TEACHERS' PERCEPTIONS OF SAE PROGRAMS AND BENEFITS FOR STUDENTS WITH SPECIAL NEEDS IN OKLAHOMA

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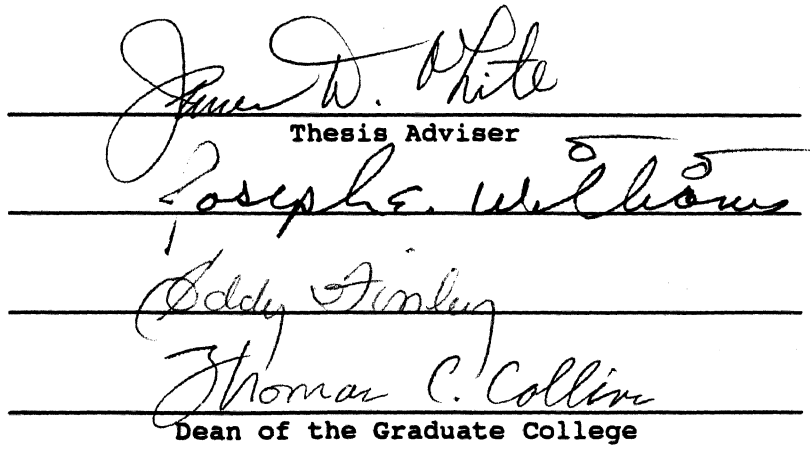

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CHAPTER I

INTRODUCTION

Supervised Agricultural Experience (SAE) programs have long been recognized as an integral and invaluable part of the total agricultural education program. SAE programs that are well planned and supervised provide students with excellent opportunities to expand on the concepts taught in the agricultural education classroom.

This practical, hands-on approach to learning has been proven to benefit students in many ways (Pals, 1989; Rawls, 1982). Not only do the students gain technical knowledge, but they also develop important skills such as responsibility, problem-solving, and money management. One goal of agricultural educators should be to extend the opportunities offered by SAE to as many students as possible. SAE is an educational tool that is often overlooked and underutilized. This is especially true among students with special needs. With the emergence of Public Law 94-142 and other legislation, the current trend is to mainstream students with special needs into regular classrooms whenever possible. SAE may provide an ideal situation for many of these students. Students with special needs involved in SAE have the opportunity to pursue a vast number of activities previously unavailable to them. These activities offer career, social, and academic benefits.

Statement of the Problem

With the implementation of Public Law 94-142 and other related educational legislation, there is a strong movement towards mainstreaming students with special needs into the regular classroom. Mainstreaming is intended to enhance the social and academic environment of students with special needs. One vehicle which may be very effective in providing such an environment is Supervised Agricultural Experience (SAE). SAE may be an underutilized means of mainstreaming students with special needs and helping them develop valuable career, social, and academic skills. The problem addressed by this study is the need to identify specific benefits of supervised agricultural experience programs which accrue to students with special needs and to determine teachers' perceptions of SAE programs for students with special needs.

Purpose of the Study

The major purpose of this study was to identify specific benefits which accrue to students with special needs who are conducting SAE programs and to determine teachers' perceptions of SAE programs for students with special needs.

Objectives of the Study

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

1. To determine selected demographics of students with special needs and the FFA chapters of which they were members.

2. To determine the quality of SAE programs being conducted by students with special needs as perceived by Oklahoma agricultural education teachers.

3. To determine agricultural education teachers' perceptions of SAE programs for special needs students.

4. To determine the educational objectives of students with special needs as perceived by educators.

5. To determine selected benefits of SAE programs which may accrue to students with special needs.

Scope of the Study

This study involved all 362 agricultural education programs in Oklahoma high schools. In multiple teacher programs, the study targeted the "senior" teacher. No effort was made to predetermine the inclusion of students with special needs in these programs.

Assumptions of the Study

The researchers made the following assumptions, which are necessary to validate the results of the study. These assumptions are based on the expertise and previous experience of members of the Agricultural Education department at Oklahoma State University.

1. The questionnaire ascertained the data it was designed to acquire.

2. It was assumed that the responses to the questionnaire reflected actual attitudes of the respondents.

Definition of Terms

Some of the major terminology used in this study may be unfamiliar to some readers. Other terms may have different meanings to different readers. The following section defines how specific terms were used in this study:

Supervised Agricultural Experience (SAE) -- supervised planned practical, hands-on activities conducted outside of regularly scheduled class time whereby students further develop and apply knowledge, skills and attitudes taught in agricultural education class. SAE programs are closely supervised by agricultural education teachers. They can involve placement, ownership, or exploration in any area of the broad field of agriculture. SAE was previously known as SOE and SOEP. These three terms are used interchangeably in this study.

Public Law 94-142 -- Individual With Disabilities Education Act. Passed in 1975, this law contains a mandatory provision stating:

> in order to receive funds under the Act, every school system in the nation must make provision for a free and appropriate public education for every child between the ages of three and twenty-one regardless of how, or how seriously, he may be handicapped.

This was the major piece of legislation that lead to the wide spread mainstreaming of students with special needs into regular classrooms, including agricultural education.

Students With Special Needs -- secondary students who have learning and/or behavioral problems or physical disabilities to such an extent that special education is necessary to help them fulfill their educational potential, and they have an IEP detailing their educational program. In this study, the term "students with special needs" and "special needs students" were used interchangeably.

FFA -- a national organization of, by, and for students enrolled in agricultural education programs. It is an educational, non-profit organization designed to develop agriculture leadership, cooperation, and citizenship.

IEP (Individual Education Program) -- individual education plan mandated for all students with special needs. Includes educational goals and specific activities and services to aid in meeting those goals. The program is determined by a team, which includes parents, educators, and administrators. Also includes placement strategies such as mainstreaming. A new IEP is written each year and reviewed for progress at least every six months.

Mainstreaming -- inclusion of students with special needs into the regular classroom with extra support from professional specialists. Amount of mainstreaming and appropriate services are determined by the IEP team, which includes parents, teachers, administrators, and other professionals.

Least Restrictive Environment -- refers to public school placement of handicapped students. This study uses the definition put forth by Hallahan and Kaufman (1991):

> The handicapped child shall be segregated as little as possible from home, family, community, and the regular class setting while appropriate education is provided. In many, but not all, instances this will mean placement in the regular classroom (p. 3).

CHAPTER II

REVIEW OF LITERATURE

A review of related literature was conducted in order to become more familiar with important aspects of Supervised Agricultural Experience (SAE) programs, students with special needs, and how SAE programs might benefit students with special needs. This search was principally conducted using ERIC (Educational Resources Information Center), Dissertation Abstracts International, and other CD-ROM data bases. An extensive hand search was also conducted. Efforts were made to find literature from a variety of sources including journal articles, books, graduate studies and conference papers.

To help facilitate clarity, organization, and understanding, this review of literature was divided into five sections and a summary. The five sections were: 1) Students with Special Needs in Agricultural Education, 2) Educational Objectives for Students with special needs, 3) Mainstreaming, 4) What is an SAE Program?, and 5) Benefits of SAE Programs.

Students with Special Needs in Agricultural Education

The inclusion of students with special needs in agricultural education in not a new or novel idea. Many agricultural education programs have served this population for years with great overall success. Baggett, Connelly, and Hoover (1983) found that

agricultural education programs in Pennsylvania served six percent of that state's over 14,000 secondary students with special needs. Hoachlander (1991) found that agricultural education serves a large portion of students with special needs. He found that, nationwide, 17 percent of all handicapped high school graduates took at least one course in agriculture, while only 7.7 percent of all non-handicapped students took at least one course in agriculture. Frick and Osborne (1993) reported that handicapped students took 81.7 percent of their vocational education in regular classrooms, while they took only 59.5 percent of their academic course work in regular classrooms. None of the above literature made mention of special needs students' involvement in SAE programs.

In fact, the presence of students with special needs is so widespread that Newcomb, McCracken, and Warmbrod (1986) devoted an entire chapter (chapter 12) of their widely read book "Methods of Teaching Agriculture". This book has been used by teachers and teacher educators for many years and is often considered the "bible" of agricultural education. The inclusion of this chapter speaks to the prevalence of students with special needs in agricultural education and also to the need for agricultural educators to be trained in this area. As an introduction to this chapter, Newcomb, et al. (1986) recall the story of Ronald. Ronald was a handicapped student who enrolled in vocational agriculture because he "liked to work with plants". They offered the following account of Ronald:

> Ronald was handicapped. He had a learning disorder resulting from early brain damage. He had been diagnosed as educable mentally retarded and was in special education prior to enrolling in the area vocational school. Because of his handicap, Ronald had some difficulty making decisions. He was unable to complete narrative problems in mathematics but could calculate numerical problems. He could handle money and make change without error. Ronald's participation in a vocational agriculture program helped him to enter a useful and rewarding career (p. 269).

They further describe Ronald's entry into a career as follows:

> At graduation he received a vocational certificate certifying his competence in horticulture. He was employed driving a horticulture delivery truck for a large wholesale firm in the nearby metropolitan area. He achieved an excellent work record because of his ability to work with people, to care for plant materials, to follow instructions, and to read road maps, and because of his dedication to his work (p. 270).

Ronald's story is by no means exceptional. It is just one of many success stories of students with special needs who participated in agricultural education. According to Newcomb, et al. (1986), "the strongest rationale that can be given for advocating the active participation of handicapped people in vocational agriculture is their performance in the world of work", and furthermore "every individual should be afforded the chance to lead a full and rewarding life with the personal dignity that comes from possessing useful skills and having a chance to apply them in productive work". As will be discussed later in this chapter, this is one of the primary goals of special education.

Newcomb, et al. (1986) offer many suggestions for helping students with special needs be successful in the agricultural classroom. Many of these are the same things which can help all

students be successful. The most important thing they mentioned is teacher attitude towards these students. It is true that planning effective instruction for handicapped students places a burden on a teacher's limited time resources. However, "often the special materials used for presentations to handicapped or disadvantaged students are equally effective with other students." Other important factors mentioned by Newcomb, et al. (1986) are:

1. Use of many examples to help clarify concepts.

2. Development of a positive atmosphere in order to nurture self-concept.

3. Recognition and rewards, including those offered through FFA and SAE.

4. Awareness of individual students' motivating factors.

5. Sensory rich classroom setting.

6. Peer instruction.

Newcomb, et al. (1986) report that approximately one out of every ten students enrolled in agricultural education could be described as having special needs. This is a very large population. With the presence of so many students with special needs in regular classrooms, many teachers have asked for help in order to better serve this population. Most frequently the help they requested has been in the forms of additional in-service and pre-service training and instructional materials adapted to students with special needs. Such materials have been developed and are in use in at least three states. In Texas, a modified Vocational Agriculture I curriculum (Garcia, Todd, Cooke, and Moss, 1985) was written for handicapped

students (Appendix F). This guide was based on the state of Texas' regular Vocational Agriculture I curriculum, and includes all of the same units. The primary difference is that objectives for each unit are re-written as expectations, then broken down as "preferred student expectation" and "minimum student expectations" as shown below:

Unit - Water Requirements of Crops

PREFERRED STUDENT EXPECTATIONS	MINIMUM STUDENT EXPECTATIONS
Learn the relationships between field capacity, permanent wilting point, and available water.	Learn what is meant by available water.
Learn the relationship of soil textures to amounts of water they can hold.	Learn that clay will hold more water than sand.

This design accommodates learners at many levels. The guide also offered suggested classroom activities, most of which can accommodate regular learners as well as students with special needs. Many units provided a glossary of terms needed to understand the unit. These were usually terms that are commonly understood by regular learners, but may not have been familiar to students with special needs. Examples of such terms are breed, purebred, and crossbred used in a unit on beef cattle.

In Missouri, the University of Missouri-Columbia (1991) put together a strategies module for use by secondary agriculture teachers serving students with special needs. The developers of this guide took into consideration the many different learning styles present in all classrooms. The authors described their approach as follows:

> All students need to be taught a variety of strategies which will help them learn more effectively. The challenge to teachers is to transform passive learners into learners who are more actively involved by teaching/ showing them effective strategies for gaining and responding to information (p. 3).

This approach is especially well suited to agricultural education because of the broad scope of subject matter, wide range of teaching activities, SAE, and diversity of students. Just like the Texas program mentioned earlier (Garcia et al., 1985), the Missouri project gave suggestions for modifying existing agricultural education curriculum to meet the needs of special students. The difference is that the Missouri project attempted to teach strategies so that teachers could modify their own methods and materials.

A third example of modified instructional materials was Pennsylvania State University's competency based approach developed by Bagget, et al. (1983). Their approach was a detailed outline of each unit with detailed step by step instructions on how to master the competencies involved (Appendix G). For example, their unit on washing a horse provided 24 steps starting with "go over to the horse carrying the halter" and ending with "put the halter and lead rope back where they belong" (pp. 70-71).

Combined, these three different approaches are a valuable resource for agriculture teachers looking for effective methods of teaching students with special needs. None of them is all encompassing, but a combination of the three could accommodate nearly all students.

There are also special materials available from many other states, including Wisconsin, Virginia, Colorado, Illinois, Michigan, and California. Thompson, Landeen, Marion, and Whaley (1981) published a booklet for the University of California at Davis titled "Resources in Vocational Agriculture for Teaching Handicapped and Disadvantaged Students in California". This book identifies resources for every aspect of teaching students with special needs enrolled in agricultural education. They offered reviews, sources, and descriptions of publications, services, and equipment. In addition to these offerings, they also presented information on resources regarding legislation, teaching methods, and program modifications. This booklet suggested excellent materials for teaching all students regardless of ability.

Agricultural education teachers' reactions and attitudes to students with special needs have been generally supportive. Sutphin and Newcomb (1981) surveyed teachers, teacher educators, and state supervisors across the country and found them in unanimous agreement that "in-school youth with social, physical, and economic handicaps should be served by agricultural education" (p. 56). Teachers were less certain, however, about the adequacy of their training to deal with students with special needs. Dill and Brown (1983) reported:

> One major barrier preventing the handicapped from participating in regular vocational programs is that vocational educators generally lack training in dealing with the handicapped. For this reason, and because of their apprehension, vocational educators generally exclude the handicapped from vocational programs. The lack of needed training could result in millions of handicapped individuals being unemployed and heavily dependent on society (p. 2).

Although this is an extreme view and it refers to the broad group of vocational educators, agriculture educators are also under-trained and apprehensive when it comes to students with special needs. The authors surveyed 262 agriculture teachers in Ohio during the 1981-1982 school year and found that: 1) only 33 percent of the teachers rated their knowledge concerning integration of students with special needs as "adequate" or "substantial"; 2) 95 percent of the teachers were "unsure" of their attitude concerning the integration of students with special needs; and 3) teaching practices implemented to aid in the integration of students with special needs were "minimal."

Mallilo, Baggett, and Curtis (1983) found similar results among Pennsylvania agriculture teachers. They also found that teachers were very unfamiliar with, and uncomfortable about, existing legislation involving students with disabilities. Both of these studies recommended stronger pre-service and in-service training for agriculture teachers serving students with special needs.

Mallilo, et al. (1983) also found that agriculture teachers rated themselves and other teachers as very supportive of students with special needs. They found regular students and the parents of regular students to be by far the least supportive.

There are countless success stories of students with special needs in agricultural education. Many of these were reported by Scanlon and Miller (1985) and Frick and Osborne (1993) as theme editors of two editions of The Agricultural Education Magazine. The theme of Scanlon and Miller's 1985 issue was "Vocational Agriculture

and the Handicapped Student". Their issue reported on achievements of students with special needs in horticulture, agricultural mechanics, livestock, crops, and community service projects. Contributing authors attributed the success of these students to a variety of factors including home visits, collaboration with special education teachers, equipment modifications, land labs, low student teacher ratios, and social interaction.

Frick commented about his 1993 issue:

> This issue directs our attention to a group of people who can use our technical, but more importantly, our emotional and spiritual support in overcoming barriers, resulting in greater self-confidence, a sense of empowerment, and increased self-esteem. The extra effort put forth in working with individuals with disabilities can also provide an enriching experience for a teacher. It is possible through our agriculture curriculum -the skills we teach and the caring we demonstrate that we can cultivate an independence not yet experienced by many individuals with disabilities (p. 4).

