AN EXPLORATION OF AGRICULTURAL EDUCATION AS AN EFFECTIVE TOOL FOR DEVELOPING STUDENTS WITH SPECIAL NEEDS

BY

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THESIS

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Abstract

There has been an increase in momentum of inclusive education in recent years (Giffing, Warnick, Tarpley, & Williams, 2010). In fact, several reports indicate that nearly one-fourth of secondary agriculture students have specific learning disabilities (Pense, Watson, & Wakefield, 2010). When one considers the ever-evolving rate that special education students are included in the secondary agriculture classroom, there is a continuing need to understand what these students are gaining from their experiences in the program including the learning environment and experiences offered to these students by secondary agriculture program as a whole.

Research was conducted through interviews and observations among two rural schools in Illinois in order to explore the perceptions of agriculture instructors, special education aides and students with special needs as to how the agriculture program is serving students with special needs. Interviews with teachers and special education aides are successfully integrating students with learning disabilities into the learning activities of the agriculture program. Furthermore, observations supported these perceptions in that the classrooms are well-equipped to handle students with learning disabilities and provide a stimulating learning environment. The major conclusion was that comprehensive secondary agriculture programs that utilize the classroom, supervised agricultural experience, and the FFA model, provide a positive learning environment for students with special needs.

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CHAPTER ONE: INTRODUCTION

Background

The typical education setting has changed drastically since 1975, when Congress passed the Education of All Handicapped Children Act, which is now known as the Individuals with Disabilities Education Act (IDEA) (Giffing et al., 2010). According to the National Center for Education Statistics, in the fall of 2008 approximately 95% of students with disabilities from the ages of 6-21 years of age were placed into regular school settings (USDE, 2011). The U.S. Department of Education (1994) reported that agricultural, career, and technical education schools largely had become institutions for special needs students (Elbert & Baggett, 2003). If students are being put into the agriculture classroom at alarming rate, then we need to provide strategies and adapt classrooms in order to mainstream inclusion students successfully.

Agricultural education provides the development of knowledge and skill sets necessary for students to be employed after high school in the workforce and/or prepare them for further education at the collegiate level (Elbert & Baggett, 2003). Education in agriculture is important for students with special needs in high school as they gain basic skills and practical hands-on knowledge that can be applied in many aspects of their lives including: daily tasks; coursework in college; and/or entry-level positions in the agricultural industry. Taking the knowledge and skill sets that were aimed at preparing students for the workforce and combining adjustments necessary to accommodate students with special needs, is crucial for educators to understand about the learning environment.

To gain a better understanding of how agricultural education impacts this particular population, there needs to be more exploration on the best practices in the agriculture classroom that develop the social and academic skills of students with special needs. Education in

agriculture provides opportunities for setting attainable goals through involvement of valuable experiences like FFA activities, career development events (CDEs) and also classroom instruction for many high school students, it becomes imperative to understand whether students with special needs are provided these same opportunities.

The basic core of a comprehensive secondary agricultural education program consists of classroom instruction, experiential learning through supervised experiences, and leadership development through participation in FFA activities (see Figure 1). Supervised Agricultural Experiences (SAEs) were implemented in 1942 as a response by the agricultural education community toward Dewey's effort to base education on the personal experiences of the learner (Dailey, Conroy, & Shelley-Tolbert, 2001). Providing an understanding for both the aspects of agricultural education and students with special needs is important due to the increasing placement of students with special needs in agriculture classes.

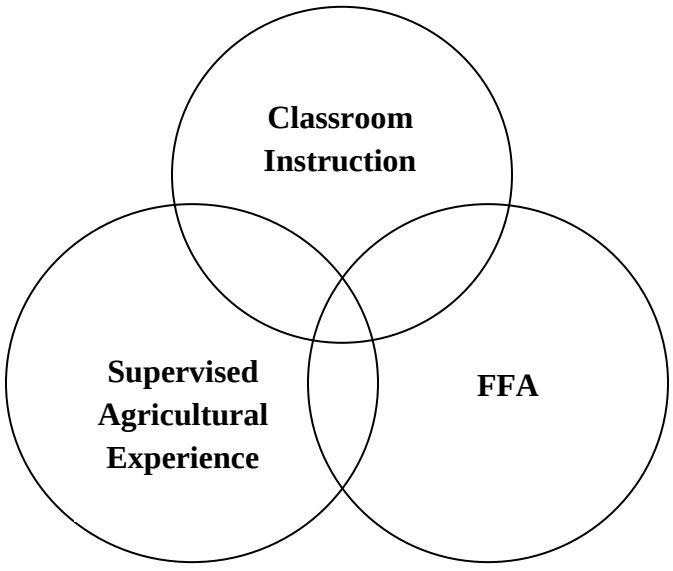

Figure 1. *Dominant model for organizing instruction in agricultural education.*

According to Hoerst and Whittington (2009) the successes most recently gained from integrating students with special needs into the agriculture classroom are attributed to interventions by experienced educators, modifications to the learning environment, professional development opportunities, and many other aspects associated with these achievements. Therefore, the increased awareness among current agriculture instructors and their desire to provide quality education for students with diverse educational needs are imperative to maintaining the value of secondary agriculture programs (Hoerst & Whittington, 2009).

Statement of Problem

The current status is that there is a growing inclusion of special needs students in the secondary agriculture classroom. The problem is multifaceted, in that many factors may limit the learning environment due to a lack of modifications made to agriculture programs. This also includes equipment necessary to help students with special needs adjust more appropriately to classroom settings, instruction tailored to fit the learning styles of these students, the ability of the agriculture instructor, and many other factors attributed to inclusion.

The problem in its simplest form is the lack of knowledge on how to effectively include students with special needs in agriculture classes for a positive, yet stimulating learning experience. A review of the current literature reveals a lack of empirical knowledge on what is actually gained from inclusion of students with special needs in the agriculture learning environment. Therefore, understanding the factors needed to impact this environment for developing knowledge and skills in these students is necessary for the future of agricultural education. To this end, the question remains do secondary agriculture classroom serves as an effective tool for developing students with special needs?

Purpose and Objectives

The purpose of this study is to acquire knowledge on the perceptions about the inclusion of students with special needs in agriculture classrooms as reported by agriculture instructors, special education aids, and students with special needs. This information will be useful in better preparing pre-service teachers in agricultural education for effective inclusion of students with special needs into agriculture classes. Also, this information will be a useful tool for illustrating why program funding for the agriculture classroom is important in today's educational setting. The following objectives guided this study:

1. Describe the key demographics of subjects (agriculture teacher, special education aide, and students with special needs) and the research sites.
2. Determine the perceptions of agriculture instructors of inclusion and development of social skills in students with special needs in the agriculture class.
3. Determine the perceptions of the special education aides on the social skills and development of social skills in students with special needs in the agriculture class.
4. Describe the perceptions of students with special needs on what learning has occurred in the agriculture class.

