average' competency level. The mean value obtained from teacher response was 4.39 with a standard deviation of .59, while the mean value obtained from teacher educator response was 4.43 with a standard deviation of .58. A T - value of .54 was derived from the analysis of the two groups of responses. This value indicated that there is no significant difference (at .05 level) between the two groups of teachers and teacher educators.

Agricultural and Technological Development

The last competency category studied in this section was instructional delivery in agricultural and technological development. Six competency items were included in this category. A summary of means and standard deviation obtained from teacher and teacher educator responses is presented in Table LII. It was revealed that both teachers

TABLE LII

COMPARISON OF PERCEPTIONS OF TEACHERS AND TEACHER EDUCATORS CONCERNING LEVELS OF FUTURE NEEDED COMPETENCIES IN AGRICULTURAL AND TECHNOLOGICAL DEVELOPMENT

	Teacher N = 170	Teacher Educator N = 97	T-Value	Probability
Mean	4.06	4.22	1.93	.05
Std. Dev.	.71	.52		

and teacher educators perceived competency level needed in the future in this competency category to be of 'above average' level. The mean value obtained from teacher response was 4.06 with a standard deviation of .71, while the mean value obtained from teacher educator response was 4.22 with a standard deviation of .52. A T - value of 1.93 was derived from the responses of both groups. This value indicated that there was no significant difference (at .05 level) between the two studied groups.

Comments Expressed by the Respondents

Both teachers and teacher educators were requested to express what they think is the one education competency that an agricultural teacher should possess. Some responses received were in the form of teacher characteristics or teacher qualities. A summary of the responses, listed in order of greater number of responses is shown in Table LIII.

TABLE LIII

SUMMARY OF COMMENTS EXPRESSED
BY THE RESPONDENTS

Competencies or Teacher Characteristics	Responses	
	Teachers	Teacher Educators
Teaching methods and techniques	23	36
Human or public relation skills	25	13
Teacher professionalism and leadership	11	15
Knowledge of subject matter and adaptation to new technology	10	10
Teacher qualities	12	5
Departmental management	6	6
Providing information on career opportunities	4	2
Positive attitudes toward change	3	3
Others	18	2
Total number responded (Percentage)	112 (31.4)	83 (72.2)

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Study

The purpose of this study was to determine the selected professional education competencies needed by agricultural teachers in facing the instructional delivery challenges of the mid-1990, as perceived by agricultural teachers and agricultural teacher educators. The research objectives were:

1. To determine the agricultural teachers' present levels of selected professional education competencies.
2. To determine the future levels of selected professional education competencies needed by agricultural teachers.
3. To compare the perceptions of teachers based on years of experience concerning the levels of professional education competencies needed by agricultural teachers in the future.
4. To compare the perceptions of agricultural teachers with the agricultural teacher educators concerning the levels of professional education competencies needed by agricultural teachers in the future.

The population of the study included all agricultural teachers and agricultural teacher educators from the Southern Region which includes the states of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia. A stratified proportional random sample of agricultural teachers were selected to participate in the study. All agricultural teacher educators were included in the study.

A survey instrument in the form of a questionnaire was used in the study. The major part of the questionnaire was a listing of selected education competencies. These competencies were divided into twelve categories. A five-point Likert type scale, with real limits, was established. A pilot study was conducted using agricultural teachers from the state of Oklahoma. The final questionnaire was mailed out for data collection.

Findings of the Study

The findings of the study in regard to the major perceived concerns are presented in both tabular and narrative summaries in the following sections.

Demographic Data of the Respondents

A summary of demographic data is presented in Table LIV. One hundred and seventy agricultural teachers (47.6 percent) and 97 agricultural teacher educators (84.3 percent) in the Southern Region of the United States

TABLE LIV

SUMMARY OF DEMOGRAPHIC DATA CONCERNING TEACHERS AND TEACHER EDUCATORS PARTICIPATING IN THE STUDY

Demographic Items	Teachers	%	Teacher Educators	%
Number of Respondents	170	47.6	97	84.3
Age Groups:				
25 years and below	4	2.3	0	0
26-35 years	45	26.5	8	8.2
36-45 years	72	42.3	38	39.2
46-55 years	29	17.1	25	25.8
55 plus years	10	5.9	22	22.7
No Respond	10	5.9	4	4.1
Educational Level:				
Bachelor's degree	63	37.1	1	1.0
Master's degree	93	54.7	3	3.1
Specialist degree	8	4.7	1	1.0
Doctoral degree	2	1.2	92	94.9
No Respond	4	2.3	0	0
Experience Groups:				
0-5 years	14	8.2	6	6.2
6-10 years	35	20.6	7	7.2
11-15 years	32	18.8	11	11.3
16-20 years	31	18.2	18	18.6
21 plus years	46	27.1	47	48.5
No Respond	12	7.1	8	8.2

participated in the study. Both teachers and teacher educators were classified into five age groups. The 36-45 year age group represented the highest group among the teachers and teacher educators (42.3 percent and 39.2 percent of respectively). The lowest age group for both teachers and teacher educators was the 25 years and below group.