The current literature showed a tremendous amount of both support and opportunity for students with special needs in agricultural education but there was still progress to be made. Scanlon and Baggett (1985) found "that over 96 percent of the vocational agriculture programs in Pennsylvania have not developed or purchased curriculum materials or altered instructional methods to accommodate students with special needs" (p. 6). Although large scale modification is not needed, some effort needs be made to adjust agricultural education programs so that students with special needs can receive experiences comparable to regular students enrolled in agricultural education.

Educational Objectives for Students with Special Needs

In order to accurately evaluate the benefit of agricultural education or SAE that may accrue to students with special needs, the goals and objectives of special education needed to be determined. As in any area of education, there is not a strict interpretation of goals and objectives that is adhered to by all special educators. In general, however, educators and parents of students with special needs agree on broad goals. These broad goals have been well stated by two groups of educators. Hallahan and Kaufman (1991) state the overall goal as follows: "the single most important goal of special education is finding and capitalizing on exceptional children's abilities" (p. 8). Another broad goal was offered by Scanlon and Baggett (1985):

> The ultimate goal of educating students with special needs is to help them become self-sufficient. This translates into program graduates holding a job for which one has or can obtain the necessary skills and for which one is sufficiently rewarded; that is, job match and satisfaction. Placement of students with special needs in positions in the work world helps to accomplish this goal, be it for training or employment (p. 9).

In addition to these broad goals, special education was also focused on developing marketable skills and qualities in students. Specific skills have been identified that employers look for when hiring workers. Cassity and Boyer-Stephens (1987) identified the following "employability skills" for students with special needs:

1. Accept responsibility by participating in care of work area.
2. Apply basic measurement concepts.
3. Arrive on time.
4. Ask questions when not sure of procedure.
5. Communicate with peers.
6. Communicate with those in authority.
7. Follow multiple step oral directions.
8. Follow multiple step written directions.
9. Identify strategies for gaining job related information.
10. Organize work spaces and mate rials.
11. Show respect for property of others.
12. Use a calendar.
13. Use/communicate on the telephone.
14. Use basic safety concepts.
15. Work independently with minimal supervision (p. 43).

Many of these are the same skills which are looked for from all workers. Many are also commonly associated with SAE (Pals, 1989). For this reason, some of them were included as possible benefit statements in the questionnaire designed for this study (Appendix B).

There are a number of approaches to accomplishing the goals of special education and instilling the above skills and qualities in special learners. One of the most common is vocational education. According to Frick and Osborne (1993), "handicapped students earn 27 percent of their total credits in vocational education while non-handicapped students earned 18.3 percent of their total credits in vocational education" (p. 19). They further reported that "99.2 percent of handicapped students took vocational education" (p. 20). Obviously, vocational courses were very prevalent in serving students with special needs. These courses helped them become self-sufficient and make full use of their abilities. Educators must be careful, however, not to assume that vocational training is the best

path for every student. Many students with special needs have other goals, such as college. These students need to pursue an academic track as much as can be deemed appropriate. This is true of mildly retarded students and especially true of students with physical disabilities. Agricultural education can be a great opportunity for these students since it offers academic as well as vocational coursework.

Though the goals of special education are broad, every special needs student has a written set of very specific goals. This is called the IEP (individualized education program). Hallahan and Kauffman (1991) stated that:

> P.L. 94-142 requires an IEP to be drawn up by the educational team for each exceptional child; the IEP must include a statement of present educational performance, instructional goals, educational services to be provided, and criteria and procedures for determining that the instructional objectives are being met (p. 481).

Hallahan and Kauffman further reported that the IEP includes placement information such as mainstreaming, when appropriate. The IEP is developed by a team which includes, but is not limited to; parents, special education teacher(s), regular classroom teacher(s) involved with mainstreaming the student, administrator(s), and other appropriate professionals. A new IEP is written by the team every year and the students' progress is evaluated by the team at least every six months.

Mainstreaming

An important part of an IEP is placement, which often includes mainstreaming. Gearheart, Weishahn, and Gearheart (1988) define mainstreaming as: "maximum integration of handicapped students into the regular classroom, coupled with concrete assistance for non-special education teachers" (p. 394). When used properly, mainstreaming is a very effective educational tool for students with special needs. Gearheart, Weishahn, and Gearheart (1988) also concluded that it was important to note that mainstreaming does not mean all students with special needs, regardless of their disability, should be mainstreamed in every class. Matching regular classroom placement with a student's individual goals and abilities is one key to making mainstreaming work. Some students may not benefit from time in regular class, while a few others may warrant spending all their time in regular classes. The IEP will determine the best situation for each student. This dispels the common myth that the goal of mainstreaming is to place all students with special needs in regular classrooms regardless of their individual abilities and needs.

The second key to successful mainstreaming is effective collaboration between special education teachers and regular educators with special needs students in their classrooms.

The driving force behind mainstreaming is the portion of PL 94-142 that mandates students with special needs to be served in the "least restrictive environment". This term, least restrictive environment, has been interpreted many ways, but most educators

agree with the following definition offered by Hallahan and Kauffman (1991):

> What is usually meant is that the child should be segregated from normal classmates and separated from home, family, and community as little as possible. That is, his or her life should be as 'normal' as possible, and the intervention should be consistent with individual needs and not interfere with individual freedom any more than is absolutely necessary. The goal should be to find the most productive setting to provide the maximum assistance for the child (p. 12).

Hallahan and Kauffman further expound on the most prevalent reasons for mainstreaming:

> Since about 1980, those advocating mainstreaming have used two general arguments:
>
> 1. Some, who have written on the topic from the perspective of advocates, have emphasized ethical issues: mainstreaming is the right thing to do because, unlike special class and resource class programming, it does not require segregating handicapped students from their peers.
>
> 2. Some, in general agreement with the arguments concerning overemphasis on physical setting in most efficacy studies, have begun to look at the educational process with the goal of finding ways of facilitating the principle of mainstreaming. They have investigated different ways of structuring what goes on in the classroom, as well as different ways in which educational personnel can be used to enhance the chances of successful mainstreaming (pp. 57-58).

What is an SAE program?

Supervised Agricultural Experience Programs (SAE) are what most separates agricultural education from any other secondary school program. The foundation of SAE was the Smith-Hughes Act of 1917. This act stated: "schools shall provide for directed or supervised

practice in agriculture, either on a farm provided for by the school or other farm, for at least six months per year". SAE has changed much since 1917, but the basic premise is still the same. Though SAE has expanded to include all aspects of agriculture rather than just on-farm activities, the primary emphasis is still on hands-on learning. SAEs are closely supervised by agricultural education teachers through home visits and individual instruction. They also allow students to expand their knowledge of agriculture beyond what is taught in class by actually applying principles and concepts in their life outside of school.

Kaczor (1983) defined a good SAE program as one that:

1. Enhances classroom instruction.
2. Provides students with a wide variety of experiences.
3. Serves as a guidance function for students in an exploratory phase.
4. Allows easier transition from school to work.
5. Develops desirable habits, responsibilities, understanding of ideals, and abilities within real-life situations.
6. Contributes to a desirable relationship among home, school, and community (p. 9).

These were the traits of good SAE programs; that is, the ones that are of most benefit to students. Smith (1979) surveyed agricultural education teachers in Oklahoma and found that 97.2 percent felt that SAEs were "necessary".

One of the major aspects of good SAEs is super vision. Agricultural education teachers in Oklahoma, by law, are under a twelve month teaching contract. One of the most important reasons for this extended contract is supervision of SAE programs. Students receive tremendous benefit from the attention and advice they receive from teachers during home, farm and job-site visits. Reakes

and Welton (1977) identified the role of teachers with regard to SAE supervision:

> Vocational agriculture teachers assume many roles to have a successful SAE program. Most importantly he/she must be a teacher and be knowledgeable in his/her field. The next role the teacher has is coordinator of activities concerning the SAE program. Other roles a teacher has are crusader, planner, catalyst, and public relations expert (p. 227).

Teachers who take this supervision role seriously, will greatly increase the benefits which accrue to their students.

Benefits of SAE

The popularity and success of SAE is a direct result of the proven benefits provided to students. Countless studies have verified what we intuitively know - that quality SAE programs offer a variety of benefits to students. Pals (1989) identified specific benefits of SAE as perceived by parents, employers, and teachers. Participants were asked to rate 30 possible benefit statements. Below are the top fifteen benefits as perceived by the combined groups.

1. Promoted acceptance of responsibility.
2. Developed self-confidence.
3. Provided opportunity to learn on own.
4. Developed independence.
5. Learn to work with others.
6. Developed initiative.
7. Provided opportunity to make decisions.
8. Developed appreciation for work.
9. Provided opportunity to solve problems.
10. Helped learn things not taught in vo-ag.
11. Developed acceptable work and personal habits.
12. Developed citizenship traits.
13. Provided motivation to learn.
14. Encouraged record keeping.
15. Learned to use time efficiently (p. 21).

Pals (1988) also did a survey of students and identified their perceived benefits from SAE. Their top ten responses were:

1. Opportunity to learn on own.
2. Promote acceptance of responsibility.
3. Develop independence.
4. Pride in ownership.
5. Learn to appreciate work.
6. Opportunity to make decisions.
7. Ability to recognize talents.
8. Develop good habits.
9. Opportunity to put plans into action.
10. Encourage earning while learning (p. 37).

The benefits listed by both groups are both sought after and elusive for today's young people. Any program which is proven, as SAE is, to provide an opportunity for such benefits is worthy of unwavering support.

Summary

Agricultural education has a proven track record of serving students with special needs. Some special equipment and curriculum has been developed, but is not widely used. As a group, agricultural educators feel the need for more training about students with special needs. Agricultural education teachers are supportive of students with special needs and are in a position to provide them with many valuable experiences which they otherwise may not receive.

Special education has two broad goals. One is two help students with disabilities become self-sufficient. The other is to capitalize on their abilities. Specific goals of special education are often related to employability skills, many of which have been identified as SAE benefits. Some of these were included as possible

benefit statements in the questionnaire used in this study. The most common means of accomplishing special education goals is through vocational training, which is fine if it does not become a limitation for students who desire something else. Specific goals of students with special needs are outlined in a Individual Education Plan (IEP).

Mainstreaming is the inclusion of students with special needs in regular classrooms. It is very effective when applied on an individual basis. Different levels of mainstreaming are appropriate and beneficial for every student. Agriculture education is often a good mainstreaming choice.

SAE is a hands-on practical approach to learning. Good SAEs are closely supervised by qualified teachers and provide the student with opportunities to apply concepts and principles taught in the classroom. SAE has a long history of support among educators, parents, and students because of its proven benefits.

SAE is an outstanding educational tool. Students fortunate enough to be involved in quality SAE programs are nearly certain to be better off as a result of such involvement. Therefore, it should be the goal of educators to extend the opportunities provided by SAEs to as many students as possible. This is where mainstreaming comes in. There is perhaps no better vehicle for helping students with special needs (and all students for that matter) take advantage of their individual strengths in an effort to better themselves.

CHAPTER III

DESIGN AND METHODOLOGY OF THE STUDY

Introduction

The purpose of this chapter was to describe the methods and procedures utilized in conducting this study.

The intent of this study was to determine benefits of SAE programs which accrue to students with special needs as well as teachers' perceptions of SAE programs for students with special needs. In order to accomplish the purpose and objectives of this study, it was necessary to determine a population and develop an instrument for data collection. Procedures for collecting and analyzing the data were also established. The data treated in this study were collected by mail questionnaire during the Fall semester of 1993.

The Population

The population of this study involved teachers from all 362 agricultural education programs in Oklahoma high schools. In the case of multiple teacher schools, the survey was addressed to the senior teacher. It was determined by the researcher that the entire population should be surveyed in order to insure that there would be an adequate number of respondents. The reason for this was that an unknown percentage of these teachers had never supervised a student

with special needs conducting an SAE. No effort was made to predetermine the inclusion of students with special needs in these programs. Teachers who had never had students with special needs in their programs were instructed to return the survey after completing only the first two questions (Appendix B).

Institutional Review Board

Federal regulations and Oklahoma State University policy require approval of all research studies that involve human subjects before investigators can begin their research. The Oklahoma State University Institutional Review Board (IRB) conducts this review to protect the rights and welfare of human subjects involved in biomedical and behavioral research. In compliance with this policy, this study was reviewed by the IRB and was granted permission to continue. The IRB approval number for this study was AG-94-002 (Appendix A).

Purpose and Objectives of the Study

The major purpose of this study was to identify specific benefits which accrue to students with special needs who are conducting SAE programs and to determine teachers' perceptions of SAE programs for students with special needs.

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

1. To determine selected demographics of students with special needs and the FFA chapters of which they were members.

2. To determine the quality of SAE programs being conducted by students with special needs as perceived by Oklahoma agricultural education teachers.

3. To determine agricultural education teachers' perceptions of SAE programs for students with special needs.

4. To determine the educational objectives of students with special needs as perceived by educators.

5. To determine selected benefits of SAE programs which may accrue to students with special needs.

The survey instrument was designed with these objectives in mind.

Development of the Instrument

A four-part questionnaire was developed to achieve the stated objectives of the study (Appendix B). The only exception was objective four - to determine the educational objectives of students with special needs. This objective was accomplished through an in-depth review of literature (Chapter II).

Part I of the instrument was designed to collect demographic data on the teachers, students, and their SAE programs. This information was collected using yes or no questions, fill in the blank questions, and a table to classify students according to their disabilities. Questions nine and ten were also used to help determine the quality of SAE programs being conducted by students with special needs. These two questions asked teachers whether SAE programs were ongoing and/or expanding. These criteria were

determined to be indicators of SAE quality by the researcher and members of the Oklahoma State University Agricultural Education department. Questions designed to evaluate additional determinants of SAE quality were included in part II.

Part II of the survey included a four-point "Likert-type" scale designed to measure teacher's attitudes concerning the involvement of students with special needs in SAE programs, and the quality of those programs. These items were developed by the researcher and his faculty adviser based on the review of literature and past experiences. Questions one to seven, nine, and sixteen to eighteen concentrated on teacher's attitudes while question eight and questions ten to fifteen were designed to measure teachers' perceptions of the quality of SAE programs conducted by students with special needs. Questions nine and ten in part I were also designed to help determine SAE quality. These questions were designed to evaluate the following selected determinants of SAE quality.

1. Is the SAE ongoing?
2. Is the SAE expanding in scope?
3. Are good records kept of the SAE?
4. Is the SAE challenging in proportion to the student/s abilities?
5. Does the SAE provide a wide range of activities?
6. Do the skills learned while conducting the SAE have practical application to the student?
7. Does the student often win awards with the SAE?
8. Is the SAE closely related to classroom instruction in agriculture?
9. Is the student satisfied with their SAE?

In part II, the respondents circled one of four choices. The choices were: SD (strongly disagree), D (disagree), A (agree), and SA (strongly agree). In reporting the data, these responses were

converted to numerical data. The assigned numerical values and real limits for each category were as follows:

Category	Numerical Value	Real Limits
Strongly Agree	4	3.50 - 4.00
Agree	3	2.50 - 3.49
Disagree	2	1.50 - 2.49
Strongly Disagree	1	1.00 - 1.49

An even number of choices was used in order to better determine the true commitments of respondents.

Part III of the questionnaire was a five-point "Likert-type" scale. This section was designed to rate selected benefits of SAE programs for students with special needs. The items in part III were derived from three sources. The first source was previous research on SAE benefits by Pals (1989) and Rawls (1980). Selected items were used from these studies based on rank and applicability to students with special needs as perceived by the researcher. The second source was the review of literature section on educational objectives of students with special needs (Chapter II). The remainder of the benefit statements were designed by the researcher and his faculty adviser based on prior knowledge, observation, and experience. The respondents circled one of five choices. The choices were: 1 (no benefit), 2 (low benefit), 3 (moderate benefit), 4 (high benefit), and 5 (extreme benefit). In reporting the data, these responses were converted to numerical data. The assigned numerical values and real limits for each category were as follows:

Category	Numerical Value	Real Limits
Extreme Benefit	5	4.50 - 5.00
High Benefit	4	3.50 - 4.49
Moderate Benefit	3	2.50 - 3.49
Low Benefit	2	1.50 - 2.49
No Benefit	1	1.00 - 1.49

Part IV consisted of four open ended questions. These questions gave participants an opportunity to express attitudes and perceptions not specifically covered by questions in parts I, II and III. The questions in part IV were:

1. What are the greatest difficulties you have encountered in providing SAE programs for students with special needs?
2. What are the greatest benefits you have recognized through SAEs for students with special needs?
3. What suggestions would you have for improving the SAE program for students with special needs?
4. In your experience, what specific SAE programs have worked best for students with special needs?