Definitions of Terms

Inclusion - The total integration of all students who have special needs – particularly those with disabilities – into the age appropriate, regular education classrooms of their community schools, regardless of the nature or degree of the needs involved. Special education and support services are provided within the regular education environment (Murphy, 1996).

Disability - Defined by the Individuals with Disabilities Education Act (IDEA) (1997), a child with a disability means mental retardation, hearing impairments (including deafness), speech or language impairments, visual impairments (including blindness), serious emotional disturbance, orthopedic impairments, autism, traumatic brain injury, other health impairments, or specific learning disabilities.

Agricultural Education - The discipline centered on preparing students in the five career lusters: agricultural business and management, agricultural mechanics and technology, horticulture services operations and management, agricultural sciences, and natural resources conservation management are designed to provide instruction that will provide the skill set for entry-level employment or a future of further education.

Comprehensive Agriculture Program – A program that utilize classroom instruction, FFA (The National FFA Organization), Supervised Agricultural Experience (SAE) to build community partnerships, plan and market the program, and provide professional and personal growth for students (Jenkins, Kitchel, & Hains, 2010).

Limitation of the Study

The first limitation of this study is the limited sample size; therefore, the findings can only be generalized to the participants of the study. The second limitation is the amount of time the investigator was able to spend on-site interviewing and observing the subjects. With a larger timeframe, the investigator could glean insights on the daily interactions of the subjects yielding richer data. However, this study in its current form, serves as a foundational piece for further research.

Basic Assumptions

It was assumed that participants were honest in their answers and that the observed classroom setting would be considered as a normal day of coursework and instruction. Also, it was assumed that students with special needs in the secondary agriculture classroom varied in degree of their abilities.

Significance

The implications of understanding the factors associated with developing the social desires of students with specials needs in the agricultural classroom are immense. With a better comprehension of the relationship between the agriculture class and the social development of students with special needs, modifications could be created that would help foster best practices for these students and the classrooms, professional development opportunities for educators, and possibly more funding for these programs. Due to more and more students being mainstreamed into the educational classroom, this topic could help tailor better instructional strategies utilized by educators for the purposes of influencing learning styles regardless of the student's ability.

CHAPTER TWO: THEORETICAL FRAMEWORK AND REVIEW OF LITERATURE

Reviewing the current literature for this expansive topic is beneficial for understanding and forming the basis for this qualitative study. Agricultural education was designed to provide better opportunities for all students who were interested in pursuing careers in agriculture (Dailey et al., 2001). Because agricultural education is made up of more than just classroom instruction, teachers must not only be prepared to provide resources and opportunities within the classroom, but also should work with students with disabilities in order to increase participation in FFA and Supervised Agricultural Experience (SAE) projects (Stair, Moore, Wilson, Croom, & Jayaraine, 2010). Therefore, the main factors that stem from the topic of inclusion in the agriculture classroom for students with special needs address the: demographic areas of agriculture classroom environment; concept of inclusion itself, modifications needed in the classroom, perceived self-efficacy of teachers; and concepts for redesigning the agriculture curriculum to meet the needs of students with special needs.

Most of the recent research that is directly related to identifying the importance of agriculture in the classroom for students with special need includes the context of understanding the important processes in which career and technical education should be involved in the preparation, implementation, and evaluation of the individual education programs (IEPs) (Andreasen, Seevers, Dormody, & VanLeeuwen, 2007). It is important that the instructor and other school and community-based personnel engage in a team effort in order to develop individual plans that will enable learners to succeed in meeting their career goals (Andreasen et al., 2007).

Inclusion of students with special needs in the agriculture classroom presents educators with an imperative task in order to identify the skills developed by special needs students by

inclusion among the agriculture classroom (Elbert & Baggett, 2003). Inclusion of students in the agriculture classroom is a tough adjustment to make especially with the modifications of the environment and the amount of services required for students with special needs (Aschenbrener, Garton, & Ross 2010).

Demographics

Today we see various ages, interests, level of ability, maturity and diverse backgrounds of students in the classroom setting. In the past, agriculture courses were not accessible to students with special needs (Elbert & Baggett, 2003). Changing student demographics in high school agriculture programs across the nation have increased the number of limited opportunity and special needs students enrolled in these programs (Andreasen et al., 2007). The number of students with identified learning disabilities in the United States greatly increased over the past 30+ years (Pense et al., 2010). Such dramatic increases indicate a growing need for innovative approaches to improving teaching and learning for secondary learning disabled students (Pense et al., 2010). Aschenbrener et al. (2010) report in their study that the growing number of students in agriculture classrooms is attributed to the diverse courses they offer to meet the different needs of students or due to the fact that legislation forcing these students to be included in these environments.

In 1975, Congress passed the Education of All Handicapped Children Act, now known as the Individuals with Disabilities Education Act (IDEA) (Giffing et al., 2010). IDEA is a law ensuring that states and public agencies provide early intervention, special education and related services to eligible infants, toddlers, children, and youth with disabilities in the least restrictive environment (Giffing et al., 2010). In many cases, the least restrictive environment is one that

involves placement of students with disabilities into educational programs with typical developing students to the maximum extent appropriate (Giffing et al., 2010).

According to "Condition of Education," a report published in 2007, 52% of students with disabilities spent 80% of their time in the general education classroom (USDE, 2011). Students served under IDEA now account for 14 percent of total number of students enrolled in public school (Hoerst & Whittington, 2009). This amounts to a total number of 6,713,000 students with disabilities, a number that has almost doubled in the past 30 years (Stair et al., 2010). Regardless of what the legislation or statistics entail, students with special needs must have a place to be creative, have enhanced learning opportunities as well as an environment that allows them to be inquisitive.

Never before has there been more accountability in American public schools for the academic performance of students with special needs. The education law of the No Child Left Behind Act (NCLB) of 2001, makes it clear that public schools will be held accountable for the same contracted percentages of students with disabilities, limited English proficiency, from other subgroups performing at or above level in academic subjects as other students. Therefore, the expectation that secondary agriculture instructors will contribute to the academic performance of their students, including their students with special needs, is at an unprecedented high (Dormody, Seevers, Andreasen, & VanLeeuwen, 2006).

Concept of Inclusion

If the curricular needs of students with learning disabilities in the agriculture classroom are not met, the agriculture industry risks losing 25% of the future workforce (Pense et al., 2010). This 25 % loss of future workforce in the agricultural industry is crucial especially when we witnessed the national unemployment rates reach all-time highs within the last several years

(Pense et al., 2010). Originally, agriculture courses were intended for non-college bound students, thus, preparing them to become employed shortly after attaining their high school diploma (Hoerst & Whittington, 2009). However, technical education would not be very accommodating to students with special needs when these agriculture courses were originally designed to gear their training toward agriculture. Over the years there have been many modifications made to the teaching environment with this type of task-oriented curriculum implemented and many more special needs students enrolling in technical education programs. Today, agriculture courses include many aspects of inclusive education for students with special needs abilities of student with special needs can arise from social, psychological, economic, linguistic, and cultural, as well as physical factors, which is why we see the term children with special needs rather than children with disabilities (Hoerst & Whittington, 2009).