In regard to the educational level of the respondents,

54.7 percents of the teacher respondents possessed Master's degrees while 94.9 percent of the teacher educators possessed doctoral degrees. In the analysis of teaching experience, it was found that 21.7 percent of the teachers and 48.5 of the teacher educators were within the 21 plus years of experience group. The group with the least number of teachers and teacher educators was that of 0-5 year experience group recording only 8.2 percent and 6.2 percent, respectively.

Findings Concerning Teachers' Perceived Levels of Present and Future Needed Education Competencies

Fifty one selected educational competencies were included in the study. These competencies were then classified into twelve categories or areas of competencies. A summary of category mean of means for levels of present and future needed competencies is presented in Table LV. The results of the analysis pointed out that, on the whole, the perceived levels of education competencies held by teachers presently is of 'above average.' The average group mean value being 3.58. The Adult Education Program competencies were rated to be the lowest with a group mean of only 2.89.

The highest level of competency held presently is the teacher professionalism category with a group mean of 4.2. With regard to future needed competencies, the two categories showing the greatest need are teacher

TABLE LV

SUMMARY OF FINDINGS CONCERNING TEACHERS' PERCEIVED LEVELS OF PRESENT AND FUTURE NEEDED EDUCATION COMPETENCIES

Competency Categories	Mean of Means	
	Present Level	Future Level
Planning, Development and Evaluation of Local Programs	3.65	4.01
Instructional Planning	3.68	4.11
Teaching Methods and Techniques	3.66	4.19
Instructional Evaluation	3.62	4.10
Departmental Management	3.76	4.39
Guidance	3.67	4.27
School Community Relations	3.67	4.26
National FFA Organization	3.72	4.24
Adult Education Program	2.89	3.57
Supervised Agricultural Experience (SAE)	3.43	4.05
Teacher Professionalism	4.12	4.39
Agricultural and Technological Development	3.05	4.07
Total Groups Mean of Means	3.58	4.14

professionalism and departmental management, both with a category mean of 4.39. This mean value falls within the 'Above Average' level.

Findings Concerning Perceptions of Teachers, Based on Years of Experience,on Future Needed Competencies

There were 170 teachers involved in this part of the study. These teachers were classified into five groups of years of experience: 0-5 years; 6-10 years; 11-15 years; 16-20 years; and 21 plus years. It was found that, in ten out of twelve competency categories, teachers with less years of experience groups perceived lower levels of needed competencies than teachers with more years of teaching experience. The two exception competency categories were the National FFA Organization and Supervised Agricultural Experience program. It was also found in an analysis of teacher responses, based on years of teaching experience, that no significant differences existed at the .05 level in all other categories of competencies.

Findings Concerning Perceptions of Teachers and Teacher Educators on the Future Needed Competencies

One hundred and seventy teachers and 97 teacher educators responded to this section of the study. Data presented in Table LIV shows an analysis of comparison between teacher and teacher educator responses concerning future needed competencies by category. An analysis of the data reveals that teachers perceived the future needed competencies in all categories to be in the 'above average'

TABLE LVI

SUMMARY OF FINDINGS CONCERNING TEACHERS' AND TEACHER EDUCATORS' PERCEIVED LEVELS OF FUTURE NEEDED COMPETENCIES BY CATEGORY

Competency Categories	Mean of Means of Future Competency Levels	
	Teachers*	Teacher Educators
Departmental Management	4.39	4.26
Teacher Professionalism	4.39	4.43
School-Community Relations	4.26	4.17
Guidance	4.27	4.31
National FFA Organization	4.24	4.19
Teaching Methods and Techniques	4.19	4.53
Instructional Planning	4.11	4.44
Instructional Evaluation	4.10	4.54
Agricultural and Technological Development	4.07	4.22
Supervised Agricultural Experience (SAE)	4.05	4.39
Planning, Development and Evaluation of Local Programs	4.01	4.21
Adult Education Program	3.57	3.62
Total Group Mean of Means	4.14	4.26

* Mean of mean score by priority

level, recording an average group mean of mean value of 4.14. The perceptions of teacher educators fell in the same level but with higher average group mean value of 4.26.

Two competency categories were rated by teacher educators as being the most needed competencies in the mid-1990s. These were 'teaching methods and techniques' with 4.53 group mean value, and 'instructional evaluation' with a group mean of 4.54. With regard to teachers, they perceived 'teacher professionalism' to be the most needed competencies in the future, recording a category mean value of 4.39.

