

ABSTRACT

STAIR, KRISTIN SHAWN. Identifying Confidence Levels and Instructional Strategies of High School Agriculture Education Teachers When Working with Students with Special Needs. (Under the direction of Gary E. Moore.)

In Agricultural Education, teachers are experiencing increased student diversity within their classrooms. The purpose of this study was to identify the confidence levels of high school agriculture teachers and to determine what strategies they are using when working with students with special needs. The population of this study consisted of secondary agriculture teachers in the United States. One state was randomly selected from each region of National Association of Agriculture Educator (NAAE) regions and a stratified random sampling method was used to ensure representation from all states. A random sample size of 333 was selected with a total response rate of 62%. Participants completed a survey instrument that measured teacher confidence, identified which strategies they used most often, how effective they believed those strategies were and collected demographic information. Analysis of the collected data showed that teachers are using recognized practices in their classes though they are more likely to use practices that impact students as a whole or are easy to use rather than individualized strategies for students with special needs. This research also showed that teachers are confident in their abilities, however they generally disagreed that their teacher training program prepared them to work with students with disabilities. Multiple regression was used to identify predictors of teacher confidence. The best fitting prediction model consisted of three variables: participating in in-service opportunities related to special education, age, and having a friend or family member with a disability. This model had a total R^2 of .118 accounting for almost 12% of the total variance in predictors of total confidence Teacher training programs should focus on providing opportunities to gain experience by working with students with special needs and to learn specific strategies for teaching students within this population.

Identifying Confidence Levels and Instructional Strategies of High School Agriculture Education
Teachers When Working with Students with Special Needs

by
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DEDICATION

This dissertation is dedicated to my family and friends who have supported and encouraged me throughout my life. My grandfather Donald Fiene once told me, “It is not a problem, it is a character building experience.” Thank you all for sticking with me through each of my great character building moments.

BIOGRAPHY

Kristin Stair was raised in Munford, Tennessee, a small town just outside of Memphis. She grew up showing quarter horses and agriculture has always been an important part of her life. Kristin was very active in the National FFA Organization throughout high school and this inspired her to work in the agricultural education field. Upon completing high school, she attended Mississippi State University where she received her B.S in Agricultural Information Science and Education. While in Starkville, Mississippi she also married her college boyfriend Sean Stair. After finishing her degree, she moved to Raleigh, North Carolina where she completed her Masters degree in Agricultural Education. While taking classes, Kristin also worked full time as an agriculture teacher at Southern Nash High School in Bailey, NC.

During her time as an agriculture teacher, Kristin enjoyed bringing biotechnology to a more rural agricultural program and she started the biotechnology program at Southern Nash High School. She also developed FFA programs that supported the community and provided agricultural education to students with severe disabilities within the school.

After having the opportunity to work with student teachers, Kristin made the decision to pursue her Doctorate in order to be able to work with undergraduates and help train teachers. In 1998, Kristin returned to North Carolina State University full time to complete her Doctorate.

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TABLE OF CONTENTS

LIST OF TABLES	vii
CHAPTER 1: INTRODUCTION	1
Theoretical Framework	5
Statement of the Problem	6
Purpose of the Study	7
Research Objectives	7
Assumptions of the Study	7
Definition of Terms	8
Summary	10
CHAPTER II: REVIEW OF LITERATURE.....	12
Educational Legislation.....	12
Trends in Education	20
Teacher Attitudes, Confidence and Efficacy.....	23
Instructional Strategies for Students with Disabilities	26
Disabilities and the Agricultural Education Model.....	31
Summary	35
CHAPTER III: METHODOLOGY	36
Population and Sampling Procedure	36
Instrumentation.....	37
Validity and Reliability	39

Data Collection.....	40
Analysis of Data.....	40
CHAPTER IV: FINDINGS.....	42
Demographics.....	41
Findings related to Objective One.....	44
Findings related to Objective Two.....	45
Findings related to Objective Three.....	47
Findings related to Objective Four.....	49
Findings related to Objective Five.....	52
CHAPTER V: CONCLUSIONS.....	55
Conclusions.....	56
Recommendations.....	62
REFERENCES.....	64
APPENCICES.....	75
A. IRB ACCEPTANCE LETTER.....	76
B. PRE-LETTER E-MAIL.....	78
C. E-MAIL TO PARTICIPANTS.....	80
C. SURVEY INSTRUMENT.....	91

LIST OF TABLES

Table 1	Summary of Major Legislation Impacting Learners with Special Needs.....	13
Table 2	Disability Prevalence Distribution for Students Ages 6 Through 21 Receiving Services Under IDEA During the Fall 2003.....	21
Table 3	Population and Sampling Distribution	37
Table 4	Demographics of Respondents.....	43
Table 5	Special Needs Experience of Respondents	44
Table 6	Use of Recommended Strategies by Agriculture Teachers.....	46
Table 7	Effectiveness of Recommended Strategies	47
Table 8	Ratings of Frequency of Use and Effectiveness of Special Needs Teaching Strategies	50
Table 9	Confidence Levels of Teachers when working with Students With Special Needs	51
Table 10	Best Fitting Model for Total Teacher Confidence	53
Table 11	Standardized Beta Coefficients of the Best Fitting Model.....	54

CHAPTER I

The vocational education teacher is expected to know a variety of fields and trades, to be aware of new research and technology, and to meet the needs of students with different abilities, experiences and career goals. Along with these demands, the vocational agriculture teacher is asked to meet the unique learning needs of handicapped students within the framework of the regular education program. (Toole & Eddowes, 1985, pg 10)

In recent decades, educational legislation has been focused on making education available for all students. The passage of the P.L. 94-142, the Education for all Handicapped Children Act in 1975 was the beginning of numerous government mandates that worked to provide equal educational opportunities (United States Department of Education, 2007). The Education for all Handicapped Children Act, which was later amended as the Individuals with Disabilities Education Act (IDEA), gave educational officials, administrators and teachers the task of ensuring that all children, regardless of the disability, are successful within their individual academic programs. According to IDEA, a disability is defined as “having (i) hearing impairments (including deafness), speech or language impairments, visual impairments (including blindness), serious emotional disturbance (hereinafter referred to as ‘emotional disturbance’), orthopedic impairments, autism, traumatic brain injury, other health impairments, or specific learning disabilities; and (ii) who, by reason thereof, needs special education and related services.” (Individuals with Disabilities Education Act, 1997, pg 7).

Since the passage of the Individuals with Disabilities in Education Act (IDEA), the total population of students served under this legislation has risen from 5% in 1976 to 8.6% in 2006. This accounts for an additional three million students requiring special services (United States Department of Education, 2007). One of the greatest ramifications of the passage of this education legislation is the push toward creating classrooms where all students are educated together with a general education teacher. This practice is termed inclusion and has been designed to provide the most educational opportunities possible for students with disabilities (Salend & Garrick-Duhaney, 1999). While the move toward making all schools inclusive has been debated among education professionals, the greatest impact has been seen within the individual classroom. This change has provided numerous challenges for education and has led to an increased need for teachers who are trained in working with students with disabilities. In some instances, the general education teacher will be the primary source of education for these students (Logan, 1994).

Despite the fact that the number of students with disabilities in general education courses is increasing, many teachers feel that they are unprepared to address these students' needs. Roberts and Dyer (2003) identified the in-service needs of Florida agricultural education teachers and of the teachers surveyed, 43% identified a need for in-service on modifying lessons for students with special needs. A similar study found that Pennsylvania educators desired more training in evaluating learners with special needs, individual education programs (IEPs), inclusion practices, and teaching strategies (Elbert & Baggett, 2003).

With the current trends in education, it is vitally important that teacher education programs be able to provide teachers with the skills they need to become successful within the classroom (Baggett & Chinoda, 2003 [as cited in Elbert & Baggett, 2003]). Many teachers are not specially trained to work with students with disabilities. This lack of training can result in a decrease in job satisfaction and increased stress for teachers who feel escalating pressure to balance testing requirements, accountability, and the needs of all of their students (Lobosco & Newman, 1992). Educators are also challenged to address the numerous goals associated with teaching students with disabilities. These students need to not only be provided with a general education, but generally require increased assistance with earning a high school diploma, learning job skills, learning life skills and preparing to become full members of society and earn a living within the workplace (McLeskey & Weller, 2000). The great emphasis to prepare these students for a career after high school has led to an increase in students with disabilities taking Career and Technical Education (CTE) coursework, which allow students to gain a practical, hands-on education that will help them to become more successful upon entering the workforce (Harvey, 2001). The diversity of the CTE programs also allows students to match their coursework to their interests and career goals. The CTE program is typically comprised of different career areas, including agriculture, business family and consumer science, health occupations, marketing, technology and trade and industry. Increased participation in these courses for students is thought to be a result of the enhanced learning that occurs with the numerous hands-on activities that these classrooms provide (Gaona, 2004).

Agricultural education was designed to provide better opportunities for all students (Iverson 1993). While additional emphasis and research has been placed on helping teachers work with students who are disabled, some research suggests that teachers in agriculture are unprepared to provide students with the modifications that they need and are not provided with adequate resources in their teacher preparation programs to work with this student population (Schumm & Vaughn, 1995). Agriculture teachers must be prepared to work with students with special needs in the classroom as well as be able to involve the students in extracurricular activities and other projects that are associated with agricultural education.

The Agricultural Education model is composed of three separate areas that are meant to be included in all agriculture programs. Students will not only participate in classroom instruction, but they will also have opportunities to gain leadership experience through participation in the National FFA Organization (FFA) activities and individual agricultural related projects within their Supervised Agricultural Experience (SAE). These three components make up the total program and students should participate in all areas in order to gain the optimum experience from the program (National FFA Organization, 2002). This total program model suggests that teachers must not only be prepared to provide resources and opportunities within the classroom, but they will also need to work with students with disabilities to make participation in each of the other areas possible. An ideal agriculture student will be presented with quality educational experiences, be involved at some level with the FFA and have a quality SAE project, regardless of their ability. This presents a challenge to agriculture teachers as they try to balance the diverse needs of students and include them in the total model within their program (Toole & Eddowes, 1985).

Theoretical Framework

The theoretical foundation of this study is based on research conducted by Gibson and Dembo (1984) on teacher efficacy. Efficacy is defined by early research conducted by Bandura (1977) as the belief that behaviors can impact goals. Bandura analyzed self efficacy as a complex psychological process that involves the conviction that certain behaviors will lead to a desired goal and that one can perform the behaviors required to achieve the desired outcome. Therefore, a person must not only believe that certain strategies or behaviors are effective, they must also be confident in their own ability to perform those strategies. This early research was later applied specifically to teacher efficacy by Gibson and Dembo (1983). Specifically, this research states that teachers who believe that what they do impacts student success and who have confidence in their own abilities will be more successful, more persistent, and exhibit greater academic focus within their classrooms. To develop higher teacher efficacy, teachers should be presented with strategies and techniques that they believe will make a positive difference in their classrooms and believe that they can use these strategies effectively. Additional efficacy research conducted by Jordan, Stanovich and Roach (1997) demonstrated what teachers who have a high level of efficacy will be more successful when working with all students in their classrooms, regardless of that students ability. Teachers who have a higher teacher efficacy will also be more likely to incorporate effective teaching strategies to motivate learners with disabilities as part of their instructional approach (Bender & Ukeje, 1989). Efficacy research demonstrates that educators who are confident in their abilities may bring about a more positive change when working with students who have many different needs. This also suggests that not only is it important to

develop teacher confidence, but there is also a tremendous need to ensure that teachers are knowledgeable about different instructional strategies that will enable them to meet the needs of their students.