According to the U.S. Department of Education (1994), students with special needs were found in an increasingly higher proportion in secondary agriculture courses than other technical education classes (Elbert & Baggett, 2003). Because the learning environments of technical education classrooms made it difficult for both students and teachers to handle, students can relate to secondary agriculture courses because they deal with many subject-areas where students can proceed into a learning environment that is conducive to their strengths.

Pense et al. (2010) confirm that training students with special needs is not a far stretch, as they are not normally low in their Intelligence Quotient (IQ). Pense (2009) quotes that inclusion is a philosophy that draws students, families, educators and schools together to foster an environment that incorporates acceptance, belonging and community. Therefore, the concept of "inclusion" a synergy may exist through the interactions of our students with learning disabilities and their non-disabled peers. When the non-disabled peers provide assistance and as service

learning projects become better developed, all students in the agricultural education classroom will benefit.

According to Pense et al. (2010) they found in their study that employing this inclusion strategy in the classroom helps establish an opportunity for students with learning disabilities to join a normal learning environment rather than not be accepted for their learning issues. In the past, agricultural education courses were not accessible to special needs students. They also describe the concept of "inclusion" in their research to imply that it is merely establishing a collaborative, supportive and nurturing community for learners in the endeavor of providing all of the services and accommodations each learner needs in order to maximize their learning. Other benefits of peer interaction between students with learning disabilities may include the development of leadership and citizenship skills (Pense, 2009).

Additionally, legislation has created inclusion and mainstreaming of special needs students into regular classrooms. This type of heterogeneous education has led to the agriculture teacher to encompass various techniques in their learning environment while teaching both types of students simultaneously. In this regard, it can be theorized that agricultural education teachers should be provided educational opportunities to learn and implement various teaching strategies and competencies for different types of students (Elbert & Baggett, 2003).

Inclusion of learners in the agriculture classroom environment is a daunting task to assume for educators and especially those just beginning their instructional careers. Inclusion of learners with special needs is not only mandated by law, but is also a civic and moral duty for teachers. Thus, the need exists to equip teachers with effective techniques for teaching learners in inclusive settings. Later on, concepts of professional development will be discussed. However, it bears mentioning that teacher preparation programs need to be aware of the

limitations and concerns of teachers who are currently serving learning with special needs (Hoerst & Whittington, 2009).

Modifications

Curriculum and modifications are a concern for teachers when including students with special needs in agricultural classrooms as it becomes costly and very few have had the appropriate training for dealing with these circumstances. The agriculture classroom is designed on these basic core elements: classroom instruction, experiential learning through supervised experiences and then also through leadership emphasized activities. These three-components are actualized through a well-designed integrated program that provides a context for learning, necessary content and the skill set to prepare students for adulthood (Dailey et al., 2001).

Much research suggests that classroom material and the environment setting will need to be taken into account and revised in order to meet the needs of these students. Pense et al. (2010) confirmed in their study that redesigned curriculum for agricultural education resulted in a positive difference in student knowledge attainment for students with special needs. As previously mentioned, much of technical education is not favorable to students with special needs as most learning environments are not properly equipped to handle these situations. So, activities involving mechanics or other aspects will need to be properly evaluated in order to reduce the risk of injury to students with special needs. These adaptations (curriculum, activities, modifications and services) for the student will make the environment for students with special needs less challenging, in order to properly develop the life skills they will later need.

According to Pense et al. (2010) they found that the major issues with the whole process of modifications was due to the aspects of curriculum redesign and the testing outcomes for students with special needs. Complex tasks and a wide variety of equipment may overwhelm

some students with special needs. Furthermore, students with special needs who enroll in career and technical education classes often experience similar challenges to student with special needs enrolled in "core" academic subjects. Therefore, taking this aspect into account, agriculture instructors must be prepared to provide appropriate lessons to students with special needs (Aschenbrener et al., 2010). Moreover, the individual needs are seen in an agriculture classroom when each student both learning disabled and traditional are able to select one of the various career pathways in order to pursue certain strengths they possess, rather than pushing them in specific directions (Pense et al., 2010). Now, it should be mentioned that some assistive technology opportunities provided to students with more specific learning disabilities would help assist the student in balancing specific tasks that are more challenging for them to endure.

As mentioned earlier, the modifications required for special needs students can become even more challenging in technical classes and as a result of this, special education teachers often have limited experience working in these more technical environments. This can make it challenging for them to assist instructors as well as the students. In addition, safety can be a concern in technical laboratory courses (Aschenbrener et al., 2010). Understanding the technical laboratory environments, including the mechanical courses of agriculture classes in which students might struggle with the most can be the key to the effectiveness of instruction. Accommodating diverse requirements of students with special needs will require extra effort. Ideally, every student should receive instruction tailored to his or her needs, abilities and learning styles (Kessell, Wingenbach, & Lawver, 2009).

Self-Efficacy among Teachers

Self-efficacy describes a person's confidence in his or her ability to accomplish tasks in a specific domain (Aschenbrener et al., 2010). So, as it is discussed in this context, this just simply

refers to the level of confidence a teacher holds in their ability to teach students with special needs and the amount of perceived success they have acquired while doing so. According to Stair et al. (2010) found that much research suggests that teachers in agriculture are unequipped 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 population. Ultimately, we want agricultural education instructors to feel comfortable building the skill set of youth; however, with a diverse group of learners this becomes an intimidating process to incorporate among the classroom.

Agricultural teachers perceive themselves as having low levels of ability in teaching students with learning disabilities (Giffing et al., 2010). These inequities can be associated to many aspects such as a lack of experience, support or materials and a feeling as though they need more training, and many other aspects. According to Giffing et al. (2010) found through their study that younger teachers need the proper professional development workshops to deal with collaboration between school officials. Also, generally older teachers indicate they possessed the necessary skills needed to include students with disabilities in classrooms. Several things can be generalized from research of self-efficacy among agriculture instructors. Teachers might possess the skills necessary to include students with special needs in the classroom with the more experience they acquire. In order to work with these special needs students class sizes should be lower and as teachers acquire more experience they learn how to manage behavioral problems more efficiently. Therefore, agriculture instructors need to be equipped with the resources and tools to handle all of these aspects in the learning environment.

In order for the mainstreaming effort to be successful, it is crucial that the combined thoughts and energies of special and regular educators do not counteract each other or work at

cross-purposes. This, in turn, requires cooperation, properly trained personnel, careful planning and appropriate attitudes (Giffing et al., 2010). According to Stair et al. (2010) indicate that by providing hands-on opportunities, being more precise in reading a student's IEP, modifying assessments, spending more time with observation of students with special needs while engaging in hands-on activities ultimately led to a more comfortable persona for both the teacher and the student. Due to a large majority of agriculture courses designed with hands-on activities, this makes this program an ideal environment in providing success for student with special needs. Active learning is generally a characteristic of agriculture classes and good teaching practices. Therefore, it seems logical that teachers would view these strategies as being the most effective (Stair et al., 2010).