There was also space for additional comments the respondents wished to make. At the end of the survey, a question asking respondents if they would like a summary of the results of the study was included. One-hundred-nineteen (47.79%) of the 249 respondents indicated that they would like a summary. Summaries were mailed in January 1994 to all respondents who requested one (Appendix E). A copy of the summary was also mailed to Mr. Eddie Smith, state supervisor of agricultural education in Oklahoma.

Survey questions were phrased using the following guidelines from Hoppe and Parsons (1974):

1. The questions should be worded concisely and clearly (p. 62).
2. Questions need to be worded so that they are neutral, not loaded (p. 65).

3. The sequence of questions should be such that the flow of information is natural (p. 51).

After the questionnaire was developed, it was critiqued by graduate students and staff members of the Oklahoma State University Agricultural Education Department for content and format. Their input was used to improve and strengthen the instrument.

Administering the Instrument and Collecting the Data

The questionnaire was mailed to the teachers at all 362 high school agricultural education programs in Oklahoma on August 4, 1993 (Appendix B). The questionnaires were coded for tracking purposes only. Included in the initial mailing were a letter, questionnaire, and a stamped, self-addressed envelope intended to make it easier for teachers to return the survey. In the case of multiple teacher departments, the survey was addressed to the senior teacher. One-hundred-sixteen (32.04%) of the 362 teachers responded to the initial mailing. A reminder letter was sent on August 25, 1993 to the 246 teachers who had not responded to the initial mailing (Appendix C). Thirty teachers responded to the reminder letter which brought the total response through two mailings to 146 (40.33%). A final mailing was conducted September 10, 1993 (Appendix D). It was sent to the 216 remaining non-respondents. The final mailing included a letter, another copy of the questionnaire, and another stamped, self-addressed envelope to facilitate easy return. One-hundred-three teachers responded to the

final mailing for a grand total of 249 (68.78%) respondents. A summary of respondents, by district, was given in Table I.

TABLE I

DISTRIBUTION OF STUDY POPULATION BY DISTRICT

District	Distribution	
	Frequency (N)	Percentage (%)
Total Respondents	249	68.78
Northwest	43	17.27
Southwest	49	19.67
Central	48	19.28
Northeast	61	24.50
Southeast	48	19.28
Total Non-Respondents	113	31.22
Total	362	100.00

Some of the data collected in this study concerned enrollments in agricultural education. Such enrollment data was available from the information analysis department of the Oklahoma State Department of Vocational and Technical Education. Selected enrollment data was obtained from this department through Mr. Greg Dewald. This data

was used in 13 (5.22%) questionnaires where important enrollment data had been omitted. In no case, was data reported by responding teachers changed or altered. Mr. Dewald also reported that 2,438 (10.55%) of 23,120 students enrolled in agricultural education in Oklahoma in 1993 were classified as students with special needs.

The 113 (32.22%) non-respondents were assumed to be similar to the 103 late respondents. A review of late respondents showed that they were similar to early respondents, therefore it was assumed that non-respondents were similar to respondents.

Analysis of Data

Data gathered were recorded on a Microsoft Excel spreadsheet. All statistical treatments of the data gathered in this study were performed using the formula functions of the Excel spreadsheet. Functions used were standard deviations, means, frequencies and percentages. Since the entire population of agricultural education teachers was surveyed only descriptive statistics, frequencies, and percentages were necessary to accomplish the objectives of the study. Frequencies and percentages were used to describe the demographic information in part I. Means and standard deviations were used for the scaled responses in parts II and III. Selected responses from the open ended questions in part IV were also reported using frequencies and percentages.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

The purpose of this study was to identify specific benefits which accrue to students with special needs who are conducting SAE programs and to determine teachers' perceptions of SAE programs for students with special needs. The specific purpose of this chapter was to report the findings of the study which were ascertained through a questionnaire during August and September 1993. The questionnaire was sent to the entire population of the study, which was teachers at all 362 agricultural education programs in Oklahoma.

Enrollment of Students with Special Needs in Agricultural Education

The first part of the questionnaire ascertained selected demographic information. A total of 212 (85.14%) of the 249 teacher respondents reported that they had served students with special needs in their agricultural education programs. Thirty-two (12.85%) teachers reported that they had not had any students with special needs enrolled in their programs during the last five years. Finally, five (2.00%) of the responses were determined to be unusable due to incomplete or unreasonable data. It was reported by 199 (93.87%) of the teachers who had taught students with special

needs that these students were currently enrolled. Eight (3.77%) teachers last had students with special needs in 1992, three (1.42%) last served students with special needs in 1991, one (.47%) last had them in 1990 and one (.47%) in 1989. A summary of respondents experience with students with special needs during the past five years was shown in Table II.

The remainder of the data reported in this study pertained only to the 212 teachers who had experience with special needs students. Their perceptions were determined to be the most useful when examining SAE for students with special needs.

The 212 teachers who reported serving students with special needs reported a total of 15,216 students enrolled in their agricultural education programs. Of these, 1401 (9.21%) were described as having special needs. These students included 1,169 (83.44%) boys and 211 (15.06%) girls. Such a ratio is typical of enrollments in agricultural education. A telephone interview with Greg Dewald, from the information analysis department of the Oklahoma State Department of Vocational and Technical Education, revealed that the combined enrollment of all 362 agricultural education programs was 23,120 students in 1993. Of these, 2438 (10.55%) were classified as students with special needs. A summary of the enrollment information reported by teachers was shown in Table III.

Responding teachers were asked to classify students with special needs in their programs according to type and severity of handicap. A total of 112 (7.99%) of the 1401 students were

TABLE II

DISTRIBUTION OF RESPONDING TEACHERS WHO HAD SERVED STUDENTS WITH SPECIAL NEEDS DURING THE PAST FIVE YEARS

Category	Distribution Frequency (N)	Distribution Percentage (%)
Teachers with Special Needs Students	212	85.14
1993	199	93.87
1992	8	3.77
1991	3	1.42
1990	1	.47
1989	1	.47
Teachers without Special Needs Students	32	12.85
Teachers with Unusable Responses	5	2.01
Total	249	100.00

TABLE III

ENROLLMENT OF STUDENTS WITH SPECIAL NEEDS IN AGRICULTURAL EDUCATION

Category	Distribution Frequency (N)	Distribution Percentage (%)
Students without Special Needs	13,815	90.79
Students with Special Needs:	1,401	9.21
Male	1,169	83.44
Female	232	16.56
Total Students	15,216	100.00

* 212 (58.56%) of 362 programs

classified as physically handicapped. Out of these, 59 (52.68%) were reported as having a mild handicap. Thirty-eight (33.93%) were reported to be moderately handicapped and twelve (10.71%) were classified as severely handicapped. Out of the 1401 students with special needs, 1079 (77.02%) were described by their teachers as mentally handicapped. This was, by far, the largest group. Of these, 772 (71.55%) were classified as mildly mentally handicapped, 284 (26.32%) were moderately mentally handicapped and 33 (3.06%) were reported to be severely mentally handicapped. There were no specific criteria in the questionnaire to guide teachers in these classifications. Rather, it was left to the teachers' subjective discretion. Teachers did not classify 210 (14.99%) students. A few of the teachers who did not classify their students made written mention that their students had learning disabilities. These students were left unclassified, although they could have been added to the mild mental group. It was the intent of the researcher for students with learning disabilities to be classified as mildly mentally handicapped. A summary of these results was illustrated in Figure 1.

Participation in SAE by Students with Special Needs

Teachers reported that 956 (68.24%) of the 1401 students with special needs had conducted an SAE. This was a surprisingly low number considering that an important goal of agricultural education is for all students to conduct an SAE program. Of the 956 SAE

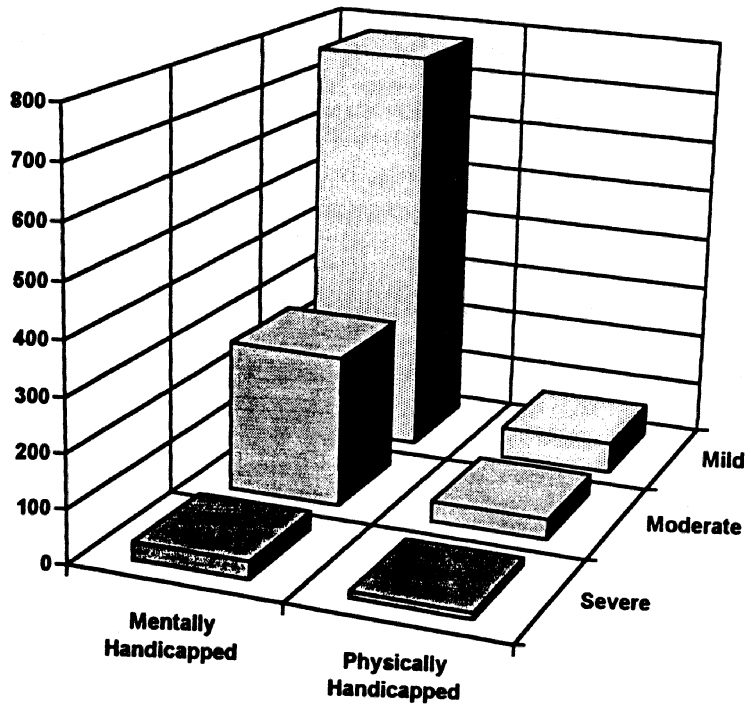

Figure 1. Classification of Students with Special Needs in Agricultural Education by Type and Severity of Handicap

programs conducted by students with special needs, 563 (58.89%) were described by teachers as "ongoing". Only 350 (36.61%) were described as "expanding in scope". It was assumed by the researcher that an SAE must have been ongoing in order to have been expanding in scope. Therefore, 393 (41.11%) SAEs were neither ongoing nor expanding in scope. Students conducting such SAEs were probably not receiving maximum benefit from their SAE programs. Overall, only 563 (40.19%) of the 1401 students with special needs reported to be enrolled in agricultural education were conducting an ongoing SAE. A summary of this information was shown in Table IV.

The SAE programs conducted by students with special needs were very diverse. Responding teachers were asked to classify their special needs students" SAEs into one of three areas. The three classifications were 1) ownership SAEs, 2) placement SAEs, and 3) laboratory or exploratory SAEs.

The majority, 631 (66.00%) of the 956 SAEs reported by teachers, were ownership SAEs. Of the ownership SAEs, 500 (79.24%) were in production agriculture, and 46 (7.29%) involved agribusiness ownership. Eighty-five ownership SAEs (13.47%) were not classified by teachers as either production or agribusiness ownership.

The second largest group, 188 (19.67%) SAEs, were classified by teachers as placement SAEs. These were broken down into the categories of production and agribusiness, then further as paid and unpaid. Thirty-seven placement SAEs (19.68%) involved paid placement in agricultural production. None of the placement SAEs were unpaid placement in agricultural production and 117 (62.23%)

TABLE IV

DISTRIBUTION OF LEVEL OF INVOLVEMENT OF STUDENTS WITH SPECIAL NEEDS IN SAE PROGRAMS

Category	Distribution Frequency (N)	Distribution Percentage (%)
Special Needs Students who Conducted an SAE Program	956	68.24
Ongoing SAE Programs which were Not Expanding in Scope	213	22.28
Ongoing SAE Programs which were Also Expanding in Scope	350	36.61
SAE Programs which were Neither Ongoing nor Expanding in Scope	393	41.11
Special Needs Students who did not Conduct an SAE Program	445	31.76
Total	1401	100.00

were paid placement in agribusiness. Three (1.60%) were unpaid placement in agribusiness. Overall, students involved in placement SAEs were gainfully employed with only 3 (1.60%) of 188 placement SAE described as unpaid placement. Thirty-one (16.49%) of the placement SAEs were not categorized by teachers.

The remaining 135 (14.12%) SAEs were reported as laboratory or exploratory SAEs. The survey instrument did not specifically ascertain the nature of these SAEs, but comments in section IV lead the researcher to surmise that the largest portion of these involved work in the greenhouse or shop. Only two (.21%) of the 956 reported SAEs were not classified by teachers as either ownership, placement, or laboratory or exploratory. A summary of the types of SAE programs which were conducted was shown in Table V.

Characteristics of Teachers Serving Students with Special Needs

Information was also collected on the teachers who were serving students with special needs in agricultural education. The purpose of this section was to report that information.

The average age of the 212 teachers serving students with special needs was 37.76 years and they averaged 13.79 years teaching experience. The standard deviation of 7.75 years of experience indicated that the responding teachers were a veteran, experienced group. This information was illustrated in Table VI.

TABLE V

DISTRIBUTION OF SAE PROGRAMS CONDUCTED BY STUDENTS WITH SPECIAL NEEDS BY TYPE OF SAE

Type of SAE program	Distribution	
	Frequency (N)	Percentage (%)
Ownership	631	66.00
Production	500	79.24
Agribusiness	46	7.29
Unclassified	85	13.47
Placement	188	19.67
Production - Paid	37	19.68
Production - Unpaid	0	00.00
Agribusiness - Paid	117	62.23
Agribusiness - Unpaid	3	1.60
Unclassified	31	16.49
Laboratory or Exploratory	135	14.12
Not Classified by Teachers	2	0.21
Total	956	100.00

TABLE VI

MEAN AGE AND YEARS TEACHING EXPERIENCE OF RESPONDENTS

Category	Mean	Standard Deviation
Age	37.76	7.92
Years of Teaching Experience	13.79	7.75

Responding teachers were asked if they conducted an SAE in high school. An overwhelming majority (202 or 95.28%) answered yes, they had conducted an SAE while in high school. Only nine (4.25%) had not conducted an SAE. Two of these nine commented in the margin that the high school they attended did not have an agricultural education program. One (.47%) teacher did not respond to this question. A summary of these responses was shown in Table VII.

Teachers were also asked whether or not they were raised on a farm or ranch. Most of the teachers, 185 (87.26%), responded that they were raised on a farm or ranch. Twenty-seven (12.74%) said they were not. This information was summarized in Table VIII.

Finally, teachers were questioned about the special needs status of their high school classmates. Only 117 (55.19%) teachers reported that there were students with special needs in their high school agricultural education class. This was a much lower percentage than the respondents indicated exists today. For example, 212 (85.14%) of the 249 responding teachers indicated that their programs served students with special needs during the past five years. The percentage of students involved in SAE has also risen significantly. Sixty-six (56.41%) of the 117 teachers who reported having classmates with special needs reported that these students were involved in SAE. Thirty-nine (33.33%) teachers said that their special needs classmates did not conduct an SAE. Twelve (10.26%) teachers responded "NA" to this question. It was assumed by the researcher that these teachers could not remember the status of their classmates due to the time which had passed since they were

TABLE VII

DISTRIBUTION OF STUDY PARTICIPANTS WHO CONDUCTED SAE PROGRAMS IN HIGH SCHOOL

Category	Distribution Frequency (N)	Distribution Percentage (%)
Teachers with SAEs in High School	202	95.28
Teachers without an SAE in High School	9	4.25
Missing Data	1	.47
Total	212	100.00

TABLE VIII

DISTRIBUTION OF STUDY PARTICIPANTS WHO WERE RAISED ON A FARM OR RANCH

Category	Distribution Frequency (N)	Distribution Percentage (%)
Teachers Raised on a Farm or Ranch	185	87.26
Teachers Not Raised on a Farm or Ranch	27	12.74
Total	212	100.00

in high school. Ninety-five (44.81%) of the 212 responding teachers reported that they did not have classmates with special needs in their high school agricultural education classes. These results were summarized in Table IX.