When T - values were calculated for each competency category, it revealed that significant differences existed in five of the twelve competency categories. These competency categories were: 'planning, development and evaluation of local program;' instructional planning;' 'teaching methods and techniques;' instructional evaluation;' and 'Supervised Agricultural Experience.'

Summary of the Top Thirty Percent of Education Competencies Needed in the Future

Data presented in Table LVII shows a summary of findings pertaining to teachers' and teacher educators' perceived levels of future needed competencies. These education competencies were perceived to be the highest levels of needed competencies in the top thirty percent of the total competency items studied. It was noted that both teachers and teacher educators agreed that comptencies in teaching methods and techniques, instructional evaluation, departmental management, and teacher professionalism, were most needed by agricultural teachers in the future.

TABLE LVII

SUMMARY OF THE TOP THIRTY PERCENT OF FUTURE NEEDED COMPETENCIES AS PERCEIVED BY TEACHERS AND TEACHER EDUCATORS

Competencies	Perceived Means of Competency Levels	
	Teachers	Teacher Educators
Organize and maintain filing system	4.54	3.98*
Provide healthy and safe learning environment	4.53	4.58
Maintain a friendly, cooperative and helpfu relationship with faculty and staff	4.52	4.58
Control student behavior by establishing good rapport	4.44	4.67
Organize and manage classroom and lab. facilities	4.43	4.52
Publicize the agricultural education program	4.42	4.41*
Motivate and involve students in teaching/learning process	4.41	4.84
Apply different methods and techniques of teaching	4.40	4.74
Publicize and attract prospective members of FFA	4.38	4.42*
Demonstrate evidence of professional demeanor, scholarship and behavior	4.37	4.54
Provide information and assist students in securing employment or further education	4.35	4.32*
Determine and budget instructional resource needs	4.30	4.22*
Develop and maintain liaison with school guidance personnel	4.30	4.41*

TABLE LVII (Continued)

Competencies	Perceived Means of Competency Levels	
	Teachers	Teacher Educators
Exhibit leadership by sharing knowledge and techniques with other faculty	4.29	4.19*
Supervise students in the organization and planning of FFA activities	4.29	4.51
Organize and work with Advisory Committee	4.25*	4.84
Introduce a lesson	4.20*	4.59
Evaluate instructional effectiveness	4.15*	4.58
Summarize a lesson	4.14*	4.55
Assess student performance of manipulative skills and abilities	4.11*	4.53
Establish criteria for student performance	4.04*	4.51
Determine needs and interests of students	4.24*	4.50

* Competency not in the top thirty percent

Conclusions

The following conclusions were reached after a review of literature and a thorough analysis of the data collected:

1. The agricultural teacher is one of the contributing factors in bringing about change in the agriculture industry, and particularly in agricultural education.

2. Professional education competencies of teachers must change in order to meet future teacher needs.
3. Since a majority of agricultural teachers and teacher educators are most likely to continue working in their present profession for several years, there is a need for in-service training in professional education competencies.
4. Teachers regard education competencies (both present and future needed competencies) in Adult Education Program as less important than any other category of competencies.
5. Both teachers and teacher educators are concerned with the growing needs for further competencies in teacher professionalism and departmental management.
6. Agricultural teachers are lagging in the utilization of computer-assisted instruction.
7. Teachers with less teaching experience do not need to acquire additional professional competencies to meet the needs of the mid-1990s as do more experienced teachers - exceptions being in the area of National FFA Organization and Supervised Agricultural Experience.
8. Teacher educators perceive teachers as having greater future competency needs than teachers perceive themselves.
9. Agricultural teachers must be people-oriented individuals with a high competency level of

teaching technology.

Recommendations

The following recommendations are made based upon the findings of the study:

1. Teacher education programs should continue to place major emphasis on preparing agricultural teachers to be competent in departmental management and instructional delivery in agricultural and technological development.
2. Teachers and teacher educators should place more emphasis upon teacher professionalism. A competent teacher who maintains a high standard of professionalism, would assure continued success in the overall agricultural education program.
3. It is recommended that State Departments of Vocational and Technical Education place more emphasis on the use of computer technology in agricultural education programs. Additionally, it is recommended that intensive in-service training in computer-assisted instruction be conducted at the state-wide level.
4. It is recommended that the in-service component of teacher education be increased by providing special competency training in human and public relations . Competency in human and public relations is regarded as an important asset to agricultural education graduates when they assume jobs in

schools, businesses and industry.

5. It is recommended that the State Departments of Vocational-Technical Education include teacher education competencies as part of the state-wide evaluation plan.
6. Future study is needed in the agricultural the Adult Education Program component, in order to determine whether there are needs to emphasize educational competencies in adult education. Alternatively, it is recommended that a seminar be conducted to determine the viability of this program component, and its contribution to agricultural education in the future.