Statement of the Problem

The number of students with special needs in agricultural education is increasing. Because of this, teachers may experience considerable challenges when working with the increasing diversity of their classrooms (Elbert & Baggett, 2003). In North Carolina for example, the overall enrollment of students with disabilities has increased 8% from 2001-2005 (Department of Public Instruction, 2006). This trend suggests that now, more than ever, teachers must be competent in their abilities to work with all students and be familiar with the educational and legal requirements for students who have disabilities. One study conducted by Kessell (2005) suggests that student teachers in agricultural education are not adequately aware of special education law and the characteristics of disabilities included within IDEA.

In order for teacher to be successful while working with students, they need a wide variety of resources at their disposal. The added emphasis on successful inclusion requires teachers to be aware of opportunities available to them. Based on teacher efficacy research, for total teacher efficacy to develop in agriculture teachers, they must be confident that methods, practices and strategies are available to them that will allow them to better teach all learners. They will also need to be confident in their abilities to utilize these strategies and practices while educating students within their classes.

Purpose of the Study

The purpose of this study was to identify which strategies agriculture teachers are using in their classrooms and how effective they perceive those strategies to be when working with students with special needs. A secondary purpose of this study, was to determine the self-perceived confidence levels of agriculture teachers when working with students with special needs.

Research Objectives

The objectives of this study were to:

1. To determine whether agriculture teachers are utilizing recommended practices when working with students with special needs.
2. To determine how often recognized strategies are being used by agriculture teachers.
3. To determine what strategies teachers perceive as being effective strategies for working with learners with special needs.
4. To determine self perceived confidence levels of teachers when working with students with special needs in their classes.
5. To identify predictors of teacher confidence when working with students with special needs.

Assumptions of the Study

This study has two main assumptions:

1. It was assumed that teachers will be familiar enough with special education to be able to estimate the effectiveness of a strategy, and recognize their own perceived confidence.

2. It was assumed that teachers would accurately self-report their attitudes and practices within their classrooms.

Definition of Terms

Agricultural Education Model – The agricultural education program is made up of three main areas. Each area is designed to play a key role in the total program opportunities available to students. The three components include strong classroom or laboratory instruction, the Supervised Agricultural Experience (SAE) program and the FFA student organization. (National Council for Agricultural Education, 2002)

Career and Technical Education (CTE) – The educational program consisting of courses that focus on career and technical skills. Most state CTE programs include coursework in agriculture, trade and industry, business and marketing, family and consumer science, health occupations, and technology education (Association for Career and Technical Education, n.d.).

Classroom Instruction – The portion of the agricultural education model that focuses on all of the opportunities available to students within the agriculture classroom. Courses may focus on areas such as Animal Science, Agriculture Engineering/Mechanics, Horticulture, Biotechnology, Natural Resources, and Agriculture Production (National FFA Organization, 2002).

General Education – An educational program within a school that caters to the overall student body rather than specifically focusing specifically on special education. This term is generally used to describe teachers within the school who are not specifically trained as a special education teacher (Hallahan & Kauffman, 2005).

Inclusion – The educational practice of including all or most children with disabilities within the same classroom. Disabilities may be mental, physical, social, or developmental in nature. (Smith, Polloway, Patton & Dowdy, 2006).

Individual Education Program (IEP) – A specific educational program that has been designed to cater to a student’s individual educational needs. The IEP includes a performance evaluation, long term goals, short term goals, development, recommendations, modifications, and resources available to that student. This must be reevaluated once a year and will include educational, social, and career goals (Hallahan & Kauffman, 2005).

Least Restrictive Environment (LRE) – Requires that students with disabilities are educated in the least restrictive environment consistent with their educational needs and, as much as possible, with students without disabilities. LRE also includes participation in non academic and extracurricular activities (Hallahan & Kauffman, 2005).

National FFA Organization (FFA) – The agriculture student youth organization. The portion of the agriculture total program model that provides opportunities for leadership, competition and teamwork. The FFA prepares students for leadership, personal growth and career success in agricultural education (National FFA Organization, 2002).

Special Education – Specifically designed instruction designed to meet the needs of a student with special needs within the classroom (Hallahan & Kauffman, 2005).

Special Needs – Special needs have generally been identified through the Individuals with Disabilities Education Act. Young children who have been diagnosed as having developmental delays, or any child who has been evaluated as having one of a limited list of disabilities specified in IDEA, are considered to have special needs when they require special

education and related services. This term may also be used for students who are considered to be “at-risk” for learning, emotional, behavioral, or physical disorders or who are educationally gifted (Brennan & Rosenzweig, 2008).

Supervised Agricultural Experience (SAE) – The portion of the agriculture model that involves an independent project completed away from the school environment. This project focuses on a student’s specific area of agricultural interest and can involve entrepreneurship, working in an agriculture career, conducting agriculture research, solving an agriculture based problem, conducting career exploration activities, or improving an area of a home, business, or farm (National FFA Organization, 2002).

Summary

Since the passage of the Individuals with Disabilities in Education Act there has been an increase in the number of students with special needs that are enrolling in agricultural education. In order for agriculture teachers to be successful in this classroom environment they must know what resources are available to them and what is expected of them. Research suggests that many teachers are not confident in their abilities to provide an appropriate education to all students. If confidence can indeed be linked with classroom success, then it is important that research be conducted to determine what areas teachers feel that they are least competent in. This may help provide education professionals with information needed to determine in-service requirements for current teachers and coursework that should be included in teacher education programs. Most research conducted on inclusion is conducted in the general education classroom and there is limited research specifically on agricultural

education (Richardson & Washburn, 2006). This study is an effort to add to the growing research on agricultural education and the inclusion classroom.

CHAPTER II

REVIEW OF LITERATURE

Inclusion is a complex issue that consists of many different components. This review has identified some of the major topics that are involved in inclusion and encountered when working with students with special needs. Educational law, trends in education, teacher attitudes and confidence, and teaching methods all affect the teaching of students in a diverse classroom. The purpose of this review was to identify trends that may exist in the incorporation of students with disabilities in agricultural education.

Educational Legislation

Prior to the 1960's, there were no federal laws to protect individuals in need of special education services. If a student had a severe disability, it was likely that he or she would either be kept out of sight of others, would drop out of school early, or would not attend school at all (Moore, 1980). In 1965, the Elementary and Secondary Education Act (ESEA) was introduced to provide funding for “educational agencies serving areas with concentrations of children from low-income families to expand and improve their educational programs by various means (including preschool programs) which contribute to meeting the special educational needs of educationally deprived children” (Elementary and Secondary Education Act, 1965). The introduction of the Elementary and Secondary Education act laid the groundwork for future special education legislation that would expand on the legal rights and requirements for individuals with disabilities. [Table 1]. Specifically this act set a precedent for requiring specific educational services and requirements for individuals with disabilities and provided funding for the implementation of those services.

Table 1

Summary of Major Legislation Impacting Learners with Special Needs

Date	Legislation	Major Impact of the Legislation
1975	Education for All Handicapped Children Act P.L. 94-142	Introduced: <ul style="list-style-type: none"> • Free and Appropriate Education • Least Restrictive Environment • Individualized Education Plan • Due Process • Non Discriminatory Assessment • Parental Participation
1990	Individuals with Disabilities Education Act (formerly P.L. 94-142)	<ul style="list-style-type: none"> • Changed terminology from “handicapped” to “disabilities” and incorporated person first terminology • Introduced transition plans for after high school to begin no later than age 16 • Added Autism and Traumatic Brain Injury to the list of disabilities included under IDEA
1997	IDEA amendment	<ul style="list-style-type: none"> • Expanded the IEP requirements • Required that parents be informed of students’ progress
2001	No Child Left Behind	<ul style="list-style-type: none"> • Included goals such as “improve academic performance of all students, including individuals with disabilities. • Under NCLB and IDEA, most students with disabilities are required to take state exams.
2004	IDEA reauthorization	<ul style="list-style-type: none"> • Clarified procedures for student eligibility • Required “Highly Qualified” teachers for students with special needs

Note. From “*Exceptional learners: Introduction to Special Education (10th edition)*”
By D. P. Hallahan, and J. M. Kauffman, 2005, Boston: Allyn & Bacon

Section 504 of the Rehabilitation Act of 1973

Section 504 was a civil rights act, enacted in 1973 in order to protect all individuals with disabilities from discrimination. Specifically, this law is designed to ensure that individuals with disabilities are not excluded from activities or programs that receive federal assistance. Schools and institutions that receive these funds must provide appropriate educational services to all students. Under Section 504, students must be given a free and appropriate education and be placed in the most appropriate educational environment for their disability. This environment may be a general education class, special education services, or a mix of the two (Section 504, 1973).

Education for All Handicapped Children Act

The Education for All Handicapped Children Act (EAHCA), usually referred to as PL 94-142 or sometimes EHA was signed into law in 1975 by President Ford. This is widely recognized as one of the most influential pieces of educational disability legislation (Zipkin, n.d.). In order to receive federal funding, each state had to provide a free and appropriate public education to all students. This allowed all students regardless of their disabilities to receive an education. This legislation also required that each state evaluate its students and design an Individualized Education Program (IEP) for each student who received special education services. The development of the IEP required states to adequately identify students with disabilities and design a program that identified their needs to be successful in school. Another requirement of PL 94-142 was that children with disabilities must be taught in the Least Restrictive Environment (LRE). The LRE was the legal basis behind inclusion in public schools and was designed to ensure that students were not restricted to special

education classrooms, but were provided with the least restricted environment in which the student can learn, based upon the specific requirements of the disability. The LRE depends greatly on the particular characteristics of the student and vary depending on the level of the students ability. While some students would be placed completely within the regular education setting, others would be given the appropriate mix of general education and special education based on their abilities. Lastly, this law also provided measures for parental participation in the educational process and due process to challenge programs in public hearing (Education For All Handicapped Children Act, 1975).

The Vocational Education Act of 1984

The Vocational Education Act, also known as PL 98-524 or the Carl D. Perkins Education Act, allotted federal funds for vocational education. In order to receive federal funding this law required that students with disabilities be given equal access to vocational education programs and opportunities available to students within those courses. This legislation allotted 32% of state funding specifically to “handicapped” and “disadvantaged” populations (Carl D. Perkins Vocational Education Act, 1984). Funding was based on the “number of handicapped students and the number of academically and economically disadvantaged students enrolled in vocational education” (Muraskin, 1989, p 9)

Individuals with Disabilities Act

PL 101-476 or the Individuals with Disabilities Act (IDEA) of 1990 was an amendment to P.L. 94-142. The same basic principles of the PL 94-142 were maintained, but many were expanded or clarified. The main result of the amendment was the addition of mandatory transitional plans by the age of fourteen that would assist students in moving

forward from high school into college, a career, or a technical program. This amendment also extended the definition of what disabilities were covered under the act and changed the term “handicapped students” to “students with disabilities.” This change reflected a commitment to identifying these individuals as people rather than by their disabilities (Individuals with Disabilities Act, 1990).