Teachers' Perceptions of SAE for Students with Special Needs

Table X provided a summary of teachers' perceptions of SAE for students with special needs. As stated in Chapter III, teachers were asked to rate a series of eighteen statements on a scale from one to four. Overall, the strongest agreement in this section was with the statement "SAEs are beneficial to students with special needs" and the strongest disagreement was with the statement "special needs students keep good records". Teachers also disagreed with the statement that "special needs students frequently win awards with their SAEs". Only six (2.83%) of 212 teachers disagreed that SAEs are beneficial for students with special needs. Teachers agreed that SAEs should be required of students with special needs even though these SAEs require more time and planning. Teachers expresses a belief that SAEs are more difficult for students with special needs, but also that they normally select SAEs which are challenging in proportion to their ability. Overall, teacher perceptions were very positive and they indicated that they felt that more students with special needs should be encouraged to participate in agricultural education and SAE.

TABLE IX

DISTRIBUTION OF STUDY PARTICIPANTS WHO HAD CLASSMATES WITH SPECIAL NEEDS IN HIGH SCHOOL AGRICULTURAL EDUCATION CLASSES

Category	Distribution Frequency (N)	Distribution Percentage %
Teachers that had Classmates with Special Needs in High School Agricultural Education Classes	117	55.19
Special Needs Classmates Conducted an SAE Program	66	56.41
Special Needs Classmates did Not Conduct an SAE Program	39	33.33
Teacher Responded "NA"	12	10.26
Teachers that Did Not have Classmates with Special Needs in High School Agricultural Education Class	95	44.81
Total	212	100.00

TABLE X

LEVELS OF AGREEMENT AMONG TEACHERS CONCERNING SAE PROGRAMS FOR STUDENTS WITH SPECIAL NEEDS BY SAE CHARACTERISTICS

SAE Characteristic(s)	Frequency (N) and Distribution (%) of Responses								Mean	Stand Dev.	Category of Agreement
	SD		D		A		SA				
	N	%	N	%	N	%	N	%			
Special needs students receive similar benefits	2	.94	9	4.25	114	53.77	87	41.04	3.34	.61	Agree
SAEs are beneficial to students with special needs.	-	--	6	2.83	135	63.68	71	33.49	3.31	.52	Agree
Involvement in SAE enhances the social skills of special needs students.	1	.47	14	6.60	141	866.51	32	15.09	3.19	.56	Agree
Skills learned by special needs students conducting SAEs typically have practical application.	-	--	6	2.83	174	82.08	32	15.09	3.12	.41	Agree
SAE for special needs students requires more supervision than for regular students.	-	--	46	21.70	94	44.34	72	33.96	3.12	.74	Agree
Involvement in SAE helps special needs students set more fulfilling career goals.	9	4.25	76	35.85	103	48.58	24	11.32	3.08	.52	Agree
More students with special needs should be encouraged to participate in SAE and AgEd.	4	1.89	28	13.21	129	60.85	51	24.06	3.07	.67	Agree
Special needs students are satisfied with their SAEs.	-	--	14	6.60	173	81.60	25	11.79	3.05	.43	Agree

TABLE X (Continued)

SAE Characteristic(s)	Frequency (N) and Distribution (%) of Responses: SD N	SD %	D N	D %	A N	A %	SA N	SA %	Mean	Stand Dev.	Category of Agreement
SAE for special needs students requires more time and planning from the teacher.	-	--	51	24.06	95	44.81	64	30.19	3.04	.76	Agree
SAEs of special needs students are closely related to classroom instruction in agriculture.	1	.47	30	14.15	161	75.94	20	9.43	2.94	.50	Agree
SAEs of special needs students provide a wide range of experiences.	2	.94	28	13.21	164	77.36	18	8.49	2.93	.50	Agree
Special needs students enrolled in agricultural education should be required to have an SAE.	11	5.19	47	22.17	112	52.83	42	19.81	2.87	.78	Agree
Conducting a quality SAE is more difficult for special needs students than for regular students.	9	4.25	76	35.85	103	48.58	24	11.32	2.67	.73	Agree
SAE options are more limited for special needs students than for regular students.	8	3.77	79	37.26	101	47.64	24	11.32	2.66	.73	Agree
Special needs students usually select SAEs which are challenging in proportion to their abilities.	6	2.83	81	38.21	119	56.13	6	2.83	2.59	.60	Agree

TABLE X (Continued)

SAE Characteristic(s)	Frequency (N) and Distribution (%) of Responses SD N	SD %	D N	D %	A N	A %	SA N	SA %	Mean	Stand Dev.	Category of Agreement
Special needs students receive more benefit from SAE than regular students.	11	5.19	95	44.81	81	38.21	25	11.79	2.56	.77	Agree
Special needs students frequently win awards with their SAEs.	16	7.55	95	44.81	93	43.87	8	3.77	2.44	.69	Disagree
Special needs students keep good SAE records.	20	9.43	136	63.15	53	25.00	2	1.42	2.18	.60	Disagree

Benefits of SAE for Students with Special Needs

Table XI provided a summary of teachers' ranking of possible benefits of SAE for students with special needs. As reported in Chapter III, the survey included 29 possible SAE benefit statements which the teachers rated on a scale from one to five. Every benefit statement received was rated as provided at least moderate benefit from SAE. Twenty-three (79.31%) of the 29 benefit statements were rated "high benefit" and six (20.69%) were rated as "moderate benefit". None were rated as "low benefit" or "no benefit". Only 47 (.76%) out of 6,148 (212 respondents x 29 statements) total responses were in the "no benefit" category, and only 425 (6.91%) were in the "low benefit" category. The five highest rated benefits were:

1. Develops pride in ownership.
2. Develops self esteem/self confidence.
3. Develops responsibility.
4. Improves ability to work with others.
5. Improves personal work habits.

The five lowest rated benefits were:

25. Aids in choosing an occupation.
26. Provides an opportunity to earn money.
27. Improves ability to tell time/use a calendar.
28. Provides an opportunity to grow into a business.
29. Teaches how to complete common forms such as job applications.

All 29 benefit statements were ranked from highest benefit to lowest benefit and summarized in Table XI. Table XI showed the frequency and distribution of responses, the mean and standard deviation for

TABLE XI

LEVELS OF PERCEIVED BENEFITS AMONG TEACHER RESPONDENTS CONCERNING STUDENTS WITH SPECIAL NEEDS BY SELECTED SAE BENEFITS

Selected SAE Benefits	Frequency (N) and Distribution (%) of Responses														Category of Agreement
	No		Low		Mod		High		Extrm		Mean	S.D.			
	N	%	N	%	N	%	N	%	N	%					
Develops pride in ownership	-	--	1	.47	26	12.26	84	39.62	101	47.64	4.34	.71			High Benefit
Develops self-esteem/self confidence	-	--	1	.47	34	16.04	97	45.75	80	37.74	4.21	.72			High Benefit
Develops responsibility	-	--	1	.47	47	22.17	90	42.45	74	34.91	4.12	.76			High Benefit
Improves ability to work with others	-	--	1	.47	46	21.70	102	48.11	63	29.72	4.07	.73			High Benefit
Improves personal work habits	1	.47	5	2.36	43	20.28	110	51.89	53	25.00	3.99	.77			High Benefit
Develops ability to follow instructions	-	--	4	1.89	48	22.64	118	55.66	42	19.81	3.93	.71			High Benfit
Develops life and career skills	1	.47	8	3.77	60	28.30	96	45.28	47	22.17	3.85	.82			High Benefit
Improves decision making skills	1	.47	8	3.77	56	26.42	105	49.53	42	19.81	3.84	.80			High Benefit
Teaches respect for other's property	-	--	10	4.72	58	27.36	99	46.70	45	21.23	3.84	.81			High Benefit
Provides opportunity to learn on own	1	.47	6	2.83	63	29.72	100	47.17	42	19.81	3.83	.79			High Benefit
Develops initiative	2	.94	4	1.89	55	25.94	120	56.60	31	14.62	3.82	.73			High Benefit

TABLE XI (Continued)

Selected SAE Benefits	Frequency (N) and Distribution (%) of Responses														Mean	S.D.	Category of Agreement
	No				Low		Mod		High		Extrm						
	N	%			N	%	N	%	N	%	N	%					
Develops improved reliability	1	.47			7	3.30	59	27.83	107	50.47	38	17.92			3.82	.78	High Benefit
Aids in developing social skills	-	--			11	5.19	63	29.72	92	43.40	46	21.70			3.82	.83	High Benefit
Improves communication skills	-	--			14	6.60	63	29.72	94	44.34	41	19.34			3.76	.84	High Benefit
Improves problem solving skills	1	.47			9	4.25	73	34.43	90	42.45	39	18.40			3.74	.82	High Benefit
Develops independence	2	.94			15	7.08	61	28.77	96	45.28	38	17.92			3.72	.87	High Benefit
Teaches basic safety concepts	-	--			9	4.25	77	36.32	94	44.34	32	15.09			3.70	.77	High Benefit
Improves organizational skills	-	--			16	7.55	70	33.02	88	41.51	38	17.92			3.70	.85	High Benefit
Improves social standing	2	.94			14	6.60	69	32.55	90	42.45	37	17.45			3.69	.87	High Benefit
Expands post high school opportunities	2	.94			15	7.08	68	32.08	99	46.70	28	13.21			3.64	.83	High Benefit
Develops money management skills	2	.94			14	6.60	76	35.85	90	42.45	30	14.15			3.62	.84	High Benefit
Improves math and/or measurement skills	-	--			24	11.32	73	34.43	87	41.04	28	13.21			3.56	.86	High Benefit
Develops entry level skills for job entry	-	--			19	8.96	89	41.98	80	37.74	24	11.31			3.51	.81	High Benefit

TABLE XI (Continued)

Selected SAE Benefits	Frequency (N) and Distribution (%) of Responses: No N	No %	Low N	Low %	Mod N	Mod %	High N	High %	Extrm N	Extrm %	Mean	S.D.	Category of Agreement
Aids in entry into an occupation	1	.47	26	12.26	85	40.09	78	36.79	22	10.38	3.44	.86	Mod. Benefit
Aids in choosing an occupation	2	.94	23	10.85	104	49.06	57	26.89	26	12.26	3.39	.87	Mod. Benefit
Provides an opportunity to earn money	3	1.42	32	15.09	91	42.92	62	29.25	24	11.32	3.34	.92	Mod. Benefit
Improves ability to tell time/use a calendar	9	4.25	27	12.74	85	40.09	70	33.02	21	9.91	3.32	.96	Mod. Benefit
Provides opportunity to grow into a business	6	2.83	45	21.23	98	46.23	49	23.11	14	6.60	3.09	.90	Mod. Benefit
Teaches how to complete common forms such as job applications and tax forms	10	4.72	50	23.58	90	42.45	50	23.58	12	5.66	3.02	.94	Mod. Benefit

each benefit statement, and the category of overall agreement among responding teachers.

Quality of SAE Programs Conducted by Students with Special Needs

One of the objectives of this study was to determine the quality of SAE programs conducted by students with special needs. In order to accomplish this objective, items were included in parts I and II of the questionnaire which were determined by the researcher to be important indicators of SAE quality. As stated in Chapter III, these indicators were:

1. Is the SAE ongoing?
2. Is the SAE expanding in scope?
3. Are good records kept of the SAE?
4. Is the SAE challenging in proportion to the student's abilities?
5. Does the SAE provide a wide range of activities?
6. Do the skills learned while conducting the SAE have practical application to the student?
7. Does the student often win awards with the SAE?
8. Is the SAE closely related to classroom instruction in agriculture?
9. Is the student satisfied with their SAE?

A summary of teachers' responses regarding SAE quality was shown in Tables XII and XIII. The responses gave evidence that SAE quality was good in most respects, but there was room for improvement. Teachers indicated that students with special needs did not keep good SAE records and did not frequently win awards with their SAEs. Only 350 (36.61%) of the 956 SAEs conducted by students with special needs were reported to be expanding in scope and only 563 (58.89%) were ongoing.

TABLE XII

SUMMARY OF THE LEVELS OF AGREEMENT CONCERNING SAE PROGRAM QUALITY AMONG STUDENTS WITH SPECIAL NEEDS AS PERCEIVED BY TEACHER RESPONDENTS BY SELECTED SAE QUALITY INDICATORS

	Frequency and Distribution of Responses										
Quality Indicator	SD	%	D	%	A	%	SA	%	Mean	SD	Category of Agreement
Skills learned have practical application	--	--	6	2.83	174	82.08	32	15.09	3.12	.41	Agree
Special needs students are satisfied with their SAEs	--	--	14	6.60	173	81.60	25	11.79	3.05	.43	Agree
SAEs are closely related to classroom instruction	1	.47	30	14.15	161	75.94	20	9.43	2.94	.50	Agree
SAEs provide a wide range of experiences	2	.94	28	13.21	164	77.36	18	8.49	2.93	.50	Agree
SAEs are challenging in proportion to ability	6	2.83	81	38.21	119	56.13	6	2.83	2.59	.60	Agree
Special needs students win frequent awards with SAE	16	7.55	95	44.81	93	43.87	8	3.77	2.44	.69	Disagree
Special needs students keep good SAE records	20	9.43	136	64.15	53	25.00	3	1.42	2.18	.60	Disagree

TABLE XIII

DISTRIBUTION OF SAE PROGRAMS CONDUCTED BY STUDENTS WITH SPECIAL NEEDS BY SAE STATUS

SAE Status	Distribution	
	Frequency (N)	Percentage (%)
SAEs Expanding in Scope (also Ongoing)	350	36.61
SAEs Not Expanding in Scope	606	63.39
Ongoing SAEs	563	58.89
SAEs which were Not Ongoing	393	41.11
Total SAEs	956	--- *

* not intended to equal 100.00 percent

Teachers' Comments

Part IV of the questionnaire offered teachers the opportunity to make additional comments by answering open-ended questions in four different areas concerning SAE for students with special needs. There was also space for additional comments.

The first question in part IV was "what are the greatest difficulties you have encountered in providing SAE programs for students with special needs?". Altogether, 162 (76.42%) teachers answered this question, and the range of responses was surprisingly narrow. All of the responses could be grouped into six broad categories, which was done in Table XIV.

Fifty-four (33.33%) of the 162 teachers who expressed an opinion identified the social-economic status of the student's family as the greatest difficulty in providing SAE for students with special needs. Another 32 responding teachers (19.75%) identified lack of parental support or involvement. Combined, 86 (53.05%) teachers mentioned the student's home or family situation as the greatest difficulty in providing SAE programs for students with special needs. Thirty (18.52%) teachers reported that supervision time was their biggest problem, while 22 (13.58%) identified student's abilities and 21 (12.96%) mentioned student's behavior or motivation. One teacher reported his greatest difficulty was overcoming "the belief that SAEs have to be the "traditional" livestock type". Another said, "the ability of parents to see and understand the importance of SAE - they usually only see it as a dollar cost venture". Another teacher agreed that /parental support

TABLE XIV

A DISTRIBUTION OF TEACHERS' PERCEPTIONS CONCERNING SAES FOR STUDENTS WITH SPECIAL NEEDS BY SELECTED LIMITING FACTORS

Selected Limiting Factor(s)	Distribution Frequency (N)	Distribution Percentage (%)
Teachers Expressing an Opinion	162	76.42
Social/Economic Status of Student's Family	54	33.33
Lack of Parental Involvement or Support	32	19.75
Time Required for Supervision	30	18.52
Student's Comprehension or Ability	22	13.58
Lack of Motivation/Behavioral Problems	21	12.96
Difficulty Finding Suitable SAE	3	1.85
Teachers not Expressing an Opinion	50	24.58
Totals	212	100.00

in the beginning is hard to achieve", but added that "when parents see the actual project and how the student is growing the support grows". One teacher was concerned that students with special needs in his classroom would impair the progress of regular students. He wrote "the severely mentally handicapped who cannot read cause major problems by restricting the progress of normal or above normal students who make up the majority of our program". A summary of the responses to question one in part IV was given in Table XIV, above.

The second question in part IV asked teachers "what are the greatest benefits you have recognized through SAEs for students with special needs?". A total of 179 (84.43%) teachers chose to answer this question. Ninety-one (50.84%) of the teachers who answered this question said that increased self-esteem, self-confidence, or pride was the greatest benefit they had recognized through SAE for students with special needs. It is interesting to note that the top two ranking benefits in part III of the questionnaire were "develops pride in ownership" and "develops self-esteem/self-confidence". Obviously, these benefits are widely recognized by teachers. Thirty-two (17.88%) teachers said that students with special needs conducting SAEs benefited from improved relationships with their non-handicapped peers. Thirty-one (17.32%) said students' abilities and independence increased and 17 (9.50%) stated that students benefited by winning awards and other achievements. Other benefits mentioned were improved classroom performance, improved money management skills, and preventing drop outs. One teacher said "a couple of students have increased their desire to keep grades up and

are progressing better in main lined classes". Another wrote "SAEs help them to learn that there are things that they can do well and succeed at them". The responses from question two, part IV are summarized in Table XV.