SELECTED BIBLIOGRAPHY

Adams, D. A., Pratzner, F. C., Anderson B. H., and Zimmerer, M. E. (1987). Vocational Teacher Education in an Era of Change. Vocational Education Journal, 62(4), 24.

Ahmann, J.S., and Glock, M.D. (1975). Evaluating Pupil Growth (5th ed.). Boston: Allyn and Bacon.

Berkey, A. (1986). Staying Current: Professional Affairs and Preparing Professional Teachers of Agriculture. The Agricultural Education Magazine, 59(5), 17-19.

Burton, L. D. (1988). Tomorrow's Teacher of Vocational Agriculture. The Agricultural Education Magazine, 60(7), 5.

Carpenter, D. and Bishop D. (1990). A Western Reaction to the National Research Council Report. The Agricultural Education Magazine, 62(9), 20.

Cheek, J. G. and Arrington, L. (1990). Reshaping SAE To Provide Experiential Learning in the 1990's. The Agricultural Education Magazine, 62(11), p. 12-13, 22.

Cox, D. E., McCormick, F. G., and Miller, G. M. (1989). Agricultural Education Model. The Agricultural Education Magazine, 61(11), 9-12.

DeVaughan, Z. F.,Jr. (1974). Competencies Needed by Vocational and Technical Education Teachers as Rated by Selected Groups. Unpublished Doctoral dissertation, Oklahoma State University.

Drake, W. E. (1990). Teacher Education: At the Heart of the Mission Reaffirm - Reform or Both? The Agricultural Education Magazine, 62(7), 10-11, 18.

Evans, D. E. (1988). Agricultural Education at Risk. The Agricultural Education Magazine, 61(3), 21-22.

Fraenkel, J. R., and Wallen, N. E. (1990). How to Design and Evaluate Research in Education. New York: McGraw-Hill Publishing Company.

Frick, M. and Rollins, T. J. (1988). Incorporating Entrepreneurship Into Agricultural Education. The Agricultural Education Magazine, 61(1), 8-10.

Gartin, S. A. (1990). Effective Communication in Agriculture. The Agricultural Education Magazine, 63(3),4.

Gay, L. R. (1981). Educational Research: Competencies for Analysis and Application. Columbus, Ohio: Charles E. Merrill Publishing Company.

Gott, R. E., and Claycomb, D. M. (1981). Perceptions of the Value of Adult/Young Farmer Educational Competencies Needed by Vocational Agricultural Teachers. Paper presented at the American Vocational Association Annual Meeting, Atlanta, Georgia.

Herring, D. R. (1976). Identification and Validation of Competencies for Teacher Education in Agriculture. The Department of Agricultural Education, Texas A & M University, College Station, Texas.

Herring, D. R., and Norris, R. J. (1987). Shaping the Future of Vocational Agriculture. The Agricultural Education Magazine, 60(4), 19-21.

Hopkins, C. D. (1980). Understanding Educational Research. Columbus, Ohio: Charles E. Merrill Company.

Hunter, S. (1987). Vocational Agricultural Teachers Perceptions of Agricultural Mechanics and Agricultural Management Competencies of Students in the Vocational Agricultural Science Program in Texas. Unpublished doctoral dissertation , Oklahoma State University.

Iverson, M., and Robinson, Jr. B. (1990). Changing the Mission of Agricultural Education Through Curriculum Modification. The Agricultural Education Magazine, 62(8), 20-23.

Johnston, D. L. (1989). The Need to Retool Vocational Education. The Education Digest, LV(7), 38.

Johnson, D. M., and Schumacher, L. G. (1988). Agricultural Mechanics Laboratory Management Competencies. Proceedings of the Fifteenth Annual National Agricultural Education Research Meeting, St. Louis, Missouri.

Kerlinger, F. N. (1973). Foundations of Behavioral Research. 2nd Ed., New York: Holt, Rinehart, and Winston, Inc.

Knebel, E. H., and Richardson, W. (1982). Terminology of Importance to Professionals in Agricultural Education. Athens, Georgia: American Association for Vocational Instructional Materials.

Krejcie, R. V., and Morgan, D. W. (1970). Determining Sample Size for Research Activities. Educational and Psychological Measurement, 30(3), 607-610.

Lacina, L. J. (1984). The Determination of Computer Competencies Needed by Classroom Teachers. Texas A & M University, College Station: Educational Curriculum and Instruction. Teacher Education and Practice

Lamberth, E. E. (1982). Professional Competencies Needed and Presently Held by Beginning Teachers of Vocational Agriculture in Tennessee. Technical Report No. 3, Tennessee Technical University, Cooksville.

Law, D. A., and Pepple, J. D. (1990). A State Plan for Agricultural Education. The Agricultural Education Magazine, 62(8), 10-13.