IDEA Amendments

The 1997 amendment to IDEA provided clearer requirements for students to be included in regular education courses. This amendment required that parents be informed of their child’s progress and that whenever possible, students with disabilities would be included in end-of-course testing or district assessment. The 1997 reauthorization of IDEA also expanded the use of the IEP to include specific information on available learning aids and modifications that students should be allowed to utilize within their coursework. These modifications were designed to help students overcome their disabilities. This amendment also outlines thirteen recognized disabilities for students who could be served under the legislation. These included, specific learning disabilities, speech or language impairments, serious emotional disturbance, mental retardation, hearing impairments (including deafness), orthopedic impairment, other health impairments, visual impairment (including blindness), multiple disabilities, deafness, deaf-blindness, autism, and traumatic brain injury (Evanciew, 2003).

- “Specific learning disabilities” involve any disorders of basic psychological processes that may hinder understanding or in using spoken or written language. This may hinder the ability to listen, think, speak, read, write, spell or perform mathematics

skills. This does not include disabilities that are primarily the result of another recognized disability or environmental disadvantage.

- “Speech or language impairments” is a basic disorder that impacts communication due to limited verbal communication skills (this may be a result of stuttering, voice impairment, impaired articulation, or a language processing disorder) that adversely affect the educational performance of a child.
- “Serious emotional disturbance” is a condition of prolonged social behaviors that negatively impacts a child’s education. This may include an inability to maintain relationships with peers or teachers, inappropriate behavior or feeling, unhappiness or depression, or developing physical symptoms or fears associated with personal or school related problems. This may include mental disturbances such as schizophrenia but does not include children who are considered maladjusted.
- “Mental retardation” or “Intellectual Disability” is defined as significant sub-average intelligence that is found at the same time as deficits in adaptive behavior. This condition affects the educational performance of the child and usually begins in early development.
- “Hearing impairments” is a permanent or fluctuating impairment in hearing that negatively impacts learning.
- “Orthopedic impairment” is recognized as a severe orthopedic impairment that is caused by a congenital anomaly, impairment caused by disease, bone deformation,

and abnormalities from other causes. This may include many different impairments such as clubfoot, cerebral palsy, and amputations and impacts mobility and movement.

- “Other health impairments” involve limited strength, vitality or alertness, including heightened senses due to environmental stimuli. This may also included limited alertness due to chronic or acute health problems. Examples of Other Health Impairments include asthma, attention deficit hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever and sickle cell anemia. To be considered an impairment, this condition must negatively impact a child’s educational performance.
- “Visual impairment (including blindness)” includes blindness or partial blindness that negatively affects a child’s education, even with correction.
- “Multiple disabilities” are any combination of recognized impairments that causes such a severe need that individuals cannot be accommodated in a program for only one impairment.
- “Deafness” is defined as a hearing impairment that a child is so severely impaired in processing linguistic information (with or without amplification) that it negatively impacts a child’s education.
- “Deaf-blindness” includes simultaneous hearing and visual impairment so severe that educational needs cannot be met if accommodated for only deafness or blindness.

- “Autism” is a developmental disability that negatively impacts verbal and non-verbal communication. This condition includes characteristics such as repetitious activities, stereotyped movements, resistance to change in the routine or environment, and unusual sensory responses. This may be apparent in children as young as three years of age, though some signs may be apparent at an even earlier age.
- “Traumatic brain injury” is caused by an injury to the brain through external physical force. This applies to open or closed head injuries that may impact cognition, language, memory, attention, reasoning, abstract thinking, judgment, problem solving, psychosocial behavior, physical functions, information processing or speech. This may apply to one or more of these conditions.

(Individuals with Disabilities Act Code of Federal Regulations, Title 34, Section 300.7(c) 1-13)

No Child Left Behind

The 2001 No Child Left Behind Act (NCLB) has primarily focused on accountability standards for education. NCLB includes eight main provisions: Increased accountability, Adequate Yearly Progress (AYP), school wide programs, LEA and school improvement, qualification of teachers and professionals, participation of children in private schools, LEA allocations, and fiscal requirements (United States Department of Education, 2002). The greatest impact of NCLB on vocational education is the concern that the emphasis on end-of-course testing requirements will become detrimental to the hands-on nature of vocational courses. Another concern that vocational education advocates have about NCLB is that the

emphasis on end-of-course testing will be detrimental to students with disabilities within these courses (Gaona, 2004).

Individuals with Disabilities in Education Act, 2004

The current amendment to IDEA is the 2004 amendment which specifies which students are eligible for services under IDEA. In order for a student to receive services they must be identified as one of the recognized disabilities using scientific, research based approaches. A student cannot be provided with services simply because they were given an inferior education. The amendment also specifies that special education teachers must be “Highly Qualified”. This amendment also added “Developmental Delay” as the 14th disability category to indicate an infant or young child who is significantly behind in normal development in areas such as motor development, cognitive development or language (Hallahan and Kauffman, 2005).

Trends in Education

With the passage of the P.L. 94-142, there have been considerable increases in the number of students with disabilities found in the traditional classroom. This increase in numbers is likely a result of more specific identification practices and of more refined disability categories under the Individuals with Disabilities in Education Act. According to “Condition of Education” a report published by the National Center for Educational Statistics in 2007, 52% of students with disabilities spend 80% of their time in regular education classroom. Students served under IDEA now account for 14% of the total number of students enrolled in public school. This amounts to a total of 6,713,000 students with disabilities, a number that has almost doubled in the past 30 years (United States Department of Education,

2007). The rates for specific disabilities have also increased [Table 2]. While inclusion is not new, the impact that it has on education is being constantly analyzed. Research suggests that this step toward increased inclusion does benefit students. The National Center for

Table 2

Disability Prevalence Distribution for Students Ages 6 Through 21 Receiving Services Under IDEA During the Fall 2003.

Disability	Percentage of students receiving services
Specific Learning Disabilities	47.4%
Speech or Language Impairments	18.7%
Mental Retardation	9.6%
Emotional Disturbance	8%
Other Health Impairments	7.5%
Other Disabilities Combined	8.8%
Autism	2.3%
Multiple Disabilities	2.2%
Hearing Impairments	1.2%
Developmental Delays	1.1%
Orthopedic Impairments	1.1%
Visual Impairments	0.4%
Traumatic Brain Injury	0.4%
Deaf-blindness	0.03%

From "Twenty-seventh annual report to congress on the implementation of the Individuals with Disabilities Education Act, Parts B and C". Retrieved August 4, 2008 from <http://www.ed.gov/about/reports/annual/osep/2005/parts-b-c/index.html>.

Educational Restructuring and Inclusion (1995) published findings that supported the increase in inclusion for students with disabilities to be included in general education classes. This study found increased gains on standardized tests, IEP goals, behavior, motivation, and grades. The school systems that were studied also noted improvement in peer relations and attitude. The increase in the number of students with disabilities is being reflected within Career and Technical Education (CTE) courses. Harvey found that 68% of students with disabilities participated in vocational-technical education during high school (1998). Between 1982 and 1994, the number of students participating in vocational education began to decline in all sub-groups except for students with disabilities. These students completed 54% more vocational credits in 1994 than students without disabilities (United States Department of Education, 2000). In North Carolina, for example, 56.1% of those enrolled in CTE courses (agricultural education, business and information technology, career development, family and consumer sciences, health occupations, marketing education, technology education and trade and industry) were identified as having a disability. In agricultural education, these numbers are very similar. The total enrollment in agriculture courses in North Carolina for the 2004-2005 school year was 37,822 students. Of this number, 20,789 students were considered special populations (Department of Public Instruction, 2006). While these numbers vary greatly by state and even individual program, it can be assumed that agriculture teachers will be faced with the task of providing the best education possible for their students while teaching a very diverse group of individuals. This can be an overwhelming challenge for educators. These programs must establish standards while balancing modifications and accommodations for all students (Bateman, 1992).

Teacher Attitudes, Confidence, and Efficacy

Teacher attitudes and cooperation can be an important factor in making inclusion programs work (Salend & Garrick-Duhaney, 1999). Teacher efficacy and confidence about inclusion can be a contributing factor in a teacher's overall success within their classrooms. Efficacy as defined by Bandura is the belief that one's behaviors can impact one's desired goals (1977). For teachers, a successful program is a result of teachers believing what they do makes a difference to students. Teachers who have a high level of efficacy will view difficulties in their classroom as challenges to be overcome, rather than insurmountable obstacles (Gibson & Dembo, 1984). High self-efficacy can help teachers create successful classrooms for all students. Efficacy research conducted by Bandura (1977) found that there are two main dimensions that comprise the total concept of self-efficacy. The first dimension is outcome efficacy which contends that behaviors will lead to desired changes. The second is self-efficacy, or the confidence that one has the ability to make those changes occur. Therefore, teachers must be fully confident and committed to making positive changes occur in their classroom while working with students with disabilities.

Since the initiation of inclusion in schools, teachers have generally had a negative opinion of educating these learners in a regular classroom. A study conducted by Center and Ward in 1987 suggested that most teachers look favorably on the theory of inclusion, but they are often less willing to accept students with disabilities within their own classrooms (as cited in Campbell, Gilmore & Cuskelly, 2003). Some studies suggest that that the specific disabilities can have an impact on teacher attitudes. Soodak, Podell and Lehman's (1998) research found that the teacher attitudes regarding inclusion were strongly related to type of

student disability. They found that teachers had a more negative response to students with more severe disabilities. Teachers were found to be less receptive to severe mental retardation, behavior disorders, and learning disorders but were more receptive toward students with physical disabilities. These same teachers were also more anxious when they were working with students with mental retardation. They suggested that these results may have been a result of teachers having less experience in working with this student population.

A second study in 2001, found similar results to Soodak, et al. Seventy general education teachers in nine schools in Ohio were surveyed to determine their attitudes toward inclusion. Teachers were asked to complete a nomination form which presented teachers with four scenarios and asked them to nominate one student in each category. The research found that 31% of students who had “hidden disabilities” such as learning or emotional disabilities were more likely to be nominated by teachers as being students they would remove from their classroom if they could. Students with obvious disabilities were frequently nominated as the students that teachers would be least prepared to discuss with others (Cook, 2001). Teachers may still feel uncomfortable and unfamiliar with inclusion.

Because of a feeling of dissatisfaction or fear toward working with this increasing student population, there may be some impact on total job satisfaction. Lobasco and Newman (1992) researched the job satisfaction rates of teachers in New York state and found that working with students with special needs was a negative predictor for job satisfaction. Teachers who were not professionally trained to work with this student population felt unready to work with the challenges of students with special needs. This dissatisfaction may partially stem from the increased emphasis on testing. A teacher who is very focused on test

preparation may feel resentment toward students with disabilities that can slow down the pace of the course. A significant amount of preparation may be needed to balance test preparation with the necessary modification that are needed to positively benefit students with disabilities (deBattencourt, 1999).

With such variation in teacher attitudes and confidence, there should be an increased emphasis on adequately preparing the teachers to work with students with disabilities. Recent research conducted by Kessel (2005), found that there was a significant relationship between student teacher confidence and previous experience working with students with special needs outside of an educational setting. Ammah and Hodge (2005) suggest that practical experience in working with students with special needs would increase self-confidence in modifying activities to meet the needs and interest of their learners. Agricultural education programs may need to provide additional training opportunities that allow pre-service students to work closely with students with special needs and develop additional confidence and skills before moving on to student teaching or their first teaching position.