Some research suggests that teachers who felt prepared to teach students with learning disabilities in agriculture classrooms, and who had spent time with an SLD student outside of the academic setting, were statistically more confident in teaching SLD students (Pense et al., 2010). Self-confidence and personal satisfaction has been shown to impact teaching of beginning agriculture teachers (Aschenbrener et al., 2010).

Legislation has created inclusion and mainstreaming special needs students into regular classrooms. This type of heterogeneous education has led to the agriculture teacher having to implement various techniques while teaching both types of students simultaneously. Therefore, it can be theorized that agriculture instructors should be providing educational training opportunities to learn and implement various teaching strategies and competencies for different types of students (Elbert & Baggett, 2003). Student teaching experiences are a valuable tool for gaining the knowledge and skills necessary to manage a classroom. If this is in fact true, the students teaching experiences should be designed to enhance pre-service teachers' skills and

abilities for educating all students. Greater emphasis must be place on the knowledge of inclusion strategies such as those found in special education issues and laws (Kessell et al., 2009).

Therefore, an increased awareness among current agriculture instructors and their desire to provide quality education for students with diverse educational needs are imperative to maintaining the value of agriculture programs. Although the responsibility for meeting the educational requirements of learners with special needs does not automatically fall to agricultural education, agriculture teachers must assume their share of this responsibility by providing programs for those who desire and can profit from instruction in agriculture (Hoerst & Whittington, 2009).

Conceptual Model for Curriculum Redesign

The framework for this study borrows from Pense et al. (2010) conceptual model of curriculum redesign for special needs students. This model focuses on four theoretical concepts: inclusions, student engagement, assistive technology and principles of curriculum redesign for the special need student (see Figure 2). Employing an inclusive strategy in the classroom invites special needs students to join society rather than feel ostracized due to the labeling of their specific learning issues (Pense et al., 2010). The conceptual model focuses on using the combination of students, families, educators and schools together to promote an environment that is welcoming for the students with special needs in the agriculture program.

This model illustrates several principles that influence inclusion which are: diversity, individual needs, reflective practice and collaboration. Diversity is achieved when special needs students are mainstreamed in the agriculture classroom with traditional students (Pense et al., 2010). The aspect of diversity includes the process of recognizing that students will bring

differences to the learning environment that can benefit all students in the classroom. Individual needs are often a complex concept to understand because not only do they refer to the learning needs of each student, but also are attributed to students pursuing strengths when students are allowed to select one of the various career pathways (Pense et al., 2010). Reflective practice is where teachers must develop competency of working with special needs students (Dormody et al., 2006).

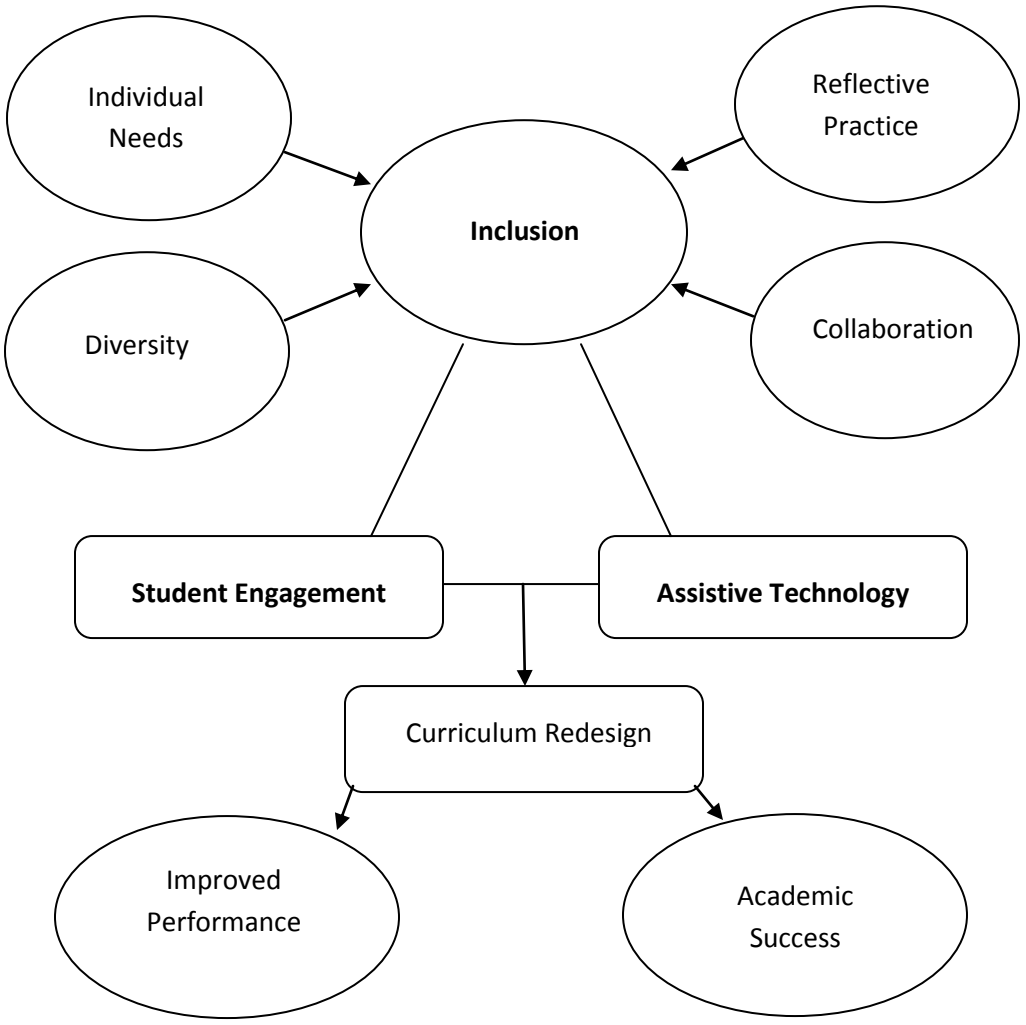

Figure 2. *Conceptual model of curriculum redesign for special needs students.*

Collaboration involves the teacher, parent, specialists and community working together to understand the interaction process of the special needs student. The student engagement portion

of the model is a focus on the amount of student motivation that is taking place and also any strategies to help increase engaging tasks and activities in the curriculum (Pense et al., 2010). A concept for generating flow by balancing skill challenge for special needs students is created by the assistive technology that helps provide the accommodations needed by special needs students. The process helps deliver information while students complete tasks more efficiently and independently (Pense et al., 2010).

Finally the last component of this model illustrates the concept of curriculum redesign. Curriculum redesign uses effective principles like: selecting the big ideas or concepts that facilitate knowledge, teaching steps in sequence that are simple, relating old and new knowledge, and presenting learning opportunities repeatedly that are monitored (Pense et al., 2010).