Luft, V. D. (1990). Junior High Agriculture: A Means of Expanding Our Instruction. The Agricultural Education Magazine, 63(1), 18.

Mokma, A. (1985). Technical Education in Agriculture: The Future Is Now. The Agricultural Education Magazine, 58(6), 12-14.

Moore, G. E. and Borne, C. (1986). Dinosaurs and Vocational Agriculture: A Historical Analysis of the Curriculum in Vocational Agriculture. Seeking Solutions for Tomorrow's Challenges (Kahler, A.A., Ed.) Proceedings of the Thirteenth Annual National Agricultural Education Research Meeting, Dallas, Texas.

Moss, J. W. (1988). Moving Day for Teacher Education. The Agricultural Education Magazine, 61(1), 13-14.

National Association of Supervisors of Agricultural Education. (1987). Adjustment Needed in Vocational Agricultural Programs to Meet the Employment Needs of the Food and Fiber System in the Next Decade. A Position Paper.

National Research Council. (1988). Understanding Agriculture: New Directions for Education. Washington, D.C: National Academy Press.

Okatahi, S. S., and Welton, S. S. (1985). Professional Competencies Needed by Teachers in Agricultural Colleges of Northern States in Nigeria. The Journal of American Association of Teacher Educators in Agriculture, 26(2), 24-30.

Pool, D. L. (1988). The Agriculture Teacher for the 1990s. The Agricultural Education Magazine, 60(7), 9.

Rawls, B. F. Facing a Decade of Change. (1980). The Agricultural Education Magazine, 52(7), 5-6.

Rawls, W. J. and Fatunsin, L. O. (1985). Importance and Utilization of Professional Education Competency Areas Needed by Vocational Educators. Journal of Vocational Education Research, 10(1), 59.

Roth, G. L. and Tesolowski, D. G. (1984). Microcomputer Competencies for Vocational Teachers. The Computing Teacher, 12(3), 64-67.

Schmidt, B. J., Lynch, R. L., and Franz, N. R. (1988). Journal of Vocational Education Research, 13(2), 3-18.

Selman, J. W. (1990). Why Must I Teach Academic Content? Vocational Education Journal, 65(5), 41.

Stewart, B. R. (1983). Quality Classroom Instruction - A Must for Vocational Agriculture. The Agricultural Education Magazine, 55(7), 4.

Tomorrow's Teachers: A Report of the Holmes Group. (1986). East Lansing, Machigan: The Holmes Group.

Van Dalen, D. B. (1966). Understanding Educational Research. New York: McGraw-Hill Book Company.

Warmbrod, R. (1988). Barriers to Change. The Agricultural Education Magazine, 60(4), 4.

Weiser, R. G. (1989). Perceptions of the Importance of Professional Teaching Competencies and Selected Rural Environment Variables to Effectiveness as a Teacher of Vocational Agriculture in Nevada. Proceeding of the Eighth Annual Western Regional Agricultural Education Research Meeting, Sparks, Nevada.

Wilson, W. M. (1983). Teacher Perceptions of Competencies Needed by Occupational Home Economics Instructional Personnel as Basis for Pre- and In-Service Education in Oklahoma. Unpublished doctoral dissertation, Oklahoma State University.

Zubrick, P. R. (1989). Perceptions Are Reality. The Agricultural Education Magazine, 61(9), 4.

APPENDIXES

APPENDIX A

CORRESPONDENCE

OSU

Oklahoma State University

DEPARTMENT OF AGRICULTURAL EDUCATION
DIVISION OF AGRICULTURE

STILLWATER, OKLAHOMA 74078-0484
448 AGRICULTURAL HALL
405-744-5129

January 16, 1991

Dear Agricultural Teacher Educator:

We are conducting an in-depth regional study pertaining to professional education competencies needed by agricultural teachers in the mid-1990s. The results of this study will be of great help to all of us in view of the many changes and future demands that will be placed on agricultural education.

As a professional agricultural teacher educator, you have been selected to participate in this study. Please take a few minutes of your time to respond and complete the enclosed survey instrument and return it by January 30, 1991 using the pre-addressed stamped envelop provided.

Your taking time to complete and return the survey is greatly appreciated. Thank you.

Sincerely,

MAHMOOD JAAFAR
Graduate Student

DR. EDDY FINLEY
Associate Professor

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Celebrating the Past Preparing for the Future

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Mahmood

MAHMOOD JAAFAR
Graduate Student

Eddy Finley

DR. EDDY FINLEY
Associate Professor

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DIVISION OF AGRICULTURE

STILLWATER, OKLAHOMA 74078-0484
448 AGRICULTURAL HALL
405-744-5129

February 7, 1991

Dear Agricultural Teacher:

You and other selected colleagues in the agricultural education teaching profession were recently mailed a survey instrument concerning needed agricultural teacher competencies in the near future.