One way to encourage a more positive attitude and confidence among current teachers may be to provide teachers with additional techniques and strategies that they can utilize within their classrooms that allow them to benefit all of their students. In 1993, Giangrece, Dennis, Cloninger, Edelman and Schattman conducted interviews with nineteen teachers in kindergarten through ninth grade. The series of interviews were followed by a survey instrument. The researchers found that teachers who increased the effective instructional strategies that they used in their classrooms had also improved their overall attitudes toward students with disabilities.

Instructional Strategies for Students with Disabilities

Research conducted by Busch, Penderson, Espin and Weissenburger (2001) found that for one new teacher, the biggest challenge was designing programs that worked for all students within a diverse classroom. Similarly, Lobasco and Newman (1992) found that teachers felt pressure to increase performance levels while still accommodating students who are difficult to teach. Teachers who are most successful have identified strategies to utilize in their classrooms that work for all students. Identifying these strategies can be an important first step in teaching a diverse group of learners.

Collaboration and Co-teaching

Collaboration with teachers, parents and school personnel has been identified as an extraordinarily successful technique for enabling teachers to meet the needs of their learners. Collaboration and co-teaching allows for a close working relationship between special education instructors and general education teachers. “Co-teaching allows teachers to use their strengths and expertise to create successful learning opportunities and to provide support for students with disabilities” (Carpenter & Dyal, 2007, p 347). Phillips, Sapona and Lubic (1995) found that teamwork was one of the most significant benefits to utilizing collaboration in inclusion programs. The research indicated that teachers who were working in collaborative teams indicated fewer feelings of isolation and felt the benefit of team problem solving and curriculum development. By working together, teachers can assist each other in planning and developing instructional methods as well as providing much needed support for each other. Mundschenk and Foley (1997) identified five benefits of collaboration when working with students with special needs. They noted that collaboration

facilitates ongoing planning, enables general education teachers to meet the needs of students with disabilities in new ways, provides personal support for educators, and allows teachers to identify skills and knowledge of other teachers.

Co-teaching is another method that helps provide support for included students. Cooperative teaching is an approach to educating students where two or more professionals work as a team to support students. In most educational settings the special education teacher comes to the general education classroom and works collaboratively with the teacher to help plan, monitor and provide accommodations for the students (Friend & Bursuck, 1999). Austin (2001) studied 139 co-teachers and found that most of the teachers felt that co-teaching was beneficial. These teachers identified the most important activities involved with the co-teaching process were providing feedback, sharing classroom management, having daily planning time, and utilizing cooperative techniques.

Methods and In-service Needs

Teachers have identified several strategies to help them work with students with disabilities in the classroom. Richardson and Washburn (2006) conducted a Delphi study to identify techniques utilized by North Carolina agriculture teachers while working with students with special needs. The total panel of forty-five teachers identified strategies that they identified as being most beneficial for their students with disabilities. The most common techniques that were identified were modified or guided notes (fill in the blank or outline), IEP modifications, video or media related to the topic, providing students with notes to copy, vocabulary exercises, PowerPoint presentations, handouts, study guides, and read-aloud tests and assignments. A similar study conducted in British Columbia found many of the same

techniques being utilized by teachers. They also found that assignment modifications, visual aids, and writing strategies benefited the students with disabilities in their classroom (Boyer & Bandy, 1996). It should be noted that many of the teachers within this study identified strategies that are commonly recommended modifications found in student IEPs. While this is a positive demonstration that teachers are utilizing the information found in students IEPs, there should be additional research to determine what practices are most beneficial for students in agriculture. The strategies that teachers identified as being used most often are generally strategies that have been identified through educational research as being effective instructional strategies for learners with disabilities. A review of literature conducted by Scott, Vitale and Masten (1998) identified ninety-three instructional strategies found within special education research journals. Some of the most common research based strategies reported through this study used peers for tutoring and to provide additional assistance. The strategies identified also involved providing alternative materials, using manipulative and hands-on materials, varying materials and adjusting grades, assignments and goals to the students needs. A working knowledge of these strategies is not just essential for special education teachers. Cannon, Idol and West (2001), identified ninety-one different educational strategies through a Delphi study of 200 educational experts. Of the ninety-one strategies, over 80% of the strategies were considered essential for both special and regular education teachers. One additional problem encountered by Richardson and Washburn (2006) was that some teachers expressed concern about modifying curriculum because of the CTE accountability system in place within the state.

Differentiation

The concept of inclusion can be overwhelming for teachers. Inclusion, by definition, means that teachers will be responsible for educating a very broad range of learners. To be successful they should not focus on catering to every individual need. Instead, should try to create an environment that will be successful for all students, regardless of the students' abilities (Snell & Janney, 1993). In response to this need, many teachers have begun using differentiation within their classrooms. Differentiated instruction suggests that since there are many different learners in a classroom, the teacher should use many different levels of support within their classroom assignments (The Center for Comprehensive School Reform and Improvement, 2007). Differentiation is defined by McLeskey, Waldron, So, Swanson, and Loveland, T. (2001 p. 108) as a technique where teachers "create different levels of expectations for task completion within a level or unit". This method of instruction has two main goals. The first goal is to maximize grade level standards attainment, and the second goal is to provide adapted curriculum for students that need assistance. This is generally achieved by utilizing active learning, connecting the subject matter with student interest, and providing instruction that reaches multiple learning styles (Lawrence-Brown, 2004).

There are several different methods of differentiation but teachers can use the technique by modifying the materials used, the process used and/or the type of assessment. Materials can be varied by utilizing many different types of media in the classroom. Instead of just using one textbook, the teacher may provide additional textbooks at different levels, video, pictures and newspaper, or even audio books. When taking notes, teachers can provide note outlines, note copies, or additional handouts to help provide students with additional

support. By using different levels of materials, learners at all different levels can still understand the basic idea or objective that is being provided. Varying the process involves changing the way that some students may work toward learning the material. One technique would be to provide several different types of activities and allowing students to choose an activity. This allows learners to choose activities based on their interest or abilities. The teacher can also assign varying types of activities based on level of achievement or understanding. Lastly, the teacher can differentiate through the types of assessment they provide. While some students may do very well taking a test on paper, other students may need to take the test orally. This area is usually dictated by a student's IEP and may not need to be decided by the teacher (The Center for Comprehensive School Reform and Improvement, 2007). It should be mentioned that legally, students with disabilities cannot be given a separate assessment unless it is a modification within a student's IEP or if the student is enrolled in different educational program. However for students who are in a different educational program and who have alternative curricular objectives, it may be preferable to differentiate their evaluations from other students (Friend and Bursuck, 1999). These differentiation strategies can greatly benefit all students but especially students with disabilities. Since many students with disabilities are not successful in classrooms that use only traditional teaching techniques, this is a method that teachers can use when they are having difficulties adjusting their teaching to reach all learners in a diverse classroom (Broderick, Mehta-Parekh, & Reid, 2005)

It is important that professionals understand what skills and techniques agriculture educators need to work effectively with students with disabilities. Research conducted by

Buell, Hallam, Gamel-McCormick and Scheer's (1999) indicates that teachers felt most in need of additional education or in-service regarding program modifications, developing IEP's, managing student behavior, adapting curriculum and monitoring student progress. Crunkilton (1985) suggests that teacher education programs need to allow pre-service teachers to work more closely with students with special needs before and during their student teaching experience. Crunkilton also emphasized the need for undergraduates to have a thorough knowledge of needs, conditions, limitations and abilities that may be experienced in students with disabilities before they would be able to successfully work with students within this population. Based on the current research regarding teacher needs there must be an increased understanding of what agriculture teachers across the nation indicate is most important when working within this population.

Disabilities and the Agricultural Education Model

Agricultural education has a history of working with students with special needs. However, increased academic pressures may cause teachers to feel that they have to raise standards while some teachers even express concerns that their program has become a "dumping ground" for students who are not successful in other academic areas (Jewell, 1993). Because the Carl D. Perkins Vocational Education Act of 1984 gave financial priority to programs that served the highest number of students with disabilities, this act may have led to a trend of a disproportionate number of students with special needs being placed in CTE classrooms. This can be frustrating for some teachers who are unprepared to work with students with exceptionalities or those who have too many students to serve successfully. Students participation in CTE coursework can greatly impact their career development after

high school. According to Shapiro and Lentz (1991) students who have had training in specific career and technical education on average had better employment outcomes upon entering the workforce, even if their career was not involved in the career they studied. Agricultural education can be especially challenging since there is more to the program than just classroom teaching. The ideal classroom experience for all students should include classroom teaching and laboratory experience, FFA participation and an SAE project (National FFA Organization, 2002). The additional components of the program may also make it especially rewarding for students with special needs.

The Agriculture Classroom

Phillips and Dormody (1993) identified several strategies for teachers who work with students with disabilities in their classrooms. They first stressed that the goals for these students should be the same as regular education students. They also emphasized an increased need for improved access for classrooms, shops, and laboratories, as well as active teacher participation in IEP meetings. Additionally, they acknowledged that one advantage for agriculture teachers is that many of the distinguishing characteristics of agricultural education are also strategies that work best for students with disabilities. In particular, concrete, hands-on learning techniques such as many of the tasks found in horticulture programs are very beneficial for students with mental disabilities because it allows them to learn about the task in a different way. Some students with disabilities may be especially successful when they are able to learn by participating in hands-on activities. (Phillips & Dormody, 1993). To be successful, teachers will need to be willing to carefully observe their students, be supportive, and establish goals for these students, just as they would other

students in their program (Powers, 1993). One of the biggest challenges is that many agriculture teachers have not been taught how to successfully work with the diverse needs of disabilities. While working with students with disabilities can be challenging for any teachers, a study conducted by Dormody, Seevers, Andreasen and VanLeeuwen (1996) found that older, more experienced agriculture teachers and teachers who have taken more courses on special education may be more comfortable working with these students in their program. While experience may greatly benefit teachers, teacher preparation is also an important component. Ross (2006) found that beginning teachers in North Carolina generally described their pre-service program as not being adequate for preparing them to work with students with disabilities and reported limited participation in in-service programs related to special education. Despite the numerous challenges for implementing a quality agriculture program, a student's involvement in agricultural education allows them to learn the skills needed to gain employment and become more involved in agriculture (Baird, Craft & Martch, 1993).

Supervised Agricultural Experience Projects

Supervised Agricultural Experience (SAE) projects can be an opportunity for high school students to gain technical knowledge, show responsibility, learn record-keeping, and explore career interests. All of these benefits are an essential part of career and life skills that are emphasized in programs for learners with disabilities (Schwager & White, 1994). Opportunities such as placement SAE projects can also offer on-the-job training and possibly help place students in a career after high school (Moffitt, 2004). The flexibility of SAE projects allow them to be uniquely structured for each student's needs and goals. Most

traditional projects are possible with some modifications, though students with severe disabilities may need a modified SAE project that focuses on specific individual goals (Cooper, Bocksnick & Frick, 2002). In 1994, the National FFA Organization released a guide to helping advisors work with students with disabilities. In this guide they different agriculture programs were showcased that have successfully helped students with special needs develop high quality SAE projects. For example, a student who had less physical strength may be able to show smaller livestock, or a student with an orthopedic impairment may need special seating or facilities during livestock shows (National FFA Organization, 1996). Despite the numerous benefits of SAE projects, one study conducted by Schwager and White (1994) found that only 68% of students with special needs in Oklahoma participated in SAE projects. These researchers also found that these students seemed to gain more from SAE projects than students who do not have disabilities. They also reported that while most teachers realized the benefits of SAE for students, high quality projects may require additional planning or teacher supervision and parental support. These factors can make it difficult for teachers trying to establish SAE programs for their students.