CHAPTER THREE: METHODOLOGY

Research Design

This qualitative study utilized a case study approach. The reason for having chosen a case study approach is the ability to compare and contrast two different schools using data collected from interviews and observations, providing a more detailed view of the participants lived experiences. A case study focuses on a single unit, in order to develop a detailed description and understanding about the problem using multiple methods including interviews and observations. This type of design method can only be generalized towards the two schools described in the study. To ensure content validity and check for researcher bias all materials presented for this study were reviewed by several teacher educators belonging to the University of Illinois, Agricultural Education Department. A similar study by Davis, Akers, Doerfert, McGregor and Keith (2005) also employed a comparable design method.

Population and Sampling Procedures

The population studied was secondary agriculture programs in Illinois. The sample was two school agriculture programs in rural areas. The subjects involved in these classrooms were secondary agriculture instructors, special education aides and also students with special needs. Each location was observed based on students with special needs who have been placed in various courses offered in the agriculture classroom. As levels of disabilities among these students varied, concepts like: student perception, teaching strategies, modifications, and assistance for students were studied to assess if there was any correlation to these factors developing the social skills of students with special needs in the agriculture classroom.

Instrumentation

A researcher-designed interview protocol containing around 20 items per protocol were used to collect responses from interviewees. A separate interview protocol was used for the agricultural education instructors, the special education aides and the students with special needs (see Appendix A). A panel of experts consisting of professors looked over the questions for face and content validity. Changes were made according to the feedback of the panel. Questions assessed the perceptions of the agricultural instructor, the special education aide and then the student with special needs. Questioning for the teacher assessed the perceived barriers or limitations for students with special needs in the agriculture classroom. The responses were confirmed with each individual prior to each question. Observation of the classroom environment included: organization of materials, figures displayed and used to help students understand subject specific concepts, technology, and classroom layout (see Appendix B).

Data Collection and Analysis

Data were collected using an interview protocol that included both close and open-ended questions. The interviews were performed with students with special needs, agriculture instructor and the special education aide over one day per location to accurately assess the classroom environment and interview participants.

Qualitative data for objective one were analyzed by the responses from the performed interviews, which were audio recorded. Each question remained consistent among the individuals surveyed in the study. Therefore, this allowed the researcher to draw on similarities or differences in order to process them quickly.

The analysis of data collected for all other objectives consisted of identifying responses that fell into the three major themes of trends of inclusion of students with special needs, any

perceived barriers or benefits the educator might witness in the classroom, and the limitations of involvement of students with special needs in the agriculture classroom. Data were also recorded from interviews agriculture instructors and special education aides, in the development of: classroom materials for students with special needs, teaching strategies, assisting students with special needs and also through indicating what classroom experiences work best for students with special needs.

CHAPTER FOUR: FINDINGS

Objective 1

Research objective one describes the key demographic characteristics of the subjects and the research sites. Two schools were selected for this study with each school selecting two students with learning disabilities to interview. Each high school site serviced grades 9 through 12, was on an eight-block period schedule on an 18-week semester, and was located in a rural setting. The student population for School 1 was 298 and for School 2 was 473 students. The representation of students with special needs at each site was 31 and 15 IEPs respectively. In addition, School 1 had one agriculture instructor, while School 2 had two instructors. Instructor one at School 2 deals with more students with special needs than instructor two, so the study concentrated on his experiences only. The experience levels of both instructors interviewed at the two schools was 8 years and 23 years respectively. The aide at School 1, with several years of experience, concludes that their main responsibilities in assisting the student with special needs in the agricultural education classroom is with note taking, understanding the directions on assignments and managing their behavioral problems. School 2 provides two special education aides in the agricultural education program. These two special education aides range in years of experience and experience assisting students with special needs in the agriculture program. Both deal mainly with assisting students in note-taking, test-taking and understanding directions on assignments and projects. Although there are two, only one was selected for the interviewing process.

When looking at the number of students with special needs enrolled in the agriculture program, School 1 reported that 34% of the students had special needs, while School 2 reported 10%. Both schools indicated students on different spectrums of learning as disabilities present are currently seen at a higher rate of males with special needs than females, but also learning occurs in both lower functioning and high functioning abilities. Disabilities of students enrolled

in the agriculture classrooms ranged from behavioral issues, attention deficit hyperactivity disorder (ADHD) to students with autism. Both students at School 2 struggle with memorization among other things in the classroom, while students at School 1 struggle more with behavioral aspects.

Table 1

Demographic Information on the Two Schools Used in the Study

	Study Sites	
	School 1	**School 2**
Student Population	296	420
Number of Students in the Ag Program	92	145
Number of Students with IEPs	31	15
Number of Ag Instructors	1	2

Instructional tools available at School 1 were a SMART board, stations for student learning, as well as tables and chairs for accommodation for students with special needs. The learning environment of this school was centered on hands-on and problem-based learning. This environment maintains structure for maintaining and preventing behavior problems. The learning environment of School 2 is much like research site one in regards to the classroom technology and setup of the classroom setting. Organization is a focus in School 2's classroom, using boxes for students to keep projects together throughout the year. Students had organizational binders for classes and also subject resources on the shelf to glance at if needed. Although School 1 illustrated a mixed assortment of leadership quotes around the classroom, there were more concept charts on the walls for students to reference. Another observation made

of School 2 is that students constantly have visual reminders displayed to comprehend what activities or events were coming up. School 1 did not provide any visual reminders about the activities or events coming up.

Objective 2

Research objective two was to determine the perceptions of agriculture instructors of inclusion and development of social skills in students with special needs in the agriculture classroom. Findings were categorized into three themes: 1) trends of inclusion; 2) perceived barriers or benefits of inclusion; and 3) limitations of involvement of students with special needs.

Trends of inclusion. Both instructors have managed the inclusion of students with special needs in the classroom every year since they began teaching. The instructor in School 1 reported an increase in students with special needs being placed in her class, while the instructor in School 2 reported a stable number. In addition, there was a report of certain classes that are more successful with the inclusion of students with special needs and therefore a likely to have more students placed in them.

- The instructor from School 1 states, "This year has indicated the highest number of incidents of children with special needs being included in my classroom, I have managed special needs students in my classroom every year since I started teaching."
- The instructor from School 2 indicates that "I have been teaching students with special needs in my classroom ever since I first started my teaching career. In my years of experience students often repeat classes because the science classes may be too difficult for the students to handle."
- According to the instructor at School 2, "The classes that often work the best at this location for inclusion of special needs students are: horticulture, introduction to

agriculture and ag mechanics courses. Students in these classes attain more learning reinforcement as these are driven more towards activities where students can be involved in the application."

Perceived benefits and barriers. The support system contributes to the flow of the classroom atmosphere at both School 1 and School 2 as indicated by the agriculture instructors. Special education aides are a vital tool in the agriculture program, due mainly to their assistance to special needs students so that classroom instruction is not stopped for other students. Technology and equipment in the agriculture classroom provides a primary component of creating a positive learning environment for special needs students in both School 1 and School 2. The SMART board is a great tool designed to allow students to become interactive.