Perhaps it has become lost or misplaced? Nevertheless, please find enclosed another survey instrument which we very much would like for you to review, complete, and return to us. Your input is essential to the success of this research effort.

Please fill out the survey instrument and return it in the pre-addressed, stamped envelope by February 18, 1991. An additional postage stamp, equivalent to the 'F' stamp rate, is enclosed for use in the returned mail. If you have already mailed us your response, please disregard this letter.

Your assistance is deeply appreciated.

Respectfully yours,

MAHMOOD JAAFAR
Graduate Student

DR. EDDY FINLEY
Associated Professor

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MAHMOOD JAAFAR
Graduate Student

DR. EDDY FINLEY
Associated Professor

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APPENDIX B

QUESTIONNAIRE MAILED TO AGRICULTURAL TEACHERS IN SOUTHERN REGION OF THE UNITED STATES

PROFESSIONAL EDUCATION COMPETENCIES NEEDED BY AGRICULTURAL TEACHERS IN THE MID-1990S

I. Demographics

Instructions: Please check or respond to the following:

1. My age:.....years
2. My educational level:

Degree	Concentration/Major
Bachelor's	.....
Master's	.....
Doctoral	.....
Other	.....

3. My teaching experience:.....years

II. Professional Education Competencies

Instructions: Please respond to each of the following items by circling the appropriate number. The numbers represent the levels of competencies which you perceive will be needed by the public high school agricultural teachers in the future.

Levels of Competency:

1 = Minimal
2 = Below Average
3 = Average
4 = Above Average
5 = Highly Competent

Present Competency Level	COMPETENCIES	Future Competency Level
	A. Planning, Development, and, Evaluation of Local Programs	
1 2 3 4 5	1. Plan and conduct a community survey	1 2 3 4 5
1 2 3 4 5	2. Organize and work with an Advisory Committee	1 2 3 4 5
1 2 3 4 5	3. Develop short and long range goals and objectives	1 2 3 4 5
1 2 3 4 5	4. Develop an annual teaching plan	1 2 3 4 5
1 2 3 4 5	5. Evaluate local programs	1 2 3 4 5

Please continue on next page

Present Competency Level					COMPETENCIES	Future Competency Level				
					B. Instructional Planning					
1	2	3	4	5	6. Determine needs and interests of students	1	2	3	4	5
1	2	3	4	5	7. Develop student performance objectives	1	2	3	4	5
1	2	3	4	5	8. Plan and write daily teaching plan	1	2	3	4	5
					C. Teaching Methods and Techniques					
1	2	3	4	5	9. Introduce a lesson	1	2	3	4	5
1	2	3	4	5	10. Apply different methods and techniques of teaching	1	2	3	4	5
1	2	3	4	5	11. Motivate students in teaching/learning process	1	2	3	4	5
1	2	3	4	5	12. Use appropriate audio-visual aids	1	2	3	4	5
1	2	3	4	5	13. Control student behavior by establishing good rapport	1	2	3	4	5
1	2	3	4	5	14. Use computer-assisted instruction	1	2	3	4	5
1	2	3	4	5	15. Apply team teaching techniques	1	2	3	4	5
1	2	3	4	5	16. Summarize a lesson	1	2	3	4	5
					D. Instructional Evaluation					
1	2	3	4	5	17. Establish criteria for student performance	1	2	3	4	5
1	2	3	4	5	18. Assess student performance of manipulative skills and abilities	1	2	3	4	5
1	2	3	4	5	19. Evaluate instructional activities	1	2	3	4	5
					E. Departmental Management					
1	2	3	4	5	20. Develop and implement a statement of departmental policy	1	2	3	4	5
1	2	3	4	5	21. Determine and budget instructional resource needs	1	2	3	4	5
1	2	3	4	5	22. Organize and maintain filing system	1	2	3	4	5
					23. Provide healthy and safe learning environment	1	2	3	4	5
1	2	3	4	5	24. Organize and manage classroom and lab. facilities	1	2	3	4	5