FFA

Students with exceptionalities not only need educational and career support, but the FFA can provide social opportunities and self-esteem that can be very valuable for these individuals. “One area with which special needs students specifically struggle is self-esteem and independence. By encouraging these students to become part of the FFA, these obstacles become stepping-stones to a brighter future” (Cooper, Bocksnick & Frick, M., 2002, p 6). Because there are so many different CDEs, students can find areas where they excel instead

of focusing on their disability. FFA meetings and social events also give students an opportunity to learn social skills and create friendships (Cooper, et al, 2002).

The FFA advisor has the responsibility of ensuring FFA opportunities are available to all students. Getting students involved socially and helping them be involved in contests and activities is very important to student success. When taking students to contests, camps and conventions there may be additional planning that is required in order for some students to participate. Before taking students to activities it is suggested that teachers make sure that transportation, facilities, contest materials, and equipment are accessible and those conducting the event are aware of the students' needs. This planning can be overwhelming for some teachers but it is an important part of making programs accessible for students (Delks & Sillery, 1993). The FFA program is dedicated to the total individual and thus helps provide special social, emotional and vocational opportunities for individuals with special needs (Baird, et al, 1993). Also, because the FFA provides individual achievements and challenges along with competition, recreation and community involvement, students with special needs are able to become involved in a variety of ways (Mikloiche, 1980).

Summary

The current educational trends justify the additional resources and support that teachers must have in order to be effective within a diverse classroom. Educational programs, in-service curriculum, and collaboration must be increased for agriculture programs to continue to be successful. There is an understanding among many professionals that in order to continue to train teachers to be successful in agricultural education, we must focus on the needs of all learners within the classroom, the FFA program, and the SAE program.

CHAPTER III

METHODOLOGY

This descriptive research study used survey data to determine what strategies are used in agricultural education when working with students with special needs, to determine how effective teachers perceive these strategies to be, to determine total confidence when working with this population, and to identify predictors of teacher confidence.

Population and Sampling Procedure

The population of this study consisted of secondary agriculture teachers in the United States. A stratified random sampling technique was used to identify teacher inclusion within the study. The National Association for Agricultural Education (NAAE) divides the country into six different regions. From each of the six regions, a state was randomly selected. The states chosen to participate in the study were Washington, Texas, Iowa, Kentucky, Tennessee, and Delaware. Because of the large population difference between the states, a stratified random sampling method was then used to ensure that all states were appropriately represented in the sample [Table 3]. The sampling frame for the study was agriculture teacher directories provided by state staff within each of the selected states. This resulted in a total population size of 2610 teachers. A total sample size of 333 was selected according to Krejcie and Morgan (1970) for a 5% margin of error and a 95% level of confidence (1970).

Table 3

Population and Sampling Distribution

State	N	N
Washington	285	37
Iowa	244	30
Tennessee	309	40
Delaware	72	10
Kentucky	245	30
Texas	1494	186

Instrumentation

The instrument was created and implemented electronically using SurveyMonkey.com®. The instrument was divided into three parts. The first part of the instrument was a twelve item likert-type scale to determine teachers' levels of confidence related to agricultural education. Teachers were asked to rate their responses to the statements on a scale of strongly disagree, disagree, agree, or strongly agree. The statements were selected to determine specific perceptions among agricultural education teachers. Three negative statements were included in the section "I have difficulty evaluating students who have special needs", "I am concerned that I do not provide adequate instruction for students with special needs", and "I do not think that I can manage student behavior". These statements were reverse coded upon analysis. The respondents were also asked to rate their total confidence related to the inclusion of students with special needs within their

classrooms on a scale of one to ten with one being “not confident” and ten being “very confident” [See the instrument in Appendix A].

Section II of the instrument was based on earlier Delphi study research conducted by Richardson & Washburn (2006) that identified strategies employed by North Carolina agriculture teachers in serving students with mild to moderate learning disabilities.

Richardson’s study used three main research questions to identify what strategies were used to modify instruction for students with mild to moderate learning disabilities. Richardson identified different strategies for modifying curriculum, modifying instruction, and modifying the classroom lab environment. For the purpose of this study, just the final round responses regarding instructional strategies were included in the survey instrument. A total of twenty-six strategies were incorporated into section II of the instrument. These strategies were chosen for the research instrument because they were not only identified as being most used in agriculture education by a panel of experts, but the strategies were also confirmed through additional research as being effective strategies for students with special needs. The teachers were asked to identify how often they used each strategy with one of the following choices: “Never” (I have never used this strategy), “Rarely (this strategy is used, but only a few times each semester), “Occasionally” (this strategy is used only once or twice per month), Often (the strategy is used several times a month), “Regularly” (the strategy is used as often as possible as part of my method of teaching). The respondents were also asked to rate their opinion of the effectiveness of each strategy on a scale of one to ten with one being not effective and ten being very effective.

The third part of the instrument was designed to collect basic demographic data and information about specific educational experiences. Information collected included gender, age, years teaching, level of education, licensure information, previous courses taken related to students with disabilities, in-service opportunities, and whether the respondent has a friend or family member with a disability.

Validity and Reliability

Content and face validity was established using a panel of experts in the agricultural education field. Five individuals from different universities were selected based on their previous contributions to research working with students with disabilities in agricultural education. The individuals were sent a link to the instrument and were asked to comment on the content, structure and design of the instrument. Suggestions were incorporated into the instrument design and the instrument was then finalized to begin pilot testing.

The instrument was pilot tested on a random sample of teachers in North Carolina on September 15, 2008. An electronic invitation was sent to 196 teachers in North Carolina. A total of sixty-one teachers participated in the pilot test. Pilot data were analyzed using the Statistical Package for the Social Scientists (SPSS) 16. The confidence portion of the instrument from the pilot test was analyzed for reliability was calculated using Cronbachs coefficient alpha and yielded an alpha score of .86. After collecting and analyzing the responses for the actual research study sample the reliability was recalculated and an alpha score of .77 was obtained.

Data Collection

Data were collected during the fall and spring semesters of the 2008-2009 school year. A pre-letter was sent via e-mail to the selected sample participants on November 19, 2008 to inform them about the study. A second e-mail was sent on November 21, 2008 that contained more detailed information about the study and provided a link to the survey instrument. After four e-mail contacts, non-respondents were contacted by phone and asked to respond. Teachers who were no longer available were removed from the sample and replacements were randomly drawn. Two additional contacts were made via e-mail. A total of 207 surveys were collected for a total response rate of 62%. Eight surveys were considered unusable.

Twenty non-respondents were randomly selected and were then contacted by phone. They were asked selected questions from the survey instrument to determine whether there was a difference between respondents and non-respondents. Independent sample t-tests were calculated for each question. When comparing these two groups, there were no statistically significant differences between respondents and non-respondents in this sample. Therefore it was concluded that the results of this research were generalizable to the target population. This approach to controlling non-response error was chosen based on non-response error research conducted by Linder, Murphy and Briers (2001).

Analysis of Data

Data were collected and analyzed using the Statistical Package for Social Sciences (SPSS) 16. Descriptive statistics were used to describe the overall responses of the instrument. Multiple regression analysis was used to predict indicators of total confidence.

For objective one, “to identify if agriculture teachers are utilizing identified practices when working with students with special needs”, descriptive statistics were used to determine how many teachers were using identified strategies in their classrooms. For objective two, “to determine how often recognized strategies are being used by agriculture teachers” descriptive statistics were used to determine how often the recommended strategies were being used. A mean score was taken for each strategy and the results were listed in order from most used to least used. For objective three, “to determine what strategies teachers believe are effective for working with learners with special needs”, the items were ranked from most effective to least effective. To analyze objective four, the confidence levels of teachers when working with students with special needs in their classes, descriptive statistics were used to measure the average score on the confidence scale of one to ten from Part I of the survey. For the final objective, “to identify predictors of teacher confidence when working with students with special needs, a step-wise multiple regression analysis was used.

CHAPTER IV

FINDINGS

Demographics

Of the teachers that responded, the majority of respondents 63.3% were male. Teachers' ages ranged from twenty-two to sixty-three with a mean of 39.12 and a standard deviation of 11.91. Years of teaching experience ranged from one year to thirty-six years. The mean number of years teaching was 14.21 with a standard deviation of 10.72. Teachers were asked their current level of education and 52.8% responded that their current level of education was a bachelors degree. Additionally, 45.7% currently had their Master's degree and 1% had received a specialist or sixth year certificate. One teacher had earned a doctorate (.5%). The majority of teachers were traditionally certified (91.6%) and the remaining teachers were certified through lateral entry (8.4%) [Table 4].

The remaining demographic information was related to teachers' educational or personal experience while working with students in special education [Table 5]. A total of 58.8% of teachers reported that they had taken at least one class that contained a unit of instruction dedicated to teaching students with special needs, and 41.2% had taken a whole course related to special education. The average number of whole courses taken in special education was 2.68. Of the respondents, 73.9% had completed in-service through their school, school system, professional organization, or teacher conference related specifically to working with students with special needs, with a mean of 19.95 contact hours. The last question within the demographics section asked respondents whether they had a close friend or family member who had been identified as an individual with a disability. The respondents

indicated that 58.3% did have a close friend or family member who had been identified as a person with a disability, while 41.4% indicated that they did not.

Table 4

Demographics of Respondents

Characteristic	N	%
Gender		
Male	126	63.3
Female	73	36.7
Level of Education		
Bachelors	105	52.8
Masters	91	45.7
Specialist/Sixth year	2	1.0
Doctorate	1	.5
Certification		
Traditional	182	91.6
Lateral Entry	17	8.4

Table 5

Special Needs Experience of Respondents

	N	%
Taken a Course With a Unit of Instruction in Special Education		
Yes	117	58.8
No	82	41.2
Taken a Whole Course Related to Special Education		
Yes	82	41.2
No	117	58.8
Completed In-service Related to Special Education		
Yes	147	73.9
No	52	26.1
Have a Close Friend or Family Member with a Disability		
Yes	116	58.3
No	83	41.7

Findings Related to Objective One

Determine Whether Agriculture Teachers Are Utilizing Identified Practices When Working with Students with Special Needs

Based on the analyzed data, most of the practices identified by Richardson and Washburn are being used by teachers when working with students with disabilities. Of the twenty-six practices, six were identified as being used “often” to “regularly” (4.0 – 5.0), eighteen were identified as being used “occasionally” to “often” (3.0 – 4.0) and only two were identified as being used “rarely” to “occasionally” (2.0 – 3.0) [Table 6].

Findings Related to Objective Two

Determine How Often Recognized Strategies Are Being Used By Agriculture Teachers.