The agriculture programs at both School 1 and School 2 have been tailored to make learning accommodations for each student both traditional and non-traditional. Inclusion of students with special needs in the agriculture program provides a different perspective given the setting. Agriculture instructors from School 1 and School 2 conclude that students provide a different perspective to everything in the learning environment and this often leads to the development of critical thinking skills needed later in life. Often the teaching strategies of School 1 normally fall into the realm of being more problem-based and hands on. This is where courses like horticulture work well for students with special needs because it is mainly applying the skills and interests they may possess. Events like career development events (CDEs) and supervised agricultural experiences (SAEs) provide an opportunity for these students to pick an area that they possess a strength along with hands on learning in order to positively develop skills and interests.

As the instructors provided insight on the benefits received through the agriculture program, they also face some barriers in their profession of teaching. The instructor of School 1 indicates that the pace of the class is slowed down due to the inclusion of students with special needs. Also, another barrier reported by instructor at School 1 is that sometimes it is easy to feel let down by these students when they don't understand or comprehend the material. The instructor at School 2 indicates that planning takes a lot of time to make sure that modifications are made appropriately for each student. Sometimes the pace is a problem for students with special needs in the agriculture classroom, so instructors take the time to go back over the concepts for the inclusion students.

Table 2

Instructors' Perceived Benefits and Barriers

School 1 Instructor	School 2 Instructor
Support team is what makes the classes work.	Having aides help.
It (inclusion) slows down the pace of the class.	Using the START System helps.
Hard to incorporate all teaching strategies.	Traditional students have been very willing to help out other students.
Feels let down when students don't get it.	Getting students involved in hands-on activities help.
Having experience being a good educator helps.	Planning different teaching strategies to accommodate all students is often tough.
	The pace of comprehending the various subjects of agriculture is relatively fast, so sometimes it requires for the instructor to re-visit the material for inclusion students.

Limitations of involvement. The major limitation gleaned from the interview with the agriculture instructors is a lack of time. Both instructors expressed a lack of time to plan lessons that meet the specific needs of the students as well as lack of time to actually teach the students. The pace needed to help the students truly understand the concepts is not possible and consequently students with special needs are only able to learn some of the content. Both instructors state that students are always welcomed into the program; however, there are limitations to full inclusion into certain courses and when these limitations are encountered, patience and collaboration is important. Table 3 provides the instructors' responses concerning the limitation of involvement.

Table 3

Instructor Comments on Limitations to Involvement

School 1 Instructor	School 2 Instructor
Having extra-long times helps.	Must have patience and understanding of specific disabilities.
Every student needs something different (activities).	Have to have the time to plan lessons for students with special needs.
SAEs are a good way to get students involved.	
Limited models of agriculture at home to support concepts like SAEs.	

Objective 3

Research objective three was to determine the perceptions of the special education aides on the social skills and development of students with special needs in the agricultural classroom. The agricultural education classroom is the main environment in accommodating students with special needs and this aspect is fully addressed at School 1. Factors in making the classroom functional are a combination of technology and the setup of the environment. If these two aspects are addressed, then the special education aides feel like they can concentrate on assisting the students adapt to the classroom, instead of adapting the classroom to the student.

Trends of inclusion. As for the trends of inclusion in the agriculture program, adaptation is needed for students with special needs in this learning environment. Both schools primarily focus on provided the modifications necessary to the inclusion student with the least restrictive environment. In doing so, as illustrated in Table 4 assistance that is provided from the aide in the classroom is not solely limited on the student with special needs. Instead, aides at the two locations provide assistance to all students. The agriculture program has been a common

ground for inclusion of students with special needs into its program among both locations. Aides feel like students are able to develop a better understanding of basic science concepts when compared to other courses in the secondary system.

Table 4

Special Education Aide Comments on the Trends of Inclusion.

School 1 Instructor	School 2 Instructor
Assistance is not just provided to student students with special needs from the aide, instead it is normally provided to all (inclusion and traditional) students.	Students with special needs are becoming more and more prevalent in this setting mainly because they relate more in this setting. develop a better understanding of the science concepts discussed in this learning environment.

Perceived benefits and barriers. The positive advantages reported from the special education aide of School 1 include that students with special needs, to some degree, have improved their social skills in the agricultural education classroom, which is attributed to the group activity that is implemented and the willingness of traditional students to help out. The primary focus of School 1 is driven more towards hands on and applied activities and has also influenced better focus strategies of the special needs student mainly due to their interests in the subjects. From School 1, the special education aide reports that students with special needs should be encouraged to be involved in agricultural education courses attributed to the fact that students in this learning environment are constantly learning life skills. Table 5 demonstrates that the special education aide at School 1 indicates that the environment is accessible to students with special needs because the instructor is confident in working with these students in the agricultural education classroom.

Table 5

Special Education Aide Comments on the Perceived Benefits and Barriers.

School 1 Instructor	School 2 Instructor
The classroom is easily accessible to students and the aide to work together.	Assistance provided to the students with special needs in the agriculture classroom is coordinate depending on the day and lesson instructed in the class. Most support involves assistance in note-taking, reading directions, taking exams and working on assignments.
The instructor is confident and qualified in assisting students with special needs in the agriculture program, so the students adapt well in this environment.	The skills developed for the students with special needs from the agricultural program are beneficial because they have the opportunity to be a part of competitions and to pursue person goals.

Strategic planning takes place with the agriculture instructor at School 2 to ensure that each student is not struggling with the concepts. A majority of learning takes place outside of the classroom because the regular classroom environment tends to overwhelm special needs students. Handouts of material are available to the aides and students to reference in preparation for tests or even assignments.

Both School 1 and School 2 imply that they believe the agriculture classroom is important because it gives them a taste of the world besides book work, allows them the opportunity to work with peers, and gets them involved in doing hands on activities along with field trips.

Limitations of involvement. Limitations of involvement witnessed from both schools special education aides are closely related to assignments. The more detailed the assignments or projects are, the more the students with special needs struggle with adapting to this in the agricultural classroom. Also, students in the agriculture classroom tend to struggle with adapting

to the environment, often they feel overwhelmed and the pace of the environment is a bit too fast for them to keep up with them. But, the students in these environments work together and look to each other for help which is nice in providing a friendly atmosphere.

- The special education aide of School 2 believes that, "some of the limitations seen for students with special needs in the agriculture classroom is overwhelming at first for them to figure out where they fit in at and how they can keep up with the fast pace of the learning environment."
- Also, the special education aide at School 2 says that, " integrating students with special needs into classes with traditional students helps to reduce this sense of being overwhelmed for the students and they all work together to help each other out."
- The special education aide at School 1 reports that, "students with special needs have a strong relationship with other students which makes the classroom work together."