Please continue on next page

Present Competency Level					COMPETENCIES	Future Competency Level				
					F. Guidance					
1	2	3	4	5	25. Develop and maintain liaison with school guidance personnel	1	2	3	4	5
1	2	3	4	5	26. Assess students' performance and make advisory recommendations	1	2	3	4	5
1	2	3	4	5	27. Provide information and assist students in securing employment or further education	1	2	3	4	5
					G. School-Community Relations					
1	2	3	4	5	28. Develop a plan for school-community relations	1	2	3	4	5
1	2	3	4	5	29. Publicize the agricultural education program through leaflets, newspapers, electronic media, and public events	1	2	3	4	5
1	2	3	4	5	30. Maintain liaison with state and local education, community and employment agencies	1	2	3	4	5
					H. National FFA Organization					
1	2	3	4	5	31. Publicize and attract prospective members of FFA	1	2	3	4	5
1	2	3	4	5	32. Supervise students in the organization and planning of FFA activities	1	2	3	4	5
1	2	3	4	5	33. Assist students in financial planning and management	1	2	3	4	5
1	2	3	4	5	34. Train team in shows and leadership contests	1	2	3	4	5
1	2	3	4	5	35. Evaluate the local FFA chapter	1	2	3	4	5
					I. Adult Education Program					
1	2	3	4	5	36. Plan an annual program of instruction for adults	1	2	3	4	5
1	2	3	4	5	37. Utilize specialists and resource persons in the adult education program	1	2	3	4	5
1	2	3	4	5	38. Organize demonstration, field-days and tours	1	2	3	4	5

Please continue on next page

Present Competency Level	COMPETENCIES	Future Competency Level
	J. Supervised Agricultural Program (SAE)	
1 2 3 4 5	39. Plan and develop SAE	1 2 3 4 5
1 2 3 4 5	40. Assist and supervise students in selecting and conducting SAE program	1 2 3 4 5
1 2 3 4 5	41. Assist students in developing comprehensive management skills	1 2 3 4 5
1 2 3 4 5	42. Prepare students to become involved in advanced technology development	1 2 3 4 5
	K. Teacher Professionalism	
1 2 3 4 5	43. Maintain a friendly, cooperative and helpful relationship with faculty and staff	1 2 3 4 5
1 2 3 4 5	44. Exhibit Leadership by sharing knowledge and techniques with faculty	1 2 3 4 5
1 2 3 4 5	45. Demonstrate evidence of professional demeanor, scholarship, and behavior	1 2 3 4 5
	L. Agricultural and Technological Development	
	46. Deliver instruction by emphasizing:	
1 2 3 4 5	a. International economy or global agriculture	1 2 3 4 5
1 2 3 4 5	b. Marketing, finance and trading skills	1 2 3 4 5
1 2 3 4 5	c. Biotechnology and genetic engineering (embryo transfers, gene insertion)	1 2 3 4 5
1 2 3 4 5	d. International competition in food and fiber market	1 2 3 4 5
1 2 3 4 5	e. Managerial skills	1 2 3 4 5
1 2 3 4 5	f. Information technology (telecommunication, fax)	1 2 3 4 5

Please name the one professional education competency that you think is the most important for an agricultural teacher to possess:

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T H A N K Y O U

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APPENDIX C

QUESTIONNAIRE MAILED TO TEACHER EDUCATORS IN SOUTHERN REGION OF THE UNITED STATES

PROFESSIONAL EDUCATION COMPETENCIES NEEDED BY AGRICULTURAL TEACHERS IN THE MID-1990S

I. Demographics

Instructions: Please check or respond to the following:

1. My age:.....years
2. My educational level:

Degree	Concentration/Major
Master's	.....
Doctoral	.....
Other	.....

3. My teaching experience:.....years

II. Professional Education Competencies

Instructions: Please respond to each of the following items by circling the appropriate number. The numbers represent the levels of competencies which you perceive will be needed by the public high school agricultural teachers in the future.

Levels of Competency:

1 = Minimal
2 = Below Average
3 = Average
4 = Above Average
5 = Highly Competent

COMPETENCIES	FUTURE COMPETENCY LEVEL
A. Planning, Development, and, Evaluation of Local Programs	
1. Plan and conduct a community survey	..... 1 2 3 4 5
2. Organize and work with an Advisory Committee	..... 1 2 3 4 5
3. Develop short and long range goals and objectives	..... 1 2 3 4 5
4. Develop an annual teaching plan	..... 1 2 3 4 5
5. Evaluate local programs	..... 1 2 3 4 5

Please continue on next page

COMPETENCIES	FUTURE COMPETENCY LEVEL
B. Instructional Planning	
6. Determine needs and interests of students	..... 1 2 3 4 5
7. Develop student performance objectives	..... 1 2 3 4 5
8. Plan and write daily teaching plan	..... 1 2 3 4 5
C. Teaching Methods and Techniques	
9. Introduce a lesson	..... 1 2 3 4 5
10. Apply different methods and techniques of teaching	..... 1 2 3 4 5
11. Motivate and involve students in teaching/learning process	..... 1 2 3 4 5
12. Use appropriate audio-visual aids	..... 1 2 3 4 5
13. Control student behavior by establishing good rapport	..... 1 2 3 4 5
14. Use computer-assisted instruction	..... 1 2 3 4 5
15. Apply team teaching techniques	..... 1 2 3 4 5
16. Summarize a lesson	..... 1 2 3 4 5
D. Instructional Evaluation	
17. Establish criteria for student performance	..... 1 2 3 4 5
18. Assess student performance of manipulative skills and abilities	..... 1 2 3 4 5
19. Evaluate instructional activities	..... 1 2 3 4 5
E. Departmental Management	
20. Develop and implement a statement of departmental policy	..... 1 2 3 4 5
21. Determine and budget instructional resource needs	..... 1 2 3 4 5
22. Organize and maintain filing system	..... 1 2 3 4 5
23. Provide healthy and safe learning environment	..... 1 2 3 4 5
24. Organize and manage classroom and lab. facilities	..... 1 2 3 4 5