To determine how often recognized strategies are being used by agriculture teachers, the data were collected, averaged and ranked [Table 6]. For each strategy, teachers were asked to rate the use of that strategy using the scale: 1= Never (I have never used this strategy); 2= Rarely (This strategy is used, but only a few times each semester); 3= Occasionally (This strategy is used only once or twice per month); 4= Often (This strategy is used several times per month; and 5= Regularly (This strategy is used as often as possible as part of my method of teaching). Teachers described emphasizing hands on skills (M=4.42), providing modification based upon a students IEP (M=4.29), modifying testing (M=4.10), spending more time with those students during activities (M=4.09) not penalizing spelling errors (M=4.08) and strategically assigning partners or groups for work or projects (M=4.06) as the most used strategies. The strategies that were identified as being used the least were using a different rubric for students with special needs (M=2.91) and tutoring after school (M=2.54). Strategies that are specifically associated with differentiating education for students with special needs such as using fill-in-the blank notes and focusing on vocabulary were generally used least often by teachers, while more general teaching strategies such as emphasizing hands-on skills and following a student's IEP, were identified as being used more often.

Table 6

Use of Recommended Strategies by Agriculture Teachers

Recommended Practice	M	SD
Emphasize hands-on skills or activities	4.42	0.79
Read a students' IEP and provide those modifications	4.29	0.89
Modify testing (open notebook tests for students with learning disabilities, separate location, more time, etc)	4.10	0.94
Spend more time with them of watching then more closely during hands-on activities	4.09	0.84
Not penalizing spelling errors	4.08	1.23
Strategically assign partners or groups for work/projects	4.06	0.86
Give study guides for tests	3.93	1.08
Give students handouts that coordinate with lessons	3.88	0.87
Use of Power Points in class for notes or visuals	3.87	1.13
Use stories to illustrate a point in a lesson	3.86	1.08
Assign them tasks that focus on active learning rather than passive learning	3.85	0.83
Show videos and other visual media that relates to topics	3.84	0.87
Slow down to give more individualized instruction	3.72	0.87
Allow students with special needs to use a word bank for difficult vocabulary on tests (Plant identification tests, Tool identification tests, etc)	3.72	1.11
Keep special education teachers informed about what students should be learning in your class.	3.66	1.07
Allow tests or assignments to be read aloud to the student	3.62	1.16
Provide shorter assignments	3.44	0.93
Ask Special Education teachers to provide an overview of each student	3.41	1.30
Require a students to keep a notebook that is graded and checked for accuracy	3.40	1.43
Give students a rubric for the grading of performance items	3.33	1.35
Give students copies of notes from the teacher of other students	3.29	1.02
Use oral exams or presentations	3.26	1.06
Give students fill in the blank note guides or note outlines	3.21	1.07
Focus on vocabulary that may be difficult for them to understand (creating a word wall, worksheet, etc)	3.04	1.10
Use a different rubric/scoring guide for students with special needs on the same assignment other students complete	2.91	1.37
Tutor students after school	2.54	1.00

Note. Data is based on a five point likert-type scale (1= Never, 2= Rarely, 3= Occasionally, 4= Often, 5= Regularly).

Findings Related to Objective Three

Determine What Strategies Teachers Believe Are Effective Strategies for Working with Learners with Special Needs

Respondents were asked to rank the strategies on a scale of 1-10 with one being not effective and ten being very effective. For analysis purposes, strategies were classified as being “very effective” if the mean score fell between 8.0 and 10.0, “somewhat effective” if the mean fell between 5.0 and 8.0, “less effective” if the mean fell from 3.0 – 5.0 and “not effective” if the mean fell from 1.0 – 3.0. Teachers ranked “emphasizing hands-on skills” as being the most effective strategy when working with students with disabilities (M=9.40). They also identified spending more time with them or watching them more closely during hands-on activities (M=8.94), strategically assigning partners or groups for work/projects (M=8.61), modifying testing (M= 8.56), assigning tasks that focus on active learning rather than passive learning (M = 8.55), and not penalizing spelling errors (M=8.52) as the most effective practices [Table 7].

The strategies that were identified as being least effective were using different rubric/scoring guide for students with special needs on the same assignment other students complete (M=6.38), tutoring after school (M=6.53), giving students a rubric for the grading of performance items (M=6.82) and focusing on vocabulary that may be difficult for students to understand (M=6.82). When comparing effectiveness with use, there were some differences that emerged. Teachers generally identified strategies that allowed for extra support or interaction during class time as being more effective though they may not use

Table 7

Effectiveness of Recommended Strategies

Recommended Practice	M	SD
Emphasize hands-on skills or activities	9.40	1.68
Spend more time with them or watching them more closely during hands-on activities	8.94	1.62
Strategically assign partners or groups for work/projects	8.61	1.93
Modify testing (open notebook tests for students with learning disabilities, separate location, more time, etc)	8.56	2.04
Assign them tasks that focus on active learning rather than passive learning	8.55	1.84
Not penalizing spelling errors	8.52	2.30
Read a students' IEP and provide those modifications	8.38	2.28
Show videos and other visual media that relates to topics	8.30	1.91
Use stories to illustrate a point in a lesson	8.28	2.35
Give students handouts that coordinate with lessons	8.26	1.83
Allow students with special needs to use a word bank for difficult vocabulary on tests (Plant identification tests, Tool identification tests, etc)	8.20	2.34
Slow down to give more individualized instruction	8.19	1.90
Use of Power Points in class for notes or visuals	8.11	2.36
Give study guides for tests	8.04	2.22
Allow tests or assignments to be read aloud to the student	8.03	2.47
Provide shorter assignments	7.74	2.20
Keep special education teachers informed about what students should be learning in your class	7.54	2.47
Use oral exams or presentations	7.46	2.55
Ask Special Education teachers to provide an overview of each student	7.19	3.10
Give students fill in the blank note guides or note outlines	7.08	2.46
Give students copies of notes from the teacher of other students	7.04	2.41
Require a students to keep a notebook that is graded and checked for accuracy	7.01	3.16
Focus on vocabulary that may be difficult for them to understand (creating a word wall, worksheet, etc)	6.82	2.77
Give students a rubric for the grading of performance items	6.82	3.07
Tutor students after school	6.53	3.05
Use a different rubric/scoring guide for students with special needs on the same assignment other students complete	6.38	3.27

Note. Effectiveness was ranked on a scale of one to ten (1 = not effective and 10 = very effective)

these strategies regularly. For example, teachers felt that on average, providing fill-in-the-blank notes or note outlines was somewhat effective ($M = 7.08$) though they did not use this

Objective four of the research study analyzed teacher confidence levels when working with students with special needs who were in their classes. Teachers were given twelve different statements and asked to respond whether they strongly disagreed (=1), disagreed (=2), agreed (=3), or strongly agreed (=4) with the statement [Table 9]. In the instrument, three of the statements were negatively worded: “I do not think that I can manage behavior of students with special needs”, “I have difficulty evaluating students who have special needs”, and “I am concerned that I do not provide adequate instruction for students with special needs”. These statements were inversely coded after the data were collected. Teachers overall were very positive about their abilities to provide a positive classroom atmosphere ($M=3.39$). Teachers also generally agreed that they were capable of following the requirements found in special education legislation ($M=3.15$), involving students with disabilities in their local FFA chapter ($M=3.14$), managing the behavior of students ($M=3.13$), and modifying assignments or activities according to a students IEP ($M=3.11$). Of the twelve statements, teachers were least confident that their teacher training programs prepared them

Table 8

Rankings of Frequency of Use and Effectiveness of Special Needs Teaching Strategies

Recommended Practice	Frequency of Use	Effectiveness Rating
Emphasize hand-on skills or activities	1	1
Read a student's IEP and provide those modifications	2	7
Modify testing (e.g open notebook tests for students with learning disabilities, separate location, more time, etc	3	4
Spend more time with them of watching them more closely during hands-on activities	4	2
Not penalizing spelling errors	5	6
Strategically assign partners or groups for work/projects	6	3
Give study guides for tests	7	14
Give students handouts that coordinate with lessons	8	10
Use of Power Points in class for notes or visuals	9	13
Use stories to illustrate a point in a lesson	10	9
Assign them tasks that focus on active learning rather than passive learning	11	5
Show videos and other visual media that relates to topics	12	8
Allow students with special needs to use a word bank for difficult vocabulary on tests (Plant identification tests, Tool identification tests, etc)	13	11
Slow down to give more individualized instruction	14	12
Keep special education teachers informed about what students should be learning in your class	15	17
Allow tests or assignments to be read aloud to the student	16	15
Provide shorter assignments	17	16
Ask Special Education teachers to provide an overview of each student	18	19
Require a student to keep a notebook that is graded and checked for accuracy	19	22
Give students a rubric for the grading of performance items	20	24
Give students copies of notes from the teacher or other students	21	21
Use oral exams or presentations	22	18
Give students fill in the blank note guides or note outlines	23	20
Focus on vocabulary that may be difficult for them to understand (creating a word wall, worksheet, etc)	24	23
Use a different rubric/scoring guide for students with special needs on the same assignment that other students complete	25	26
Tutor students after school	26	25

Note. Data ranked from most used/effective (=1) to least used/effective (=26). Correlation obtained by using a spearman-rho correlation. $R = (.92)$, $p < .01$

Table 9

Confidence Levels of Teachers When Working With Student With Students with Special Needs

Statement	SD	D	A	SA	M
I can provide a positive classroom atmosphere for students with special needs	2%	3%	49.2%	45.7%	3.39
I am capable of following the requirements found in special education legislation	2%	13.1%	52.3%	31.7%	3.15
I am confident in my ability to involve students with disabilities in the local FFA chapter	1.0%	4.1%	75%	19.9%	3.14
I can manage behavior of students with special needs	2.6%	6.1%	67.3%	24.0%	3.13
I can modify assignments or activities according to a student's IEP	3%	11.6%	56.8%	28.6%	3.11
I provide Supervised Agricultural Experience (SAE) projects for students with special needs that are comparable to SAE programs for students without special needs	3.0%	16.7%	68.2%	12.1%	2.89
I can provide physical accommodations for students with special needs if needed	5%	19.6%	58.8%	16.6%	2.87
I provide adequate instruction for students with special needs	3%	24.1%	57.3%	14.6%	2.82
I can evaluate students who have special needs	2.5%	31.7%	52.8%	12.1%	2.75
I am comfortable working with students with any type of disability	6.1%	35.2%	49.5%	9.2%	2.62
I have received adequate education and training for working with students with special needs through in-service opportunities	10.6%	41.2%	40.2%	8%	2.46
I am confident that my teacher training program prepared me to work with students with disabilities	13.1%	40.2%	34.2%	11.6%	2.45

Note. Mean score calculated on a four point scale. (1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree).

to work with students with disabilities (M=2.45) and that they received adequate education and training through in-service opportunities (M=2.46)

To determine overall confidence, teachers were asked to rate their confidence when working with students with special needs on a scale of one to ten with one being “very low” and ten being “very high”. The minimum confidence score was a one and the highest score was a ten. The mean confidence score was 7.27 with a standard deviation of 1.69. This was used as a crosscheck to see if the twelve statement total confidence scores were similar to the teachers overall self-perceived rating.