Objective Four

Trends of inclusion. Research objective four was studied the perceptions of students with special needs on what learning has occurred in the agriculture classroom. The two students selected for this study from School 1 have previously taken classes in the agricultural program. Both subjects are very active in class, but do experience some limitations. The locations prove to be a comfortable atmosphere for these students as the instructor is willing to provide accommodations for them. Also, students are involved in all different aspects including CDEs, FFA and SAEs in gaining valuable experience.

- School 1 students imply, "the setting is comfortable to be involved in due to the willingness of help from other students and also accommodations the instructor provides for them."

- One student of School 1 say's he is, "very active in CDEs, FFA and also record-keeping."
- One student at School 2 reports that, "I get to sell meat sticks and keep records on them for my SAE."

Horticulture and environmental science are among some of the classes these students have taken that allow for the greatest amount of hands on learning. School 2, proved to be a different spectrum of students with special needs incorporated into the agriculture classroom. Their disabilities were more closely associated towards emotional needs. These students have been more involved in classes like introduction to agriculture, ag science, horticulture and ag management.

Perceived benefits and barriers. There are many benefits of being involved in the agriculture program. One of those aspects is the hands on aspect of experiencing it for themselves. But, with this there are some barriers that students with special needs face. A barrier indicated by these students is the concepts are too technical for them to understand and students feel like the pace of course instruction is too fast for them to keep up with.

Table 6

Student Comments on the Perceived Benefits and Barriers.

School 1 Instructor	School 2 Instructor
Enjoy hands on aspect of agriculture program	Are able to learn some problem-solving and social skills.
Have the opportunity to open up to others by being involved in events and activities.	Are able to be a part of CDEs, proficiency areas and FFA, which is great to see people.
The pace gets a little too fast at times.	Sometimes the concepts are more technical for them to understand.

Limitations of involvement. Even though the agriculture classroom is accommodating to students with special needs, there are some limitations of involvement for these students. The classroom environment depicts the setting which should be comfortable for these students to learn in. In order to create a positive learning environment, we expect for student teachers to also be comfortable with the concepts just as the agriculture instructors are. But, at one location there is a struggle for the students to learn from the information instructed by the student teacher, because they feel like she's not as comfortable with the concepts like the instructors are. Also, concepts of animal science are hard for students with special needs to recall on due to the complexity of the information, so this makes it difficult for them to retain much information about this subject.

- One student at School 2 confirms that, "the struggle for them has been in regards to the student teacher not being familiar with the concepts discussed during the instruction."

- One student at School 1 reports that, “the subject related the concepts like animal reproduction are somewhat of a difficult task for them to handle.”

CHAPTER FIVE: CONCLUSIONS

The results of objective one for defining the demographic characteristics of the subject group revealed major similarities and differences among the two school sites selected for this study. In terms of the gender that makes up a large majority of the agriculture program, this consisted predominantly of males at both locations. Although this was found to be the case at both locations, there is no literature that supports this growing statistic. Both locations operate on an eight-block schedule in grades 9-12 in a rural setting. The smaller school with 92 students in the agriculture program, 34% of the students enrolled in this program contains some form of IEPs. While the larger school contained 145 students in their program, about 10% of the students enrolled in this program contain some form of IEPs. The schools chosen for this study ranged in size from 292 to 420 students.

The types of programs also varied to some degree. Although both were in a rural setting, one site has one instructor and the other has two. Having two teachers may open up the opportunities for students and, in theory, improve instruction because instructors could work with the courses and content in which they are most knowledgeable. Literature does not discuss much about this aspect, but could be supported from a curriculum redesign as illustrated in Pense, Watson and Wakefield's (2010) conceptual model, as agriculture instructors are using integration and strategies associated with their strength areas to help promote the best learning opportunities based on the content area they are most comfortable with.

The experience of the teachers described in this study ranged from eight years to 23 years. As indicated by the framework for this study, teachers need to be confident in their abilities to provide an appropriate and challenging education for all students, with an understanding of (IEPs) (Pense et al., 2010). So, as teachers acquire more experience in

educating students with special needs, they learn how to adapt their methods of teaching over time. Both educators have dealt with the inclusion of special needs students in the agricultural education program since their employment began.

According to the framework, the learning environment is an important factor of a child's education. School 1 illustrated a learning environment that is collaborative. The findings showed that the instructors worked closely with parents, administration, specialists and others on issues that provide a positive atmosphere for special needs students to thrive in this location. School 1 focuses on many aspects as demonstrated in the Pense et al. (2010) conceptual model so that students with special needs have hands on opportunities for learning to occur. The overall learning environments of the two research sites were closely related. Each is well equipped with technology accommodating all learning differences, as assistive technology allows students to use these aspects of interaction as a way of having something more visual which helps students see the "big picture" concepts. Also, another fundamental contribution to the learning environment is the setup of tables and chairs in the classroom. An open format of long tables with chairs always incorporated in these classrooms allows for students with physical impairments to be accommodated without any adjustments made to the classroom set-up. Interactive technology aids are utilized to get students motivated for learning, along with ways they can participate in this environment. School 1 did not emphasize much curriculum redesign in the aspects of testing or assignments that were proven to be different from traditional students, but did include modifications for the way they assess students in their ability to complete assignments or projects.

The perceptions of agriculture teachers for the inclusion of students with special needs in the agriculture classroom disclosed major similarities between the two research sites. Another

important aspect revealed from this objective that instructors of both research sites confirmed that they have a tremendous support system in which they work together with school administrators in order to provide a positive learning environment for students with special needs to be successful. The relationship they have among their school district allows them the opportunity to acquire the equipment and technology necessary to modify the environment to accommodate students with special needs. This is an area that is well-supported by Pense et al. (2010) conceptual model as the collaboration effort combined with having assistive technology helps accommodate students by providing close relationships for creating the least restrictive environment for students with special needs.

Perhaps one of the most relevant findings of this study were that agricultural educators at these sites work well with their support system and encourage students with special needs to be involved in the agriculture program. Ultimately, some might suggest that educators might be reluctant to include students with special needs in the agriculture classroom due to the overwhelming amount of planning that goes into accommodating these students. Educators at the two locations conclude that the skills learned from the involvement in these programs include the development of social skills, problem-solving skills, and a sense of independence along with the application of concepts through hands on activities and are far more rewarding than just traditional teaching. Also, students with special needs are encouraged to be a part of CDEs, FFA activities and even SAEs because of the development it creates of giving students the opportunity to achieve goals through opportunities such as these.

Both research sites reported some common barriers, including aspects like slowing the instructional pace down so that students with special needs are not lost in the material, the time requirements of planning materials for IEPs, and then also tailoring teaching strategies so that the

instruction of the material does not just accommodate one learner, but all of them combined. Both sites conclude that traditional students are willing to help students with special needs in the agriculture program mainly because that is what their program promotes. The agricultural education setting is diverse; therefore the importance of assisting one another contributes to this positive learning environment.