The third question in part IV asked teachers "what suggestions would you have for improving the SAE program for students with special needs?". Only 30 (14.15%) teachers responded to this question. This compares with 162 (76.42%), 179 (84.43%), and 183 (86.32%) teachers who responded to questions one, two, and three, respectively. It was unclear why the response to this question was dramatically lower than the other three. The researcher could only assume that fewer teachers had given much thought as to how to improve the SAE program for students with special needs. The 30 teachers who did express an opinion offered a variety of suggestions ranging from "keep it simple" to "separate classes for students with special needs". Teachers also suggested more money, more training, and special awards. One teacher suggested "in-service programs with parental involvement". Another wrote "not all special needs students should be allowed to participate in an SAE program, the needs are far greater for some than for others". A summary of the responses to question 3, part IV was shown in Table XVI.

The fourth question in part IV was "in your experience, what specific SAE programs have worked best for students with special needs?". One-hundred-eighty-three (86.32%) teachers responded to this question. The largest group, 63 (34.43%) teachers, identified livestock showing as the most successful SAE. This was not

TABLE XV

DISTRIBUTION OF TEACHERS' PERCEPTIONS CONCERNING RECOGNIZED ADVANTAGES AMONG STUDENTS WITH SPECIAL NEEDS BY SELECTED SAE BENEFITS

Selected SAE Benefit(s)	Distribution	
	Frequency (N)	Percentage (%)
Teachers expressing an opinion	179	84.43
Increased self-esteem, self-confidence or pride of student	91	50.84
Improved status of special needs students among their non-handicapped peers	32	17.88
Increase in student's abilities and independence	31	17.32
Winning or achievement	17	9.50
Improved classroom performance	5	2.79
Improved money management skills	2	1.12
Kept student from dropping out of school	1	.56
Teachers not expressing an opinion	33	15.57
Total	212	100.00

TABLE XVI

DISTRIBUTION OF TEACHERS' PERCEPTIONS CONCERNING THE IMPROVEMENT OF SAE PROGRAMS FOR STUDENTS WITH SPECIAL NEEDS BY SELECTED SUGGESTIONS

Selected Suggestions for Improvement	Frequency (N)	Percentage (%)
Teachers expressing an opinion	30	14.15
Keep the SAE as simple as possible	8	26.67
More money and resources	6	2.00
More training for ag. Teachers	4	13.33
School provided situations	4	13.33
Increased awareness of SAE opportunities	4	13.33
Awards programs specifically for students with special needs	2	6.67
Separate class or program for students with special needs	2	6.67
Teachers not expressing an opinion	192	85.85
Total	212	100.00

surprising since livestock showing accounts for the largest percentage of SAE programs in Oklahoma agricultural education. Additionally, thirty-one (16.94%) teachers identified swine projects, ten (5.46%) mentioned sheep, and two (1.09%) named beef cattle. It was unclear how many of the aforementioned SAEs were livestock production and how many were show projects. Teachers also identified a variety of other SAEs such as horticulture, agricultural mechanics, agribusiness, poultry, and crops. A summary of this information was shown in Table XVII.

The final question on the survey offered teachers the opportunity to present "additional comments". In this section, the authors reported selected comments by teachers with varying positions. This was done in an attempt to illustrate a cross section of teacher's views on SAE for students with special needs. Although the vast majority of comments were positive, this was not always the case. One teacher wrote "of the three I had last year my class was the only one they had in the high school, they were lazy and did not want to do anything - they plan to be on welfare". Another teacher, who obviously viewed things differently, wrote "special needs students are or can be good assets to an agricultural education program if they are viewed in that way". Another teacher commented that students with special needs "don't do as well in the classroom but do outstanding in the shop or with individual projects of their own". Still another expressed caution to his peers by stating "small schools be careful that your program does not become a dumping ground for IEP students by counselors and principals, ag

TABLE XVII

DISTRIBUTION OF TEACHERS' PERCEPTIONS CONCERNING SELECTED PROGRAMS WHICH HAVE WORKED BEST FOR STUDENTS WITH SPECIAL NEEDS BY SELECTED OPINIONS

	Distribution	
	Frequency (N)	Percentage (%)
Teachers Expressing an Opinion	183	86.32
Livestock Showing	63	34.43
Swine Production	31	16.94
Greenhouse or Horticulture Projects	30	16.39
Agricultural Mechanics or Shop Projects	14	7.65
Job Placement	11	6.01
Sheep Production	10	5.46
Small or Specialty Animal Production	8	4.37
Agribusiness Ownership	7	3.83
Poultry Production	5	2.73
Beef Production	2	1.09
Crop production	2	1.09
Teachers not expressing an opinion	29	13.68
Total	212	100.00

is good for some IEP students but not for all IEPs". Another teacher voiced a similar concern, he wrote, "most ag departments are having to take all if not most of these kids anyway - my first year teaching I had to do 20 IEPs every day". Another criticism of the IEP program was the "need to develop a program which does not guarantee passing grades to students as long as they have an IEP". The majority of comments, though, were positive and supportive of students with special needs in SAE. "These kids have good hearts, some recognize their disabilities but some have no concept of their disability" wrote one teacher. He continued that their involvement in SAE leads to "a feeling of accomplishment and belonging to what we consider normal living". One teacher even wrote that students with special needs "better appreciate what you do for them and make your job more gratifying".

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

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

Purpose of the Study

The major purpose of this study was to determine specific benefits which accrue to students with special needs who are conducting SAE programs in Oklahoma FFA chapters.

Objectives of the Study

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

1. To determine selected demographics of students with special needs and the FFA chapters of which they are members.

2. To determine the quality of SAE programs being conducted by students with special needs as perceived by Oklahoma agricultural education teachers.

3. To determine agricultural education teacher's attitudes on involvement of students with special needs in SAE programs.

4. To determine the educational objectives of students with special needs.

5. To determine selected benefits of SAE programs which accrue to students with special needs.

Design and Conduct of the Study

In order to accomplish objectives one, two, three, and five, a four part questionnaire was developed and mailed to teachers in all 362 Oklahoma Agricultural Education Departments (Appendix B). Objective four (to determine the educational objectives of students with special needs) was accomplished through a review of literature (Chapter II).

Part I of the instrument was designed to collect demographic data on the teachers, students, and their SAE programs. This information was collected using yes or no questions, fill in the blank questions, and a table to classify students according to their disabilities. Questions nine and ten were also used to help determine the quality of SAE programs being conducted by students with special needs. These two questions asked teachers whether SAE programs were ongoing and/or expanding. These criteria were determined to be indicators of SAE quality by the researcher and members of Oklahoma State University Agricultural Education faculty. Questions designed to evaluate additional determinants of SAE quality were included in Part II.

Part II was a four-point "Likert-type" scale designed to measure teacher's attitudes on the involvement of students with special needs in SAE programs and the quality of those programs. These items were developed by the researcher and his faculty adviser based on the review of literature and past experiences. Questions one to seven, and sixteen to eighteen concentrated on teachers' attitudes while questions eight to fifteen were designed to measure teachers' perceptions of the quality of SAE programs conducted by students with special needs. Questions nine and ten in Part I were also designed to help determine SAE quality.

In Part II, the respondents circled one of four choices. The choices were: SD (strongly disagree), D (disagree), A (agree), and SA (strongly agree). In reporting the data, these responses were converted to numerical data. An even number of choices was used in order to better determine the true commitments of respondents.

Part III of the questionnaire was a five-point "Likert-type" scale. This section was designed to rate selected benefits of SAE programs for students with special needs. The items in Part III were derived from three sources. The first source was previous research on SAE benefits by Pals (1989) and Rawls (1980). Selected items were used from these studies based on rank and applicability to students with special needs as perceived by the researcher and his adviser. The second source was the review of literature section on educational objectives of students with special needs (Chapter II). The remainder of the benefit statements were designed by the

researcher and his faculty adviser based on prior knowledge and experience.

In Part III, the respondents circled one of five choices. The choices were: 1 (no benefit), 2 (low benefit), 3 (moderate benefit), 4 (high benefit), and 5 (extreme benefit).

Part IV consisted of four open-ended questions. These questions gave participants an opportunity to express attitudes and perceptions not specifically covered by questions in Parts I, II and III. The questions in Part IV were:

1. What are the greatest difficulties you have encountered in providing SAE programs for students with special needs?
2. What are the greatest benefits you have recognized through SAEs for students with special needs?
3. What suggestions would you have for improving the SAE program for students with special needs?
4. In your experience, what specific SAE programs have worked best for students with special needs?

There was also space for any additional comments the respondents wished to make.

The questionnaire was mailed to the teachers at all 362 high school agricultural education programs in Oklahoma on August 4, 1993 (Appendix B). In the case of multiple teacher departments, the survey was addressed to the senior teacher at that school. After three mailings, 249 responses were received for a total response rate of 68.78 percent.

Data gathered were recorded on a Microsoft Excel spreadsheet. All statistical treatment of the data gathered in this study was performed using the formula functions of the Excel spreadsheet. Functions used were standard deviations, means, frequencies and percentages. Since the entire population of agricultural education

teachers was surveyed only descriptive statistics, frequencies, and percentages were necessary to accomplish the objectives of the study. Frequencies and percentages were used to describe the demographic information in Part I. Means and standard deviations were used for the scaled responses in Parts II and III. Selected responses from the open-ended questions in Part IV were also reported using frequencies and percentages.

The 113 (32.22%) non-respondents were assumed to be similar to the 103 late respondents. A review of late respondents showed that they were similar to early respondents, therefore it was assumed that non-respondents had characteristics similar to the respondents.

Major Findings of the Study

Demographic Information

Eighty-five percent (212) of the responding teachers had served students with special needs at some point during the last five years. Only the responses of these 212 teachers were analyzed. Teachers who had not served any students with special needs were asked to indicate this in question one and return the survey without completing it. The overwhelming majority (93.87%) of these teachers had students with special needs enrolled in their programs during the last five years. These teachers represented 15,216 students of which 1,401 (9.21%) were reported as students with special needs. Eighty-three percent of the students with special needs were boys and seventeen percent were girls.

The majority of these students, 772 (55.10%), were classified by their teachers as having a mild mental handicap. Another 284 (20.27%) were classified as moderately mentally handicapped. Thirty-three (2.36%) were severely mentally handicapped. Additionally, 59 (4.21%) students had mild physical handicaps, 38 (2.71%) had moderate physical handicaps, and 12 (.86%) were reported to be severely physically handicapped. The remaining 210 (14.99%) students were not classified by their teachers, however an unspecified number were reported to be learning disabled by teachers writing comments in the margin of the questionnaire.

Only 956 (68.24%) of the students with special needs were reported to be involved in SAE. This was a surprisingly low percentage since an important goal of agricultural education is involvement of as many students as possible in SAE. It was also a disappointing figure, since SAE were shown to be highly beneficial to students with special needs. Of the 956 SAEs conducted by students with special needs, 563 (58.89%) were described as "ongoing" and 350 (36.61%) were reported by teachers to be "expanding in scope".

The SAE programs conducted by students with special needs were of a variety of types. Teachers described 631 (66.00%) as ownership SAEs in production or agribusiness. Another 188 (19.67%) were placement SAEs and 135 (14.12%) were laboratory or exploratory SAEs. Two (.21%) of the SAEs were not classified by teachers. Although no formal comparison was made in this study, this distribution appears

similar to what would be expected in the entire population of students conducting SAEs in Oklahoma.

Certain demographic information was also collected concerning teachers with students with special needs in their programs. The average age of responding teachers was 37.76 years and the average years of teaching experience was 13.79 years. It was determined that this was a very experienced group of teachers. Ninety-five percent of the teachers reported that they had conducted an SAE while in high school and eighty-seven percent were raised on a farm or ranch. Over 55 percent of teachers reported having special needs classmates in high school. This compared to 85.14 percent of respondents to this study that had served students with special needs. Apparently, the prevalence of students with special needs in agricultural education has increased substantially. Fifty-six percent of these teachers reported that their special needs classmates had been involved in SAE. This compares to 68.24 percent of the students with special needs in this study who conducted an SAE. Ten percent of the teachers could not remember if their classmates with special needs had conducted an SAE.

Quality of SAEs Conducted by Students with Special Needs

Several items were included in Part II of the survey instrument which provided information on the quality of SAEs conducted by students with special needs. Teachers responded to several statements by circling "SD" for strongly disagree, "D" for disagree,

"A" for agree, and "SA" for strongly agree. Responses were assigned numerical values of SD = 1, D = 2, A = 3, and SA = 4. The real limit between agree and disagree was set at 2.50 and was indicated by a bold line on Figure 2. A summary of responses was shown in Figure 2. Overall, teachers agreed that the SAEs of students with special needs typically satisfied the quality criteria established for this study.

The teachers did not agree, however, that students with special needs kept good SAE records or that they frequently won awards with their SAEs. Keeping records, of course is very important to SAE quality. Other areas where SAE quality was lacking was in the "ongoing" and "expanding in scope" status of the SAE programs. Only 58.89 percent of students with special needs were described as conducting "ongoing" SAEs and only 36.61 percent had SAEs which were "expanding in scope". Normally, an SAE should continue and expand every year the students is in the program in order to maximize their experience and benefits.

Teachers' Perceptions of SAE for Students with Special Needs

Part II of the questionnaire included 18 statements designed to determine teachers' perceptions of SAE for students with special needs. Seven of these were designed to determine teachers' perceptions of SAE quality and were reported above, under objective two. The remaining eleven statements were summarized in Figure 3. In responding to these statements, teachers were asked to circle

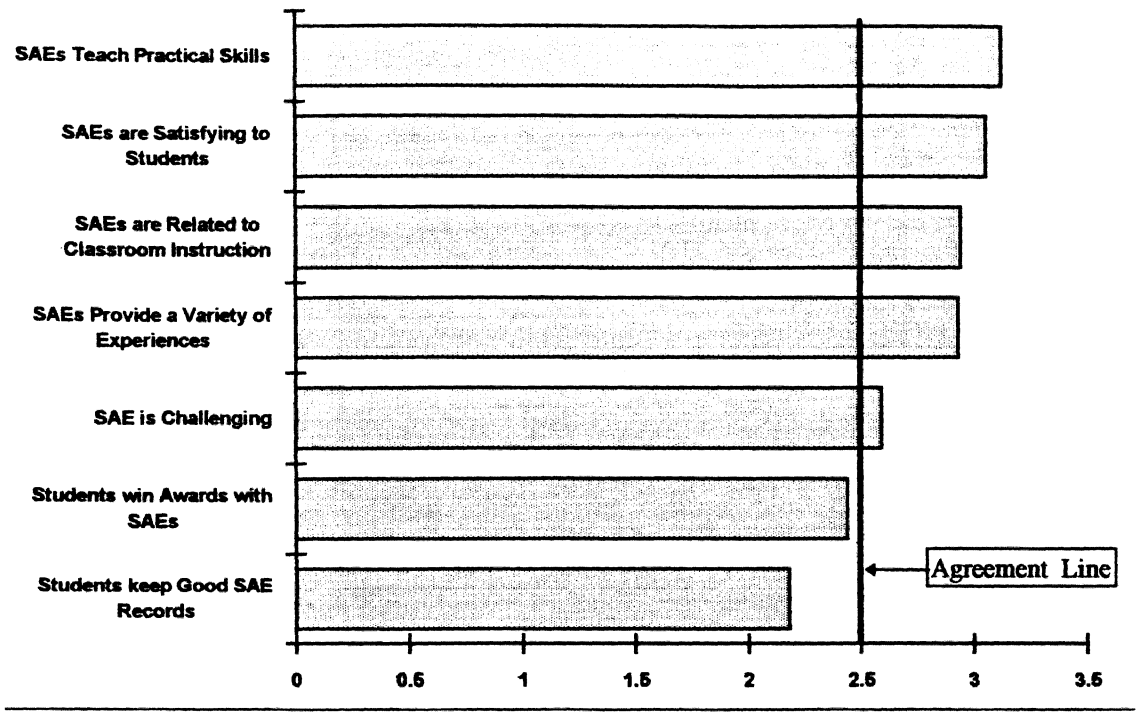

Figure 2. Selected Indicators of the Quality of SAE Programs Conducted by Students with Special Needs