Findings Related to Objective Five

Identify Predictors of Teacher Confidence When Working with Students with Special Needs

In order to identify predictors of total teacher confidence a multiple regression model was constructed. For better accuracy, negative statements were inversely coded and a total confidence score was calculated by adding the responses to each of the confidence statements to give respondents a total score. The minimum score on the total confidence scale possible was a twelve indicating a response of “strongly disagree” with each statement. The maximum total score possible was a forty-eight indicating a response of “strongly agree” for each of the statements. In order to determine the best predictive model, the dependent variable (total confidence score) was analyzed with selected demographic (gender, age, years of teaching experience, level of education, certification, taking an educational course that contained a unit of instruction dedicated to working with students with special needs, taking whole courses related to working with students with special needs, participating in in-service opportunities, and having a friend or family member with a disability).

Stepwise regression was used to determine the multiple regression model that best explained teacher confidence. The best fitting model consisted of three variables: participating in in-service opportunities related to special education, age, and having a friend or family member with a disability. This model had a total R^2 of .118 accounting for almost 12% of the total variance in predictors of total confidence (Table 10).

Table 10

Best Fitting Predictive Model for Total Confidence

Model	R	R Square	Adj R Square	Std Error
1	.219	.057	.051	4.41
2	.293	.086	.074	4.35
3	.342	.117	.099	4.29

Model 1 Factors: In-service,

Model 2 Factors: In-service, Age

Model 3 Factors: In-service, Age, Friend or Family Member with a Disability

Total teacher confidence as explained by in-service accounts for 5.7% of total model. When age was added an additional 2.9% of the variance was explained. When having a friend or family member with a disability was added to the model an additional 3.1% of the variance was explained.

The standardized beta coefficient for participating in in-service was .249, age was -.204 and having a friend or family member with a disability was .148 in the best fitting model, indicating that age was a negative predictor in the model (Table 11).

Table 11

Standardized Beta Coefficients of the Best Fitting Model

Model	Factors	B	SE B	β
1	In-service	2.47	.215	.239
2	In-service	2.93	.249	2.83
	Age	-.07	-.149	-.176
3	In-service	2.79	.249	.269
	Age	-.08	-.204	-.201
	Friend or Family Member with a Disability	1.64	.148	.179

P<.05

CHAPTER V

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

The purpose of this study was to identify which strategies agriculture teachers are using in their classrooms and how effective they perceive those strategies to be when working with students with special needs. A secondary purpose of this study was to determine the self-perceived confidence levels of agriculture teachers when working with students with special needs. This study also identified factors that may predict teacher confidence. Based on teacher efficacy research, efficacy can be determined by how confident teachers are in their ability to work with students effectively and having strategies available to them that will benefit their students that they can use (Cannon, Idol, and West, 1992).

The study involved 208 respondents from six states randomly selected from the NAAE regions. The selected states were Washington, Iowa, Texas, Kentucky, Tennessee and Delaware. The research participants were randomly selected from a stratified random sampling procedure. The conclusions and implications from the research data as well as the limitations, recommendations for future research and recommendations for the profession are contained within this chapter.

It should be noted that this research involves self-reporting of teachers when completing the survey instrument. With self-reporting, there is an increased risk of inflation or underrepresentation of what the teacher is actually doing within the classroom. While it is assumed that teachers answered the survey truthfully, there is always the risk that the information may have been distorted in some way.

Conclusions

Objective One

Identify if Agriculture Teachers Are Utilizing Identified Practices When Working with Students with Special Needs.

For objective one, it is concluded that teachers are using recommended practices as identified by Richardson and Washburn (2006). On average, all of the strategies were being used as part of a teacher's instructional practices, though some may only be used a few times each semester. It is positive news that teachers are indeed using all of these strategies or at least a collection of these strategies as part of their classroom instruction. However, there is one caution regarding the use of these strategies. While teachers reported using strategies such as "using a different rubric or scoring guide" a student's IEP must allow for the use of modified grading or evaluation in order for the teacher to provide them with an alternative evaluation. If a student's IEP does not allow for alternative evaluations then legally, a teacher cannot provide them with a modified rubric or assessment without also offering it to the rest of the class as well (Friend & Bursuck, 1999).

Objective Two

Determine How Often Recognized Strategies Are Being Used by Agriculture Teachers.

Teachers are providing hands-on opportunities for students, reading a student's IEP, modifying testing, spending more time with students and watching them more closely during hands-on activities, not penalizing spelling errors and strategically assigning partners or groups. Because of the nature of agriculture courses it is expected that teachers are using a large amount of hands-on learning activities in their classes. This makes agriculture courses

an ideal environment for the success of students with special needs (Phillips & Domody, 1993). While teachers are using these recommended strategies, they are less likely to use specific strategies such as separate rubrics, providing opportunities for guided notes or outlines and focusing on essential vocabulary. The lack of regular emphasis on vocabulary may be especially detrimental to students because agriculture contains unique vocabulary that is essential to content area knowledge. Students with learning disabilities may have additional problems with vocabulary acquisition and may need additional educational support (Bryant, Goodwin, Bryant & Higgins, 2003). These findings may suggest that teachers are using quality educational practices though they may not be aware of the benefits of using specific educational practices for students with special needs. The strategies that teachers identified as being used most often are also strategies that can be easily implemented with an entire class while strategies that are being used least often are strategies that may take more time to use for individual students such as designing separate rubrics, providing modified note sheets, and using individual tutoring sessions. This is similar to research found by Munson in 1986 as well as Bacon and Schultz in 1991. Both of these earlier studies suggest that teachers are more likely to implement educational strategies that can be easily implemented with any student rather than those that require excessive planning or changes in teaching practices. While it may be understandable that teachers are trying to make the most of their time by using strategies that can be easily implemented, some students may benefit more from strategies that are more involved and catered specifically to their needs. This may indicate a need to provide teachers with additional resources that and training on how to use these strategies effectively and make these strategies easier to implement within their classes.

Objective Three

Determine What Strategies Teachers Believe Are Effective Strategies for Working with Learners with Special Needs.

In regards to the effectiveness of these strategies, teachers scored most strategies relatively high on a ten-point scale. Teachers view hands-on skills, spending more time with students and monitoring them closely, strategically assigning partners or groups, modifying testing, assigning tasks that focus on active learning rather than passive learning and not penalizing spelling errors as the most effective strategies. Hands-on skills and active learning are generally characteristics of agricultural education classes and good teaching practices. Therefore, it seems logical that teachers would view these strategies as being most effective. The lowest mean score for any of the strategies was 6.38 on a ten point scale. This indicated that all strategies were identified as being "somewhat effective" to "very effective". The strategies that were ranked the least effective were the use of rubrics, tutoring and vocabulary instruction. It is surprising that teachers would view tutoring as a less effective strategy. For some students, individual one-on-one teaching may be an ideal way to gain a better understanding of the material. Because of the limits of this research, it is unclear why this method was ranked lower on the scale. School, FFA, and community commitments after school may have some impact on a teacher's lack of desire to tutor after school. It is possible that teachers may not understand how to effectively implement these strategies within their classrooms. Research by Whinnery, Fuchs & Fuchs (1991) found that strategies that teachers find effective are more likely to be implemented. However, what strategies teachers rate as being effective, may not be related to research based methods, but on teacher experience or

perceptions. It is therefore critical that teacher education programs provide teachers with strategies, why these strategies work, and how to use these strategies easily in the classroom when working with many different types of learners. This would allow them to determine what strategies they can use effectively and to help them to implement these strategies.

Objective Four

Determine the Perceived Confidence Levels of Teachers When Working with Students with Special Needs in Their Classes

Despite being less confident in some areas, teachers are very confident about their ability to provide a positive classroom atmosphere for students with special needs. This indicates a willingness to provide an atmosphere that will be beneficial for students with special needs in their classes regardless of their confidence in specific areas of special education. They are also agreed that they could follow special education legislation and modify assignments or activities according to students' IEPs. Because of accountability and legal issues involved in education, it is good that teachers generally feel confident in these areas. However, because of the importance of these issues, teacher education programs should work to make teachers as confident as possible in these areas. Teachers also agree that they can involve students in their local FFA chapter. Because of the unique social needs for some students with special needs this is a very positive response and another area that should be strengthened through educational programs.

Despite the strengths that teachers reported, the majority of respondents disagreed that their teacher training program prepared them to work with students with special needs and that they had received adequate in-service opportunities. This finding is similar to

previous research in the field. Roberts and Dyer (2003) found that Florida agricultural education teachers identified a need for quality in-service related to modifying lessons for students with special needs. Poor teacher preparation when working with students with special needs has been cited in several research studies. A synthesis of twenty-eight research studies analyzed by Scruggs and Mastropieri (1996) found that only 29.2% of general education teachers identified an adequate level of education or training from their pre-service programs. Similarly, Schumm and Vaughn (1995) conducted a synthesis of research over a five year period and found that general education teachers often identified a lack of preparation as a barrier to teaching students with disabilities. In order to prepare teachers, there may be an increased need to require additional coursework to provide teachers with more training. Dormody, et al (2006) found that the more courses New Mexico agriculture teachers took, the less challenged they felt when including special education students in their classroom. Teacher training programs should provide opportunities for teachers to be exposed to special education techniques that will help teachers become more confident in their abilities to educate all students. According to Gibson and Dembo (1984), teacher confidence is a significant part of teacher success. Based on this research study, teachers generally consider themselves to be very confident in their abilities. On a scale of one to ten, respondents averaged a 7.27. This may indicate that teachers are confident in what they are able to do within their classes even though they may not be fully aware of all of the educational strategies that benefit students and how to implement those strategies within their classroom.

Objective Five

Identify Predictors of Teacher Confidence When Working with Students with Special Needs.

Based on the stepwise multiple regression model, participating in in-service, age of the teacher, and having a friend or family member with a disability created the best fitting model for prediction of total teacher confidence. The total model accounted for nearly 12% of the variance in total teacher confidence. In-service and having a friend or family member with a disability were both positively associated with the predictor model. Both of these factors suggest that additional training opportunities should be provided in teacher education programs and for teachers currently in the field. Having a close friend or family member with a disability suggests a certain amount of familiarity with an individual with a disability and may give that teacher a better sense of how to work with other students with special needs. Kessell (2005) found that student teachers who had experience with a person with special needs prior to their student teaching experience showed higher knowledge scores on an exam that measured knowledge about special education disabilities and special education law though these results were not statistically significant. If this is the case, then teacher education programs should try to incorporate activities or experiences that allow teachers to work closely with students with disabilities to gain that understanding.

Age was the only negative factor in the model. According to this regression model, older agricultural education teachers may exhibit a lower total confidence when working with students with disabilities. This indicates that teacher training programs and in-service opportunities should focus on providing additional opportunities for older teachers to help them develop more confidence when working with these students in their classrooms.

Recommendations

Based on this research, several recommendations for practice can be made:

1. Teacher training programs should ensure that numerous opportunities are available to provide experience working with students with special needs. Developing courses that contain a unit of instruction related to special education and providing quality in-service and training opportunities should be emphasized within agricultural education programs since these factors contribute to the development of total teacher confidence.
2. Training should be provided to help teachers learn recommended strategies within the field and how these can be used effectively to benefit students with special needs. Teacher can also be trained to work with differentiated instruction techniques that would benefit all students within a mixed ability classroom.
3. In-service and training should be developed for older teachers within the field to help build total confidence when working with students with special needs.
4. Teachers should work to increase collaboration with special education teachers or other teachers within their field that are more experienced with working with students with special needs. This will help teachers learn additional strategies and techniques that they can use within their classrooms.