Please continue on next page

COMPETENCIES	FUTURE COMPETENCY LEVELS
F. Guidance	
25. Develop and maintain liaison with school guidance personnel	..... 1 2 3 4 5
26. Assess students' performance and make advisory recommendations	..... 1 2 3 4 5
27. Provide information and assist students in securing employment or further education	..... 1 2 3 4 5
G. School-Community Relations	
28. Develop a plan for school-community relations	..... 1 2 3 4 5
29. Publicize the agricultural education program through leaflets, newspapers, electronic media, and public events	..... 1 2 3 4 5
30. Maintain liaison with state and local education, community and employment agencies	..... 1 2 3 4 5
H. National FFA Organization	
31. Publicize and attract prospective members of FFA	..... 1 2 3 4 5
32. Supervise students in the organization and planning of FFA activities	..... 1 2 3 4 5
33. Assist students in financial planning and management	..... 1 2 3 4 5
34. Train team in participation in shows and leadership contests	..... 1 2 3 4 5
35. Evaluate the local FFA chapter	..... 1 2 3 4 5
I. Adult Education Program	
36. Plan an annual program of instruction for adults	..... 1 2 3 4 5
37. Utilize specialists and resource persons in the adult education program	..... 1 2 3 4 5
38. Organize demonstration, field-days and tours	..... 1 2 3 4 5

Please continue on next page

COMPETENCIES	FUTURE COMPETENCY LEVEL
J. Supervised Agricultural Program (SAE)	
39. Plan and develop SAE	..... 1 2 3 4 5
40. Assist and supervise students in selecting and conducting SAE program	..... 1 2 3 4 5
41. Assist students in developing comprehensive management skills	..... 1 2 3 4 5
42. Prepare students to become involved in advanced technology development	..... 1 2 3 4 5
K. Teacher Professionalism	
43. Maintain a friendly, cooperative and helpful relationship with faculty and staff	..... 1 2 3 4 5
44. Exhibit Leadership by sharing knowledge and techniques with other faculty	..... 1 2 3 4 5
45. Demonstrate evidence of professional demeanor, scholarship, and behavior	..... 1 2 3 4 5
L. Agricultural and Technological Development	
46. Deliver instruction by emphasizing:	
a. International economy or global agriculture	..... 1 2 3 4 5
b. Marketing, finance and trading skills	..... 1 2 3 4 5
c. Biotechnology and genetic engineering (embryo transfers, gene insertion)	..... 1 2 3 4 5
d. International competition in food and fiber market	..... 1 2 3 4 5
e. Managerial skills	..... 1 2 3 4 5
f. Information technology (telecommunication, fax)	..... 1 2 3 4 5

Please name the one professional education competency that you think is the most important for an agricultural teacher to possess:

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T H A N K Y O U
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VITA

Mahmood B. Jaafar

Candidate for the Degree of

Doctor of Education

Thesis: PROFESSIONAL EDUCATION COMPETENCIES NEEDED BY AGRICULTURAL TEACHERS IN THE MID-1990S

Major Field: Occupational and Adult Education

Biographical:

Personal Data: Born in Kelantan, Malaysia, January 31, 1944, the son of Jaafar and Aminah.

Education: Graduated from Technical Institute, Penang in March 1965; received Diploma in Agriculture from College of Agriculture, Malaya in June, 1968; received Bachelor of Science degree in Vocational Agricultural Education from Louisiana State University in December, 1980; received Master of Science degree in Vocational Agricultural Education from Louisiana State University in May, 1982; completed requirements for the Doctor of Education at Oklahoma State University in July, 1991.

Professional Experience: Assistant Agricultural Officer, Kedah, 1968-1974; Assistant Agricultural Officer/ Farm Manager, Universiti Pertanian Malaysia, 1975-78; Graduate Assistant, Louisiana State University, 1981-82; Lecturer, Universiti Pertanian Malaysia, 1982-83; Lecturer/ Deputy Farm Director, Universiti Pertanian Malaysia, 1984-88; On Universiti Pertanian Malaysia study-leave from 1988 to present.

Professional Organizations: American Vocational Association; American Supervision and Curriculum Association.