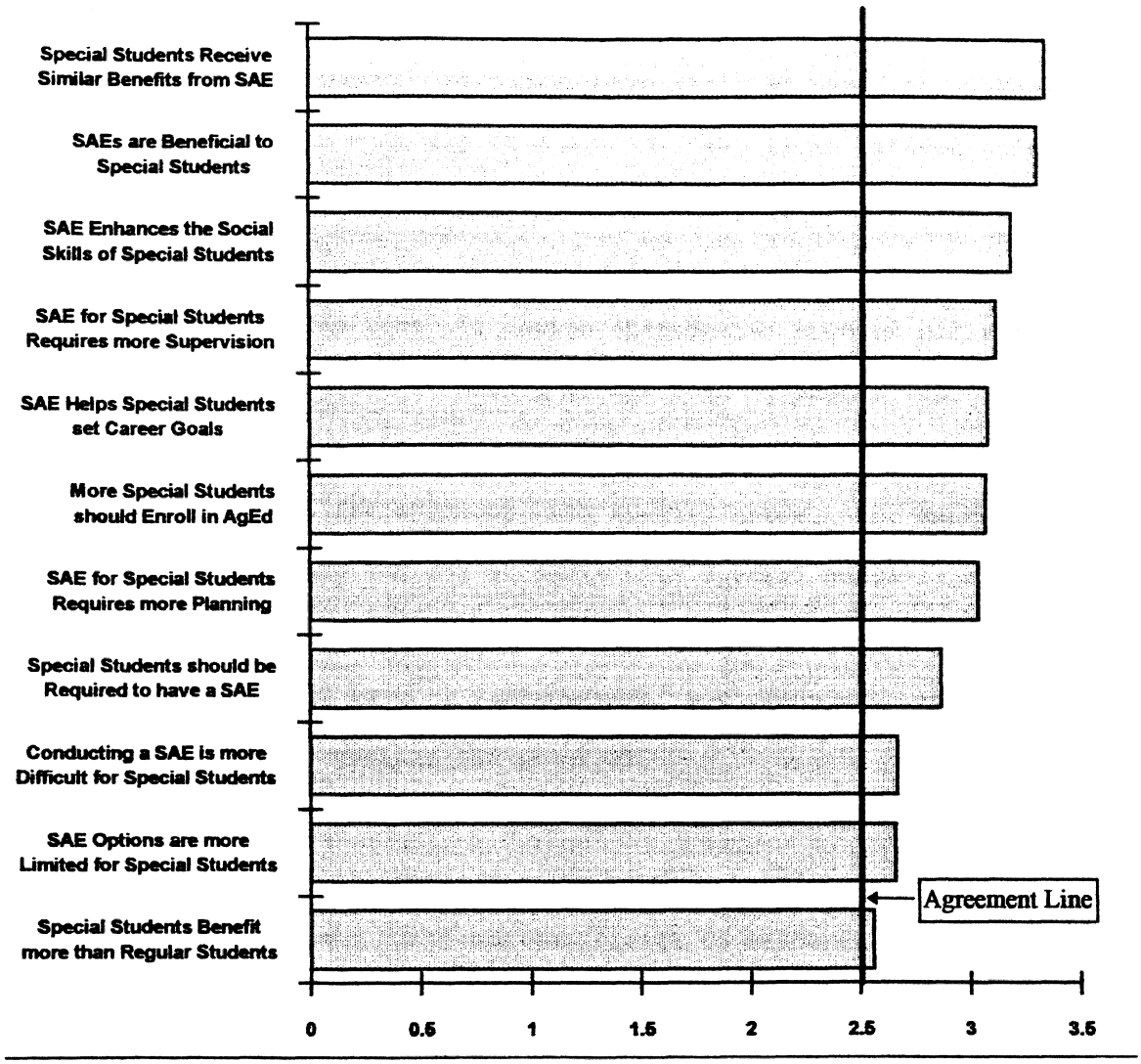

Figure 3. Teachers' Perceptions of SAE for Students With Special Needs

"SD" for strongly disagree, "D" for disagree, "A" for agree, and "SA" for strongly agree. Responses were assigned numerical values of SD = 1, D = 2, A = 3, and SA = 4. The real limit between agree and disagree was set at 2.50 and was indicated by a bold line on Figure 3.

Teachers agreed with all eleven statements, however not all statements were written in such a manner that agreement was necessarily positive. In some cases, agreement was indicative of a shortcoming of SAE for students with special needs. For example, teachers agreed that SAE for students with special needs required more supervision and planning time than for regular students. They also agreed that it is more difficult for a student with special needs to conduct a quality SAE program.

The strongest agreement among responding teachers was that "students with special needs receive similar benefits from SAE as regular students" and "SAEs are beneficial to students with special needs". They also agreed that SAE enhances the social skills of students with special needs and helps them set more fulfilling career goals. It is important to note that the teachers expressed agreement that "special needs students enrolled in agricultural education should be required to have an SAE" and that "more students with special needs should be encouraged to participate in SAE and agricultural education".

Educational Objectives for Students with Special Needs

In order to accurately evaluate the benefits of SAE which may accrue to students with special needs, it was determined that the educational objectives for these students must first be determined. This objective was accomplished through a review of literature and was not included in the questionnaire. In fact, once the objectives were determined, some were used in the design of the benefits section of the survey.

The researcher did not discover a universal set of objectives for special education, but there were two broad goals which appeared to be generally agreed upon by opinion leaders in the discipline. The first broad goal of special education was to find and capitalize on the special abilities of students with special needs, the second goal was to develop skills which would help these students become productive members of society. SAE is very effective in both of these areas. Many benefits of SAE, as shown in this study and previous ones, are directly and indirectly related to the accomplishment of these goals.

Benefits of SAE which Accrue to Students with Special Needs

As was shown in Figure 4, teachers were in overwhelming agreement that SAE is beneficial to students with special needs. Twenty-three of 29 possible benefit statements, were rated as

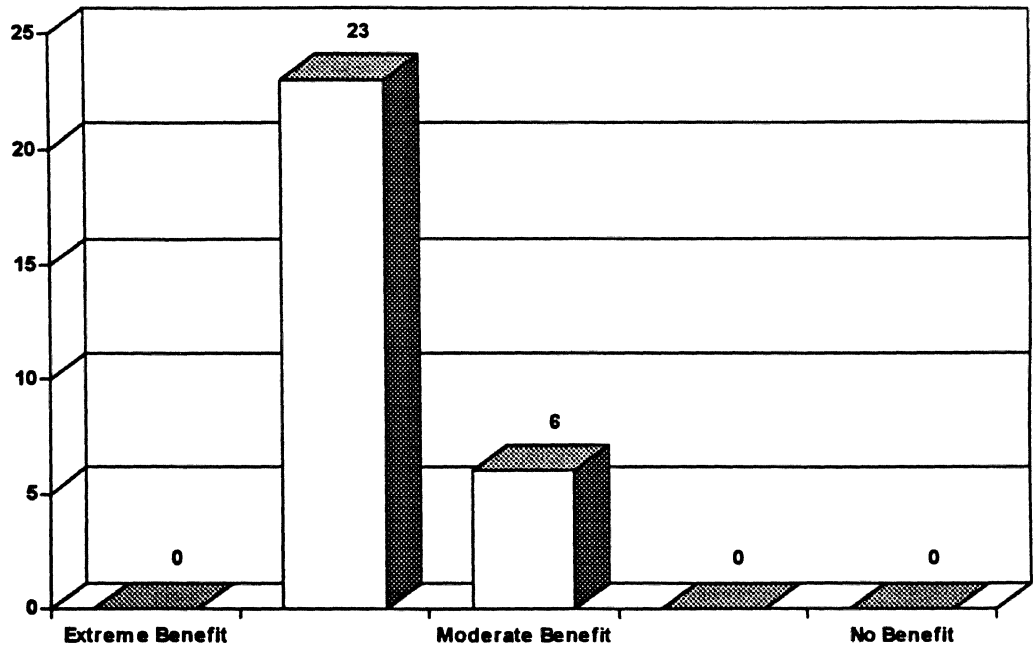

Figure 4. Distribution of Benefit Statements by Teacher Consensus of Amount of Benefit

providing "high benefit" and 6 were rated "moderate benefit". None of the statements were rated "low benefit" or "no benefit".

Conclusions

After analyzing data obtained and presented in this study, it was possible to draw certain conclusions regarding SAE programs for students with special needs enrolled in agricultural education in Oklahoma. The major conclusions were:

1. Based on the major findings that approximately ten percent of all the students enrolled in agricultural education are classified as students with special needs with a variety of disabilities and that a rather large segment of this group were somewhat mentally handicapped, it becomes apparent that agricultural education in Oklahoma serves a large population of students with special needs.

2. SAEs and the hands-on-experience they afford students has been commonly utilized as an educational tool for teaching students with special needs enrolled in agricultural education in Oklahoma.

3. Considering the major findings of the study that the average age of teacher respondents was 38 years and they had an average of 14 years teaching experience, it was apparent that the typical teacher was an "experienced" teacher. In addition, it can be further concluded that the typical Oklahoma agricultural education teacher had a farm or ranch background and conducted an SAE of their own during high school.

4. Overall teachers' perceptions of students with special needs involved in SAE programs was positive. Even though instructional requisites concerning SAE as a teaching-learning tool held similarities for both special needs and mainstream students, it was apparent that:

   a. SAE for students with special needs requires more planning and supervision from teachers.

   b. Students with special needs had greater difficulty conducting and maintaining quality SAEs.

   c. SAE options available to students with special needs were limited depending on the type and severity of the students' handicaps.

   d. As a result of the experiences afforded by SAE programs, students with special needs may actually receive greater benefit consequential of the SAE opportunities available.

5. Limited SAE options for students with special needs were not viewed as significant obstacles because of the broad scope of SAE opportunities.

6. It was readily apparent that SAE offered multiple opportunities and potential benefits for students with special needs and related directly to the objectives of special education.

7. Based on the findings of the study, it was concluded that even though the quality of SAE programs conducted by students with special needs was adequate, there was definite room for improvement.

In addition, it was further concluded that record keeping by students with special needs was inadequate and their SAE programs infrequently received special recognition.

8. It was evident that there was a lack of parental support for SAE programs among students with special needs.

9. The most common types of SAE programs conducted by students with special needs in Oklahoma included livestock exhibition, horticulture, agricultural mechanics, and job placement.

10. Involvement in SAE enhances the social status of students with special needs among their non-handicapped peers.

Recommendations

As a result of this study, the researcher offered the following suggestions to teachers and administrators involved in secondary agricultural education in Oklahoma:

1. All students with special needs enrolled in agricultural education should be encouraged by their teachers to be involved in an SAE program.

2. More students with special needs should be encouraged to participate in agricultural education and SAE. However, teachers, counselors, and administrators should be certain that students are enrolled in agricultural education based on their individual needs. Students should not be enrolled in agricultural education strictly because of their special needs status.

3. Pre-service and in-service training should be provided to agricultural education majors and teachers to deal with students

with special needs who are mainstreamed into agricultural education programs. Training or assistance should also be provided to help these teachers find the extra time necessary for supervising SAE programs conducted by students with special needs. A major portion of this training should focus on classroom management because of the problems created when students functioning on extremely different levels are placed in the same class.

4. All educators (not just those involved in agricultural education) should be made aware of the tremendous benefits available to students with special needs through SAE and agricultural education.

5. Teachers should provide special assistance and training students with special needs in order to help them keep better SAE records and conduct high quality SAE programs.

6. Teachers assist students with special needs to develop programs that enhance leadership, occupational, and life skills.

7. Activities be conducted to enhance the awareness of the parents of students with special needs as to the potential benefits that SAE involvement could provide to their children.

8. Work with students with special needs in order to help them plan high quality SAE programs. Whenever possible and practical, SAE programs should be ongoing and expanding in scope.

Recommendations for Further Study

As a result of this study, the following recommendations are offered for further research in the area of SAE programs for

students with special needs.

1. Modify this study to include any of the following:

    a. Separate classification for students with learning disabilities
    b. Examine SAE programs for students with special needs from the perspective of parents, students, administrators, and/or special educators
    c. Determine which types of SAEs which are most effective, including laboratory and exploratory SAEs

2. Identify students with special needs who successfully conducted SAE programs and, as a result, continued their accomplishment after high school.

3. A comparison between the SAE programs conducted by students with special needs and their non-handicapped peers.

4. Examine criteria for effective placement of students with special needs in agricultural education.

Implications

This data collected and analyzed in this study demonstrate that there are numerous and important benefits which accrue to students with special needs who are involved in SAE programs. These benefits fit into the categories of skills, attitudes, and opportunities. Taken as a group, these benefits closely parallel the goals of special education. It is important that all educators be made aware of the potential of SAE as an educational tool for students with special needs. It is equally important that students with special needs be encouraged to participate in SAE for the benefits it may provide them as individuals. This study does not imply that students be enrolled in agricultural education and participate in

SAE strictly because of their special needs. This would place undo burden on the teacher and make it tougher for him or her to maximize the benefits of SAE for all students.

Finally, the types of benefits provided by SAE are very elusive to young people today. Ranked highest in this study were pride, self-esteem, and responsibility. Opportunities for young people to develop these important qualities are rare, but especially rare for young people with disabilities. For some of these kids, involvement in SAE will make the difference between being a burden to society and living a fulfilling life as a productive citizen.

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APPENDIXES

APPENDIX A

INSTITUTIONAL REVIEW BOARD

(IRB) APPROVAL

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
FOR HUMAN SUBJECTS RESEARCH

Date: 07-07-93 **IRB#:** AG-94-002

Proposal Title: SAE BENEFITS FOR STUDENTS WITH SPECIAL NEEDS

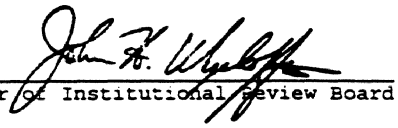
Principal Investigator(s): James D. White, Tony Schwager

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

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

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

Signature:  Date: July 8, 1993

Chair of Institutional Review Board

APPENDIX B

COVER LETTER AND SURVEY INSTRUMENT

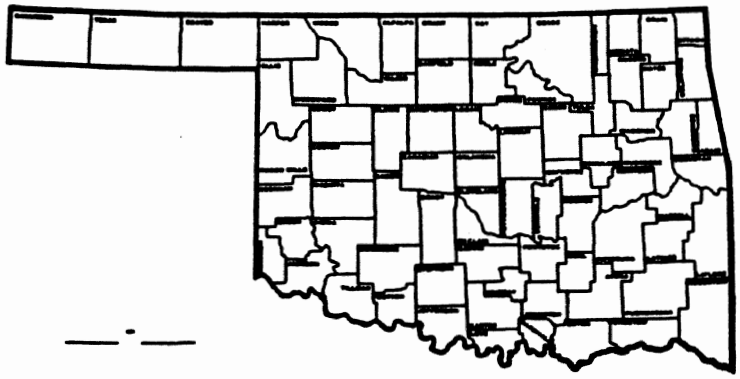
similar to what would be expected in the entire population of students conducting SAEs in Oklahoma.

Certain demographic information was also collected concerning teachers with students with special needs in their programs. The average age of responding teachers was 37.76 years and the average years of teaching experience was 13.79 years. It was determined that this was a very experienced group of teachers. Ninety-five percent of the teachers reported that they had conducted an SAE while in high school and eighty-seven percent were raised on a farm or ranch. Over 55 percent of teachers reported having special needs classmates in high school. This compared to 85.14 percent of respondents to this study that had served students with special needs. Apparently, the prevalence of students with special needs in agricultural education has increased substantially. Fifty-six percent of these teachers reported that their special needs classmates had been involved in SAE. This compares to 68.24 percent of the students with special needs in this study who conducted an SAE. Ten percent of the teachers could not remember if their classmates with special needs had conducted an SAE.

Quality of SAEs Conducted by Students with Special Needs

Several items were included in Part II of the survey instrument which provided information on the quality of SAEs conducted by students with special needs. Teachers responded to several statements by circling "SD" for strongly disagree, "D" for disagree,

SAE SURVEY



___-___

PLEASE READ FIRST !