Based on this research, the following research recommendations can be made:

1. Additional research should be conducted to explore why teachers are less likely to use certain recommended strategies. It would be helpful to teacher training programs to

know if teachers are not using these strategies as often because they are not as familiar with them or if there are other factors involved.

2. While more commonplace in educational research, experimental research should be conducted to determine what practices are most affective in increasing student achievement for students with special needs within the agricultural education field.
3. While not addressed in this study, additional research should be conducted to determine if end of course testing significantly impacts agriculture teacher's perceptions of their total efficacy when working with students with special needs.

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APPENDICES

APPENDIX A

IRB APPROVAL LETTER

NC STATE UNIVERSITY

Sponsored Programs and
Regulatory Compliance
Campus Box 7514
2701 Sullivan Drive
Raleigh, NC 27695-7514

919.515.7200
919.515.7721 (fax)

From: Joseph Rabiega, IRB Coordinator
North Carolina State University
Institutional Review Board

Date: September 15, 2008

Project Title: Teaching Learners with Special Needs in the Agriculture Classroom

IRB#: 349-08-9

Dear Ms. Stair:

The research proposal named above has received administrative review and has been approved as exempt from the policy as outlined in the Code of Federal Regulations (Exemption: 46.101.b.2). Provided that the only participation of the subjects is as described in the proposal narrative, this project is exempt from further review.

NOTE:

1. This committee complies with requirements found in Title 45 part 46 of The Code of Federal Regulations. For NCSU projects, the Assurance Number is: FWA00003429.
2. Any changes to the research must be submitted and approved by the IRB prior to implementation.
3. If any unanticipated problems occur, they must be reported to the IRB office within 5 business days.

Please provide your faculty sponsor with a copy of this letter.

Sincerely,

Joseph Rabiega
NCSU IRB

APPENDIX B

PRE-LETTER E-MAIL TO PARTICIPANTS

Teaching Students with Special Needs in Agricultural Education

A few days from now, you will be receiving a request to fill out a brief survey for a research project that is currently being conducted in Agricultural and Extension Education at North Carolina State University.

The survey is in regards to strategies and confidence of teachers when working with students with special needs in their classrooms. You can help us understand what teachers are doing to help these students be successful in their classes and in your programs.

I am writing in advance to let you know that you will be receiving a survey at this same e-mail address. We would greatly appreciate it if you could take a few moments to complete it. By doing this you will be helping us gather the best information possible.

If you have any questions you can contact me directly at ksstair@ncsu.edu

Thank you,

Kristin Stair
North Carolina State University

Dr. Gary Moore
North Carolina State University

APPENDIX C
E-MAIL TO PARTICIPANTS

Teaching Students with Special Needs in Agricultural Education

Below is the link to the survey that you were notified about earlier this week. As teachers, we are always identifying new strategies and techniques to use in our classroom. Your help is needed to identify what strategies teachers are using in their classroom when working with students with special needs and how confident teachers are when working with these students. Your opinions will help us identify current trends in Agricultural Education and will help us understand how the profession can better help teachers in the field.

The survey results will be kept completely confidential and your contact information will only be kept to determine who has responded and will be deleted before the survey results are analyzed.

This is a busy time for teachers, but by filling out this survey, you can not only help the profession, but you will be entering to win a \$100.00 gift card to Walmart to spend any way you wish. One teacher will be selected to win the gift card and the drawing will be held when the survey is closed.

The survey can be found at <http://www.surveymonkey.com/s.aspx>.

Thank you so much for taking the time to complete this survey. Your responses are very important and your help is greatly appreciated!

Kristin Stair
North Carolina State University

Dr. Gary Moore
North Carolina State University

Please note: If you do not wish to be included in this research study you may opt out at any time by clicking on this link <http://www.surveymonkey.com/optout.aspx> .

APPENDIX D
SURVEY INSTRUMENT

1. Teaching Students with Special Needs in the Agriculture Classroom

In recent years, agriculture teachers have seen an increase in the number of students with special needs. In the following survey, we have asked several questions to determine what techniques you are using in your classrooms and your level of confidence while working with these individuals. This is a very important issue in Agriculture education and your help is greatly appreciated. This information may be used for teacher training, to improve courses and curricula and to address specific teacher needs. The survey should take approximately 15 minutes to complete.

For the purposes of this study "students with special needs" refers to students in your program who have an Individualized Education Plan (IEP).

1. INFORMED CONSENT FORM for RESEARCH

Please print a copy of this information and keep for your records.

**Kristin S. Stair, Principal Investigator
North Carolina State University**

**Dr. Gary Moore, Faculty Sponsor
North Carolina State University**

We need your input! We are conducting a research study to determine what strategies agriculture teachers are using when working with special needs students in their classes and how confident agriculture teachers are when working with these students.

Your participation in this study is voluntary. You have the right to be a part of this study and to choose not to participate or to stop participating at any time. The purpose of this study is to gain a better understanding of a certain topic or issue. You are not guaranteed any personal benefits from being in a study. Although this study poses no risks to you, you will find specific details in this consent form about the research in which you are being asked to participate. If you do not understand something in this form it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided for you. If at any time you have questions about your participation, do not hesitate to contact the researcher(s) named above.

If you agree to participate in this study, you are asked to complete the confidential survey instrument on-line. Your participation in this study allows the Department of Agricultural and Extension Education to develop new in-service training opportunities for teachers, and helps us design courses and curriculum to match the present and future needs of teachers in the field.

There is no appreciable risk to your participation in this study, your survey information will be kept strictly confidential. Data will be stored securely. No

reference will be made in oral or written reports which could link you to the study. Your information will only be tracked for response purposes. Your data will not be tied to your state or to your school. All identifying information will be deleted upon your completion of the survey. You will NOT be asked to write your name on the materials so that no one can match your identity to your answers.

If you have questions about the study or the procedures, you may contact the researcher, Kristin Stair or Dr. Gary Moore at Box 7607 Raleigh, NC 27695-7607 (919) 515-1756. If you feel that you have not been treated according to the descriptions in this form, or your rights as a participant have been violated during the course of this project, you may contact Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919) 515-4514, or Joe Rabiega, IRB Coordinator, Box 7514, NCSU Campus (919) 515-7515.

Consent To Participate

"I have read and understand the above information. I agree to participate in this study with the understanding that I may withdraw at any time."

Please print a copy of this page for your records.

- Yes, I agree to participate in the research study
- No, I will not participate

2. Experience with Students With Special Needs

1. Before moving on to the rest of the survey, please begin by stating whether you have had experience working with students with special needs.

I have experience teaching students with special needs in my classroom

Yes

No

3. Confidence when working with special needs students

1. Please select the choice that best represents your response for each of the following statements.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. I can provide a positive classroom atmosphere for students with special needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I am capable of following the requirements found in special education legislation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I can modify assignments or activities according to a student's IEP.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I am confident that my teacher training program prepared me to work with students with disabilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I have difficulty evaluating students who have special needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I am concerned that I do not provide adequate instruction for students with special needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I can provide physical accommodations for students with special needs if needed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I do not think that I can manage behavior of students with special needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I have received adequate education and training for working with students with special needs through in-service opportunities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I am comfortable working with students with any type of disability.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. I am confident in my ability to involve students with special needs in the local FFA chapter.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I provide Supervised Agricultural Experience (SAE) projects for students with special needs that are comparable to SAE programs for students without special needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. On a scale of 1-10 (1 being very low and 10 being very high) how confident are you when working with students with special needs in your classroom?

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

4. Teaching Strategies

1. For each strategy listed below please indicate how often you use the strategy and how effective you think that strategy is.

When considering your answers, it may be useful to refer to this scale:

Never - I have never used this strategy

Rarely - This strategy is used, but only a few times each semester

Occasionally - This strategy is used only once or twice per month

Often - The strategy is used several times a month.

Regularly - The strategy is used as often as possible as part of my method of teaching

	For each strategy listed below, please indicate how often you use the technique with students with special needs in your classes.	How effective on a scale of 1-10 (1 being not effective and 10 being very effective) do you think that this strategy is for working with students with special needs.
1. Give students fill in the blank note guides or note outlines	<input type="text"/>	<input type="text"/>
2. Read a student's IEP and provide those modifications	<input type="text"/>	<input type="text"/>
3. Show videos and other visual media that relate to topics	<input type="text"/>	<input type="text"/>
4. Give students copies of notes from teacher or other student	<input type="text"/>	<input type="text"/>
5. Focus on vocabulary that may be difficult for them to understand (creating a word wall, worksheet, etc)	<input type="text"/>	<input type="text"/>
6. Use of Power Points in class for notes or visuals	<input type="text"/>	<input type="text"/>
7. Spend more time with them or watching them more closely during hands-on activities	<input type="text"/>	<input type="text"/>
8. Give students handouts that coordinate with lessons	<input type="text"/>	<input type="text"/>
9. Give study guides for tests	<input type="text"/>	<input type="text"/>
10. Allow tests or assignments to be read aloud to the student.	<input type="text"/>	<input type="text"/>
11. Use oral exams or presentations	<input type="text"/>	<input type="text"/>

12. Not penalizing spelling errors	<input type="text"/>	<input type="text"/>
13. Allow students with special needs to use a word bank for difficult vocabulary on tests (Plant Identification tests, Tool Identification tests, etc.)	<input type="text"/>	<input type="text"/>
14. Modify testing (open notebook tests for learning disabled students. separate location, more time, etc)	<input type="text"/>	<input type="text"/>
15. Assign them tasks that focus on active learning rather than passive learning	<input type="text"/>	<input type="text"/>
16. Emphasize hands-on skills or activities	<input type="text"/>	<input type="text"/>
17. Provide shorter assignments	<input type="text"/>	<input type="text"/>
18. Use stories to illustrate a point in the lesson	<input type="text"/>	<input type="text"/>
19. Strategically assign partners or groups for work/projects	<input type="text"/>	<input type="text"/>
20. Tutor students after school	<input type="text"/>	<input type="text"/>
21. Give students a rubric for the grading of performance items	<input type="text"/>	<input type="text"/>
22. Keep Special Education teachers informed about what students should be learning in your class	<input type="text"/>	<input type="text"/>
23. Ask Special Education teachers to provide an overview of each student	<input type="text"/>	<input type="text"/>
24. Require student to keep a notebook that is graded and checked for accuracy	<input type="text"/>	<input type="text"/>
25. Slow down to give more individualized instruction	<input type="text"/>	<input type="text"/>
26. Use a different rubric/ scoring guide for students with special needs on the same assignment other students complete	<input type="text"/>	<input type="text"/>

5. Demographic Information

1. Gender

- Male
 Female

2. Age

3. Including this year, how many years have you taught?

4. Level of education

- Bachelors
 Masters
 Specialist / 6th Year Certificate
 Doctoral

5. Certification

- Traditional
 Lateral Entry

6. Have your educational courses included a section of time spent on working with students with special needs?

- Yes
 No

7. Have you taken one or more courses specifically related to teaching students with special needs? A course would be any number of credit hours taken at an institution of higher learning.

- Yes
 No

If yes, how many courses have you taken?

8. Have you participated in in-service opportunities related to teaching special needs students through your school, school system, professional organizations, teacher conferences, etc?

- Yes
 No

If yes, how many contact hours of in-service have you completed that directly related to working with special needs students?

9. Do you have a close friend or family member who has been classified as an individual with special needs?

Yes

No