For the purposes of this study, special needs student is defined as follows: "Students who have learning and/or behavioral problems or physical disabilities to such an extent that special education in necessary to help them fulfill their educational potential, and they have an IEP."

Part I - Background Information

1. Are there any special needs students currently enrolled in your agricultural education program? Y N
2. Have there been special needs students enrolled in your program in the last five years? Y N

IMPORTANT ! If you answered NO to BOTH question 1 and 2, then you are DONE ! Please return your survey in the enclosed self-addressed stamped envelope. If you have any comments regarding SAE for special needs students please write them on the back page of this book.

THANKS FOR YOUR PARTICIPATION !

For questions 3 - 10 please refer to the most recent year in which you had special needs students enrolled in your program. That year was 19____.

3. What was the aproximate total enrollment of your program during the year above? _____
4. How many of these were students with special needs according to the definition above? _____
5. Please classify the students in question #4 according to their most prevalent disabling condition.
   How many were:
   a. Physically disabled? _____
      of these, how many were:
      (mild?___ moderate?___ severe?___)
   b. Mentally disabled? _____
      of these, how many were:
      (mild?___ moderate?___ severe?___)

6. How many were: male? _____ female? _____

7. How many of these students conducted an SAE? _____

8. Of the SAEs in #7, how many were:

   a. ownership?___ (production___agribusiness___)

   b. placement?___ (production___agribusiness___)
   (paid ___ unpaid ___)

   c. laboratory or exploratory? ___

9. How many of the SAEs in #8 would you describe as being ongoing _____?

10. How many would you classify as being expanding in scope? _____

Please answer the following questions about yourself.

11. Age? _____

12. Years of teaching experience? _____

13. Did you have an SAE in high school? YES NO

14. Were you raised on a farm or ranch? YES NO

15. Did you have classmates with special needs in high school agriculture class? YES NO

16. If you answered yes to question 15, did the majority of your special needs classmates conduct an SAE? YES NO NA

Part II
Teacher Perceptions on SAE for Special Needs Students

Please rate the following statements on a scale from 1 - 4 as follows:

SD - strongly disagree
D - disagree
A - agree
SA- strongly agree

1. Special needs students enrolled in agricultural education should be required to have an SAE. SD D A SA

2. Special needs students receive similar benefits from SAE as regular students. SD D A SA

3. SAE for special needs students requires more time and planning from the teacher than for regular students. SD D A SA

4. SAE for special needs students requires more supervision than for regular students. SD D A SA

5. SAE options are more limited for special needs students than for regular students SD D A SA

6. Special needs students receive more benefit from SAE than regular students. SD D A SA

7. Involvement in SAE helps special needs students set more fulfilling career goals. SD D A SA

8. Special needs students keep good SAE records. SD D A SA

9. Conducting a quality SAE is more difficult for special needs students than for regular students. SD D A SA

10. Special needs students usually select SAEs which are challenging in proportion to their abilities. SD D A SA

11. SAEs of special needs students provide a wide range of experiences. SD D A SA

12. Skills learned by special needs students conducting SAEs typically have practical application. SD D A SA

13. Special needs students frequently win awards with their SAEs. SD D A SA

14. SAEs of special needs students are closely related to classroom instruction in agriculture. SD D A SA

15. Special needs students are satisfied with their SAEs. SD D A SA

16. SAEs are beneficial to students with special needs. SD D A SA

17. More students with special needs should be encouraged to participate in SAE and agricultural education. SD D A SA

18. Involvement in SAE enhances the social skills of special needs students. SD D A SA

Part III
Benefits of SAE for Special Needs Students

Please rate the following statements according to amount of benefit you feel is provided by SAE to students with special needs.
1- No Benefit (NO)
2- Low Benefit (LOW)
3- Moderate Benefit (MOD)
4- High Benefit (HI)
5- Extreme Benefit (EXT)

1. Develops responsibility	1 2 3 4 5
2. Develops life and career skills	1 2 3 4 5
3. Develops self-esteem / self confidence	1 2 3 4 5
4. Provides an opportunity to earn money	1 2 3 4 5
5. Improves ability to work with others	1 2 3 4 5
6. Provides an opportunity to grow into a business	1 2 3 4 5
7. Develops money management skills	1 2 3 4 5
8. Develops entry level skills for selected occupations	1 2 3 4 5
9. Develops independence	1 2 3 4 5
10. Improves math and / or measurement skills	1 2 3 4 5
11. Develops ability to follow instructions	1 2 3 4 5

12. Develops improved reliability 1 2 3 4 5

13. Improves communication skills 1 2 3 4 5

14. Improves organizational skills 1 2 3 4 5

15. Teaches respect for other's property 1 2 3 4 5

16. Teaches basic safety concepts 1 2 3 4 5

17. Improves ability to tell time and / or use a calendar 1 2 3 4 5

18. Develops initiative 1 2 3 4 5

19. Improves decision making skills 1 2 3 4 5

20. Improves problem solving skills 1 2 3 4 5

21. Improves personal work habits 1 2 3 4 5

22. Aids in choosing an occupation 1 2 3 4 5

23. Aids in entry into an occupation 1 2 3 4 5

24. Provides opportunity to learn on own 1 2 3 4 5

25. Develops pride in ownership 1 2 3 4 5

26. Teaches how to complete common forms such as job applications and tax forms 1 2 3 4 5

27. Improves social standing among non-handicapped peers 1 2 3 4 5

28. Aids in developing social skills 1 2 3 4 5

29. Expands post high school opportunities 1 2 3 4 5

Part IV - Teacher Comments

1. What are the greatest difficulties you have encountered in providing SAE programs for students with special needs? _____

_____

_____

_____

_____

_____

2. What are the greatest benefits you have recognized through SAEs for students with special needs? _____

_____

_____

_____

_____

_____

3. What suggestions would you have for improving the SAE program for students with special needs? _____

_____

_____

_____

_____

_____

4. In your experience, what specific SAE programs have worked best for students with special needs? _____

_____

_____

Additional Comments: _____

_____

_____

_____

_____

_____

Would you like to receive a summary of the results of this study? YES or NO

APPENDIX C

FOLLOW-UP (SECOND MAILING)

LETTER

OSU

Oklahoma State University

DEPARTMENT OF AGRICULTURAL EDUCATION
DIVISION OF AGRICULTURE

STILLWATER, OKLAHOMA 74078-0484
448 AGRICULTURAL HALL
405-744-5129
FAX: 405-744-9693

August 25, 1993

Dear «name»:

During the first week of August you were mailed a questionnaire concerning Supervised Agricultural Experience (SAE) programs for special needs students. Our records indicate that this questionnaire has not yet been returned. As an agricultural educator, no one is more aware of the benefits and opportunities which students have available to them through their participation in SAE programs. Therefore, it is extremely important that we ask again for your input and ideas. As the teacher in your unique community, you are conducting original and innovative programs to meet the needs of your students. We need for you to share these personal experiences, especially those relating to students with special needs. We also need for you to share any additional insights you have about how to conduct a positive and beneficial SAE program for students with special needs.

The information gathered in this study will aid us at OSU in doing a better job of training future agricultural education teachers. Your participation will improve the accuracy and usefullness of the information gathered and help to ensure that our teacher training program has as much real world relevance as possible. As you know, it is becoming increasingly important for agricultural educators to learn how to work with special needs students, and develop a program and curriculum which meets their special needs.

Again, we need your input and participation. Your ideas, programs, and concerns are important and we would like to know what you think as well as the student needs you perceive. Please take a few minutes to complete the questionnaire sent to you earlier this month. If you have not received a questionnaire, or have misplaced yours, a new survey will be mailed to all non-respondents in approximately two weeks.

Thanks,

Tony A. Schwager

Tony A. Schwager
Graduate Student
Agricultural Education

cc: Dr. James White
Dr. Robert Terry
Eddie Smith
Kent Boggs

APPENDIX D

FOLLOW-UP (THIRD MAILING)

LETTER

Oklahoma State University

DEPARTMENT OF AGRICULTURAL EDUCATION
DIVISION OF AGRICULTURE

STILLWATER, OKLAHOMA 74078-0484
448 AGRICULTURAL HALL
405-744-5129
FAX: 405-744-9693

September 13, 1993

Dear «name»:

We are in the process of finalizing the collection of data for our study on Supervised Agricultural Experience (SAE) programs for special needs students. Our records show that the questionnaire sent to you during the first week of August has not yet been returned. Your input is very important to this study, therefore we have enclosed a copy of the original questionnaire and a self-addressed stamped envelope for your convenience.

The opinions of all agricultural education teachers in the state of Oklahoma are needed in order to make the information collected as useful and accurate as possible. This study will not only help determine the usefulness of SAEs for special needs students, but offers you the opportunity to share unique ideas and success stories with your fellow educators. Such information helps to maximize the success of all agricultural education students, which is our ultimate goal.

We realize your time is valuable, therefore this questionnaire has been designed to take only a few minutes. It is OK to estimate enrollment figures - your opinions on parts II, III, and IV are more useful to this study than facts and figures collected in part I. The back page is optional and is a great place for you to make mention of personal experiences you believe would be useful to other agriculture teachers .

Thanks,

Tony A. Schwager

Tony A. Schwager
Graduate Student
Agricultural Education

cc: Dr. James White
Dr. Robert Terry
Eddie Smith
Kent Boggs

APPENDIX E

SUMMARY LETTER TO SELECTED RESPONDENTS

Oklahoma State University

DEPARTMENT OF AGRICULTURAL EDUCATION
DIVISION OF AGRICULTURE

STILLWATER, OKLAHOMA 74078-0484
448 AGRICULTURAL HALL
405-744-5129
FAX: 405-744-9693

January 14, 1994

Dear Agricultural Education Teacher:

Thank-you for taking time out of your busy schedule to complete the survey we sent out this fall regarding SAE programs for students with special needs. The information you provided greatly enhances the usefulness of this survey's results. It is our hope that the information gathered will enable agricultural educators in Oklahoma to better serve all students. Below is a summary of the results, which you indicated you would like to receive.

SURVEY RESULTS

Teachers at all 362 agricultural education departments in Oklahoma were contacted between August 4 and September 10, 1993. 249 (69%) teachers responded.

Part I of the survey was designed to collect demographic data. It was determined that 212 (85%) of the 249 respondents had served students with special needs in their agricultural education programs. These 212 teachers reported that 1394 (9.57%) of 14,559 students had special needs. 112 (8.03%) of the students with special needs were described as physically disabled and 1079 (77.4%) as mentally disabled. The severity of their disabilities was as follows:

	Mild	Moderate	Severe
Physical Disabilities (8.03%)	52.68%	33.93%	10.71%
Mental Disabilities (77.4%)	71.55%	26.32%	3.06%

Teachers reported that 1169 (83.86%) of students with special needs were male and 211 (15.14%) were female. 956 (68.58%) of these students were said to be conducting an SAE program. Teachers described 563 (40.39%) of these SAEs as "ongoing" and 350 (25.11%) as "expanding in scope". 631 (66%) were ownership SAEs. 188 (19.67%) were placement SAEs and 135 (9.68%) were described as laboratory or exploratory SAEs. The ownership and placement SAEs were categorized as follows:

	Agricultural Production	Agricultural Business
Ownership SAEs (66.00%)	79.24%	7.29%

	Paid Production	Unpaid Production	Paid Business	Unpaid Business
Placement SAEs (19.67%)	19.68%	0.00%	62.23%	1.60%

Demographic information was also collected on the teachers who responded to the survey. The average age of responding teachers was 37.76 years and they reported an average of 13.79 years teaching experience. 95.28% of the teachers had been enrolled in agricultural education and conducted an SAE while in high school. 87.26% were farm reared. 55.19% had special needs classmates in high school, but only 31.13% of the

teachers with special needs classmates reported that these classmates conducted an SAE project.

In Part II, teachers were asked to rate statements regarding SAE for special needs students by circling SD (strongly disagree), D (disagree), A (agree), or SA (strongly agree). The results are summarized in the table below:

Statement:	consensus	mean	SD
1. Special needs students enrolled in agricultural education should be required to have an SAE.	Agree	2.87	.78
2. Special needs students receive similar benefits from SAE as regular students.	Agree	3.35	.61
3. SAE for special needs students requires more time and planning from the teacher than for regular students.	Agree	3.04	.76
4. SAE for special needs students requires more supervision than for regular students.	Agree	3.12	.74
5. SAE options are more limited for special needs students than for regular students.	Agree	2.66	.73
6. Special needs students receive more benefit from SAE than regular students.	Agree	2.56	.77
7. Involvement in SAE helps special needs students set more fulfilling career goals.	Agree	3.09	.52
8. Special needs students keep good SAE records	Disagree	2.18	.60
9. Conducting a quality SAE is more difficult for special needs than for regular students.	Agree	2.67	.73
10. Special needs students usually select SAEs which are challenging in proportion to their abilities.	Agree	2.59	.60
11. SAEs of special needs students provide a wide range of experiences.	Agree	2.93	.50
12. Skills learned by special needs students conducting SAEs typically have practical application.	Agree	3.12	.41
13. Special needs students frequently win awards with their SAEs.	Disagree	2.44	.69
14. SAEs of special needs students are closely related to classroom instruction in agriculture.	Agree	2.94	.50
15. Special needs students are satisfied with their SAEs.	Agree	3.05	.43
16. SAEs are beneficial to students with special needs.	Agree	3.31	.52
17. More students with special needs should be encouraged to participate in SAE and agricultural education.	Agree	3.07	.67
18. Involvement in SAE enhances the social skills of special needs students.	Agree	3.19	.56

In Part III, teachers were asked to rate statements regarding possible benefits of SAE for special needs students by circling 1 (no benefit), 2 (low benefit), 3 (moderate benefit), 4 (high benefit), or 5 (extreme benefit). The results are summarized in the table below, ranked from the highest to lowest benefit.

Benefit statement:	Amount of Benefit	mean	SD
Develops pride in ownership	High	4.34	.71
Develops self-esteem / self confidence	High	4.21	.72
Develops responsibility	High	4.12	.76
Improves ability to work with others	High	4.07	.73
Improves personal work habits	High	3.99	.77
Develops ability to follow instructions	High	3.93	.71
Develops life and career skills	High	3.85	.82
Teaches respect for other's property	High	3.84	.81
Improves decision making skills	High	3.84	.8
Provides opportunity to learn on own	High	3.83	.79
Develops improved reliability	High	3.82	.78
Develops Initiative	High	3.82	.73
Aids in developing social skills	High	3.82	.83
Improves communication skills	High	3.76	.84
Improves problem solving skills	High	3.74	.82
Develops independence	High	3.72	.87
Improves organizational skills	High	3.70	.85
Teaches basic safety concepts	High	3.70	.77
Improves social standing among non-handicapped peers	High	3.69	.87
Expands post high school opportunities	High	3.64	.83
Develops money management skills	High	3.62	.84
Improves math and / or measurement skills	High	3.56	.86
Develops entry level skills for selected occupations	High	3.51	.81
Aids in entry into an occupation	Moderate	3.44	.86
Aids in choosing an occupation	Moderate	3.39	.87
Provides an opportunity to earn money	Moderate	3.34	.92
Improves ability to tell time / use a calendar	Moderate	3.32	.96
Provides an opportunity to grow into a business	Moderate	3.09	.90
Teaches how to complete common forms such as job applications	Moderate	3.02	.94

Part IV of the survey offered responding teachers the opportunity to make unrestricted comments to four open-ended questions as well as space for "additional comments". Following are the four questions and some of the most common responses.

The first question was "what are the greatest difficulties you have encountered in providing SAE programs for students with special needs?". 54 (25%) of 212 teachers mentioned family income and 32 (15%) mentioned parental support. These are very high response rates for an open ended question. Additionally, 22 (10%) teachers commented on students' comprehension or ability as an obstacle to successful SAE programs and 21 (10%) cited students' lack of motivation or other negative behaviors.

The second question was "what are the greatest benefits you have recognized through SAEs for students with special needs?". 91 (43%) of 212 teachers cited increased confidence, self-esteem, or pride as the greatest benefit. 32 (15%) mentioned improved

peer status and 31 (15%) said their students' greatest benefit was increased abilities or independence.

The third question was "what suggestions would you have for improving the SAE program for special needs students?". Teachers responding to this question offered many ideas, but there was very little consensus. Examples of ideas mentioned were more training for teachers, separate classes for special needs students, special awards, a simpler record book, more money, and increased awareness.

The fourth and final question asked what specific SAEs had worked best for students with special needs. There was a wide variety of answers and again no consensus except perhaps that special needs students are successful with the same types of SAE programs as regular students. 106 (50%) of 212 teachers reported that some type of livestock show project had worked best. 29 reported that greenhouse projects were best, 14 preferred shop projects, 13 liked poultry or small animal projects, 11 chose placement SAEs, and 6 thought student owned businesses had been most successful.

CONCLUSIONS

Overall, the reply was very positive. Teacher responses and comments showed a strong level of support for special needs students in agricultural education and in SAE. In responding to question 17 of part II, teachers agreed that "more students with special needs should be encouraged to participate in SAE and agricultural education. There was also overwhelming agreement that SAE offers tremendous benefits to special needs students. Of 29 benefit statements in part III, 23 were rated as provided "high benefit" and 6 were rated "moderate benefit".

The population of special needs students served through agricultural education was fairly large. 212 (85%) of the 249 respondents had served special needs students. 1394 (9.57%) of 14,559 students were described as having special needs. This number may even be larger because, as some teachers pointed out, the survey did not offer a clear cut classification for students with learning disabilities.

Despite broad agreement that SAEs can be successfully conducted by students with special needs and tremendous benefits accrue to these students, involvement in SAE by special needs students enrolled in agricultural education was relatively low. Only 956 (68.58%) of the 1,394 students conducted an SAE. Even though the consensus among teachers (part II, number 17) was that SAE should be required of these students. Further, of these 956 SAEs only 563 (40.39%) were described by teachers as "ongoing" and only 350 (25.11%) were reported to be "expanding in scope". Other major areas for improvement were record keeping by special needs students and their ability to win awards with their SAEs.

Thanks Again for Your Assistance,

Tony A. Schwager
Agricultural Education Graduate Student

James D. White
Professor & Thesis Advisor

cc: Eddie Smith

APPENDIX F

SAMPLE OF MODIFIED VOCATIONAL AGRICULTURE CURRICULUM (REVIEW OF LITERATURE - TEXAS A&M)

V.A.I
II-A-1

VOCATIONAL AGRICULTURE I
Unit: Breeds of Beef Cattle

PREFERRED STUDENT EXPECTATIONS	MINIMUM STUDENT EXPECTATIONS
Recognize 15 breeds of beef cattle by characteristics.	Recognize 15 breeds of beef cattle by picture or sight.
Be able to distinguish between exotic and standard breeds.	Be able to distinguish between exotic and standard breeds.

CLASSROOM ACTIVITIES

Provide a (teacher) ready made chart including the breed, origin, color markings, horned or polled and outstanding or distinguishing characteristics for students to fill in.

Use color pictures or slides, like flashcards in groups of 2 or 3.

Divide class into two teams and ask questions about the different breeds (similar to a spelling bee).

If available visit breeders in the area for first hand exposure. Do the same if there is a livestock show nearby (field trip).

Have students use the glossary of terms by putting the words into context.

ADDITIONAL WORDS FOR A GLOSSARY OF TERMS

Breed - applied to a group of animals that are similar in body shape and form with a common origin & certain distinctive characteristics.

"Purebreds" - cattle that when mated produce the same breed of offspring.

"Crossbreds" - cattle that are a mixture of two or more breeds.

V.A.I
III-D-3

VOCATIONAL AGRICULTURE I
Unit - Water Requirements of Crops

PREFERRED STUDENT EXPECTATIONS	MINIMUM STUDENT EXPECTATIONS
Learn the 4 parts of an ideal soil on a volume basis and the percentage of each.	Learn 4 parts of an ideal soil on a volume basis.
Learn the relationships between field capacity, permanent wilting point and available water.	Learn what is meant by available water.
Learn 4 important functions of water to plants.	Learn what happens to plants when they need water.
Learn the relationships of soil texture to the amounts of water they can hold.	Learn that clay will hold more water than sand.
Learn 4 factors which affect the water requirement of plants.	List 3 factors that affect water requirements of plants.

CLASSROOM ACTIVITIES

Provide drawings of ideal soils and label the components.

Discuss the relationships of the components.

Provide soil samples of clay, sand, and loam to compare particle sizes.

Provide equal sized jars of sand and clay. Fill each with water and determine which will hold the most water.

Provide a wilted plant - water it and observe at the end of the period or on the next day.

Pour water into a potted plant to demonstrate both available water and gravitational water.

Team regular and handicapped students to perform demonstrations.

Provide audio-visual materials including slides, 16mm films, and tapes.

V.A.I
V-B-9

VOCATIONAL AGRICULTURE I

Unit - Mechanical Drawing and
Drawing Equipment

PREFERRED STUDENT EXPECTATIONS	MINIMUM STUDENT EXPECTATIONS
Learn 5 reasons why sketches and drawings are important.	Learn 3 reasons why sketches and drawings are important.
Learn the equipment needed for small projects and purposes of each.	Learn to identify 4 pieces of equipment needed for small projects.
Learn 3 major pieces of equipment needed for large drawings and their purposes.	Learn to identify 3 major pieces of equipment needed for large drawings and learn their purposes.
Learn the importance of neat lettering.	Learn the importance of neat lettering.
Learn 5 types of lines in mechanical drawings and the use of each.	Learn 3 types of lines in mechanical drawings.
Learn the principles of freehand sketches	Learn 3 symbols in form construction.
Learn 5 symbols used in form construction drawings.	Learn to draw circles freehand.
Learn the principles of drawing circles freehand.	Understand principles of freehand drawing.
Learn how to make scaled drawings.	Learn how to properly care for drawing equipment.
Learn how to properly care for drawing equipment.	

CLASSROOM ACTIVITIES

Provide commercial sources of filmstrips, 16mm films, slide-tape presentations to show principles of equipment use & techniques of drawings.

Provide charts and drawings of drawing equipment.

Display any available drawing equipment.

Demonstrate plan and procedures in small drawing projects. Let students participate in these activities.

APPENDIX G

SAMPLE OF MODIFIED VOCATIONAL AGRICULTURE CURRICULUM (REVIEW OF LITERATURE - PENNSYLVANIA STATE UNIVERSITY)

TASK G-4: Bathing a Horse

Purpose:

Bathing a horse removes dirt and sweat from its hair. Horses should only be bathed in warm weather. A horse should not be bathed everyday for this will dry out its hair. Lukewarm water and animal shampoo are used to bathe a horse.

Work to be Done:

Bathe a horse.

Things We Need:

1 horse
1 halter
1 lead rope
1 large bucket
1 sponge
1 sweat scraper
1 scrub brush
1 hose
A bottle of animal shampoo

CAUTION:
*Never scare a horse. Always talk to the horse as you go near it.
*Never go near a horse directly behind or in front of it; walk next to it from the side.
*When you get near enough, always pet the horse on its shoulder or neck.
*Use caution when walking around a horse.

Things to Do:

1. Get all the things we need to bathe a horse.
2. Go over next to the horse carrying the halter and lead rope in your hand.
3. Talk softly to the horse and pet it on the shoulder so it knows you are there.
4. Halter the horse as in task sheet H-3.
5. Snap the lead rope onto the halter and lead the animal to a set of cross-ties.
6. Snap the cross-ties' snaps onto the side rings on each side of the halter (see picture).
7. Unsnap the lead rope and hang it up.
8. Wet the horse's hair, mane, and tail with lukewarm water.
   a. If you are using the hose, make sure the water comes out of the nozzle slowly. Start at the horse's neck and wet its whole body.

b. If you are using the sponge and bucket, fill the bucket with lukewarm water. Using the sponge, start at the horse's neck and wet the whole body. Dip the sponge into the bucket as needed. Empty the bucket when you are finished.

9. After the horse's hair is wet, ask your teacher how much animal shampoo to mix in the bucket.
10. Mix water with the shampoo and make it soapy.
11. Using the sponge, soak up some sudsy water.
12. Beginning at the neck, place the sponge on the hair and rub it in circles. Soap the horse's whole body. Make sure you wash the horse's mane and tail.
    NOTE: Do not get soapy water into the horse's eyes or ears.
13. Rewet the sponge as often as needed.
    NOTE: You may need to make more than one bucket of soapy water.
14. Use the scrub brush and brush away dirty areas on the horse's hair.
15. After you are done washing the horse, rinse the soap from the horse's hair with lukewarm water.
    a. If you are using the hose, make sure the water comes out of the nozzle slowly. Start at the horse's neck and rinse the whole body.
    b. If you are using the sponge and bucket, fill the bucket with clean, lukewarm water. Using the sponge, start at the horse's neck and rinse the soap out of the whole body. You may have to use more than one bucket of water to rinse the horse.

    NOTE: It is very important to rinse all of the soap out of the horse's hair, mane, and tail. If the soap is not rinsed out, it will make the hair dry out.
    CAUTION: Never use a sweat scraper on the bony parts of a horse.
16. Gently place the sweat scraper against the horse's hair and pull it downward. This removes the water (see picture).
17. After scraping the water off, take the sponge and wipe off the horse's legs and face to remove water.
18. Make sure all the things used to bathe a horse are put back where they belong.
19. Snap the lead rope onto the halter.
20. Unsnap the cross-ties.
21. Lead the horse until it is dry.
22. Return the horse to its stall, pasture, or paddock.
23. Remove the halter and lead rope.
24. Put the halter and lead rope back where they belong.

APPENDIX H

SUMMARY OF DATA COLLECTED (MICROSOFT EXCEL SPREADSHEET)

SUMMARY OF QUESTIONNAIRE RESPONSES

Part 1 - Background Information **249 Total Responses**

Respondents with special needs students AND comments:

	1-yes	1-no	2-yes	2-no		3	4	physical	mild	mod	severe	mental	mild	mod	severe	male	female	SAEs	owned	prod
212	199	13	212	0	total	13615	1401	112	59	36	12	1079	772	284	33	1169	211	956	631	500
total	93.87%	6.13%	100.00%	0.00%	15,216	90.79%	9.21%	7.99%	52.68%	33.93%	10.71%	77.02%	71.55%	26.32%	3.06%	83.44%	15.06%	68.24%	66.00%	79.24%

Respondents with NO special needs students and NO comments:

total	0	27	0	27
27	0	0	0	0

Respondents with NO special needs students, but with comments:

total	0	5	0	5
5	0	0	0	0

Unusable or incomplete responses:

total	4	1	5	0
5	0	0	0	0

Part 2 - Teachers' perceptions on SAE for special needs students (1 - 4):

Respondents with special needs students AND comments:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
mean	2.87	3.35	3.04	3.12	2.66	2.56	3.08	2.18	2.67	2.59	2.93	3.12	2.44	2.94	3.05	3.31	3.07	3.19
SD	0.78	0.81	0.76	0.74	0.73	0.77	0.52	0.60	0.73	0.60	0.50	0.41	0.69	0.50	0.43	0.52	0.67	0.56
Distribution of responses:																		
1	5.19%	0.94%	0.94%	0.00%	3.77%	5.19%	0.00%	9.43%	4.25%	2.83%	0.94%	0.00%	7.55%	0.47%	0.00%	0.00%	1.89%	0.47%
2	22.17%	4.25%	24.06%	21.70%	37.26%	44.81%	9.43%	64.15%	35.85%	38.21%	13.21%	2.83%	44.81%	14.15%	6.60%	2.83%	13.21%	6.60%
3	52.83%	53.77%	44.81%	44.34%	47.64%	38.21%	72.64%	25.00%	48.58%	56.13%	77.36%	82.08%	43.87%	75.94%	81.60%	83.68%	60.85%	66.51%
4	19.81%	41.04%	30.19%	33.96%	11.32%	11.79%	17.92%	1.42%	11.32%	2.83%	8.49%	15.09%	3.77%	9.43%	11.79%	33.49%	24.06%	26.42%
Test	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Frequencies:																		
1	11	2	2	0	8	11	0	20	9	6	2	0	16	1	0	0	4	1
2	47	9	51	46	79	95	20	136	76	81	28	6	95	30	14	6	28	14
3	112	114	95	94	101	81	154	53	103	119	164	174	93	161	173	135	129	141
4	42	87	64	72	24	25	38	3	24	6	18	32	6	20	25	71	51	56

Part 3 - Benefits of SAEs for special needs students (1 - 5):

Respondents with special needs students AND comments:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
mean	4.12	3.85	4.21	3.34	4.07	3.09	3.62	3.51	3.72	3.56	3.93	3.62	3.76	3.70	3.84	3.70	3.32	3.62	3.84	3.74
SD	0.76	0.62	0.72	0.92	0.73	0.90	0.84	0.81	0.87	0.86	0.71	0.78	0.84	0.85	0.81	0.77	0.96	0.73	0.80	0.82
Distribution of responses:																				
1	0.00%	0.47%	0.00%	1.42%	0.00%	2.83%	0.94%	0.00%	0.94%	0.00%	0.00%	0.47%	0.00%	0.00%	0.00%	0.00%	4.25%	0.94%	0.47%	0.47%
2	0.47%	3.77%	0.47%	15.09%	0.47%	21.23%	6.60%	8.96%	7.08%	11.32%	1.89%	3.30%	6.60%	7.55%	4.72%	4.25%	12.74%	1.89%	3.77%	4.25%
3	22.17%	28.30%	16.04%	42.92%	21.70%	46.23%	35.85%	41.98%	28.77%	34.43%	22.64%	27.83%	29.72%	33.02%	27.36%	36.32%	40.09%	25.94%	28.42%	34.43%
4	42.45%	45.28%	45.75%	29.25%	48.11%	23.11%	42.45%	37.74%	45.28%	41.04%	55.66%	50.47%	44.34%	41.51%	46.70%	44.34%	33.02%	56.60%	49.53%	42.45%
5	34.91%	22.17%	37.74%	11.32%	29.72%	6.60%	14.15%	11.32%	17.92%	13.21%	19.81%	17.92%	19.34%	17.92%	21.23%	15.09%	9.91%	14.62%	16.51%	18.40%
Test	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Frequencies:																				
1	0	1	0	3	0	6	2	0	2	0	0	1	0	0	0	0	9	2	1	1
2	1	8	1	32	1	45	14	19	15	24	4	7	14	16	10	9	27	4	8	9
3	47	60	34	91	46	98	76	89	61	73	48	59	63	70	58	77	85	55	68	73
4	90	96	97	62	102	49	90	80	96	87	118	107	94	88	99	94	70	120	105	90
5	74	47	80	24	63	14	30	24	38	28	42	38	41	38	45	32	21	31	42	39

bus	place-ment	prod paid	prod unpaid	bus paid	bus unpaid	lab	on-going	expand-ing	age	exp	13-yes	13-no	14-yes	14-no	15-yes	15-no	16-yes	16-no	16-NA
46	188	37	0	117	3	135	563	350	mean	mean	202	9	185	27	117	95	66	39	108
7.29%	19.67%	19.68%	0.00%	62.23%	1.60%	9.64%	58.89%	36.61%	37.76	13.79	95.28%	4.25%	87.26%	12.74%	55.19%	44.81%	31.13%	18.40%	50.94%
								SD	7.92	7.75									

21	22	23	24	25	26	27	28	29
3.99	3.39	3.44	3.83	4.34	3.02	3.69	3.82	3.64
0.77	0.87	0.86	0.79	0.71	0.94	0.87	0.83	0.83

0.47%	0.94%	0.47%	0.47%	0.00%	4.72%	0.94%	0.00%	0.94%
2.36%	10.85%	12.26%	2.83%	0.47%	23.58%	6.60%	5.19%	7.08%
20.28%	49.06%	40.09%	29.72%	12.26%	42.45%	32.55%	29.72%	32.08%
51.89%	26.89%	36.79%	47.17%	39.62%	23.58%	42.45%	43.40%	46.70%
25.00%	12.26%	10.38%	19.81%	47.64%	5.66%	17.45%	21.70%	13.21%
100%	100%	100%	100%	100%	100%	100%	100%	100%

1	2	1	1	0	10	2	0	2
5	23	26	6	1	50	14	11	15
43	104	85	63	26	90	69	63	68
110	57	78	100	84	50	90	92	99
53	28	22	42	101	12	37	46	28

VITA 2

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