When analyzing the end result for objective three in determining the perceptions of the special education aides for the development of students with special needs in the agriculture program divulge that socials and some problem-solving skills are drastically improved by being included in these programs. Because the classrooms are very accommodating to the special needs of these students, assistance can be more of a concentrated effort instead of adapting the classroom to the student. Most support provided from the special education aides to the special needs students at these sites conclude that their responsibility includes: note-taking assistance, help understanding directions or even the words on tests, behavioral management, as well as help on more detailed assignments or projects.

The special education aides at both sites confirm that the agriculture program primarily focuses hands on application with some group activity that allows the students with special needs to have some peer interaction with the traditional students in the classroom. Because students with special needs have peer interaction, it provides a diverse classroom structure for these students to be included in. This is part of the framework as it allows students to interact with others and the major differences of one another to the classroom which contributes to diversity. This study can conclude that students from both research sites are learning life skills by being placed in realistic settings using applied learning. Since students are allowed and encouraged to be involved in numerous activities, it gives them the opportunity for successfully accomplishing

their goals. Both sites reported that the system working together helps influences the success of integrating these students in the agricultural education classroom along with the aspects that the agricultural educators seem to be very confident in assisting these students in their classroom. Additionally, it should be noted that the educators from sites one and two are considered to be qualified to assist students with special needs in the agricultural education program. In fact, special education aides encourage that all students be given the opportunity to take an agriculture course because of the impact it has made on the special needs students they are current assisting.

Finally for objective three, a common barrier observed at both locations is that sometimes the first initial class to start off the year for students with special needs is somewhat overwhelming. Also, the pace of the class is a challenge for students with special needs. In addition to this, the more detailed assignments require more assistance from the special education aides so that students understand the context of the assignment for what is to be learned.

Objective four which analyzed the perceptions of students with special needs on what learning has occurred in the agriculture program revealed at both locations special needs students range from various spectrums of disabilities among this environment. Students with learning disabilities at both locations recognize the limitations they have. Students feel comfortable in the agriculture program because they are more integrated and involved with aspects like hands on application, which allows them to become more active. Sometimes these students feel a bit overwhelmed by the concepts, so they appreciate opportunities where the instruction takes them outside this environment to visualize how it all works. This is especially important to students at these two research sites because most of these special needs students are ones who struggle with memorization and attention difficulty. If students are taken out of the normal classroom

environment they feel like they can use their senses to understand the concepts. Students feel that the classroom is very accommodating and the agriculture instructors are confident in assisting them with their needs.

Perhaps an important concept identified by this study about students with special needs is the opportunity that these students are encouraged to participate in CDEs, FFA activities and SAEs because they feel like they have something to achieve. Those students chosen for this study have indicated that they have been involved in aspects like this and that they enjoyed this aspect because they felt like they were accomplishing something and learning a lot while also meeting others.

After conducting this study, it is evident that there is a significant relationship between the agriculture programs serving as an effective development tool for students with special needs. This can be attributed to agriculture programs that have a tremendous support system including students with special needs in the agriculture program and delivering opportunities for inclusion of students with special needs. This relationship alone between support and opportunities for special needs students provides a positive learning environment for students to fully develop. The learning environment for School 2 exemplified curriculum redesign to the fullest of including assignments like those illustrated in traditional student assignments but, may only include key words instead of understanding concepts. School 2 reports that collaboration is important to the success of each student with special needs. This helps them establish a positive learning environment with hands on opportunities for students to participate in, which is important to each need of the individual. As illustrated in Pense et al. (2010) conceptual model, School 2 follows a structure a lot like this model when including students with special needs in the agriculture classroom.

Objective five analyzed the relationship of the theoretical framework which borrowed from Pense's (2010) conceptual model revealed that both School 1 and School 2 follow a system that contributes to their positive learning environment and success of inclusion as illustrated in Pense's conceptual model. Although more curriculum redesign was assessed at School 2 in regards to modifying assignments to not overwhelm special needs students, School 1 provides assignments like traditional students only with revisions made to the way they assess students with special needs in the agriculture classroom. The underlying concept of Pense et al. (2010) conceptual model which serves as the major framework for this study is found to be a key relationship for inclusion of students with special needs in the agriculture classroom in both School 1 and School 2.

Recommendations

Based on of the results of this study, it is recommended that more attention needs to be placed in assessing the perceptions of teachers throughout the state of Illinois on whether the agriculture program develops students with special needs. By doing so, educators could be assessed regarding their perceptions using a questionnaire, and then five to ten schools could be randomly selected to observe and conduct interviews in those schools in order to provide more quantitative data to support this argument that agricultural education classrooms are vital in developing students with special needs. A better understanding of the agriculture programs in the state as a whole would suggest conclusions could be drawn for promoting better practices to improve the aspect of including students with special needs in the agricultural education classroom.

The information provided from this study could start the foundation to make a stronger argument that agriculture is essential to traditional students and special needs students. Further

research is needed to explore what areas of the classroom, including teaching strategies, coursework, and learning environments need to be improved for inclusion of students with special needs in the agricultural education classroom. Also, further recommendations of the theoretical framework illustrated in this study could assess also include specific activities contribute to the success of inclusion. This includes the predominant model for organizing instruction in agricultural education involving the relationship between: classroom and laboratory instruction, supervised agricultural experience and youth organization participation (Croom, 2008).

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APPENDIX A: INTERVIEW PROTOCOLS

Interview Protocol Questions for Instructor

1.) **School Type _____**

2.) **Grade Levels _____**

3.) **Student Population _____**

4.) **Class Schedules _____**

5.) **IEPs in Agricultural Program _____**

6.) **Total Students in Agricultural Education Program: _____**

- How many years of experience have you had in assisting students with special needs?
- How does integrating students with special needs impact non-special needs students?
- Do you have any perceived barriers towards teaching students with special needs?
- What factors help you as the "instructor" in working with students with special needs?
- Do you feel that students with special needs gain any development of social skills?
- What is one of the biggest skills you need in order to work with students who have special needs in the agricultural classroom?
- What are the greatest benefits of students with special needs being involved in the agricultural classroom?
- In your experience, what specific activities in the agricultural classroom have worked the best for students with special needs?
- What are the greatest difficulties you have encountered in dealing by means of students with special needs in the agricultural classroom?
- Do you believe agriculture in the classroom has improved problem-solving skills for students with special needs?
- Do you believe that those students with special needs among the agricultural classroom should be required to have some sort of Supervised Agricultural Experience?
- What agricultural classes with your experience, work best for inclusion of students with special needs?

Interview Questions for Special Education Aides

- What kind of help do you provide to the student with special needs?
- Do you think inclusion of students with special needs is important in the agricultural classroom?
- What kinds of skills do you think are developed by inclusion of students in the agricultural classroom?
- Do you think anything could be done to make the classroom more accommodating to students with special needs?
- Do you think the students you have worked with in the agricultural classroom have improved in developing social skills, the opportunity to work with others, the ability to follow directions or responsibility? If so, what area?
- What part of being involved in the agricultural classroom do you think students with special needs benefit from?
- Do you think students with special needs struggle with any classroom assignments or projects in the agricultural classroom?
- What kinds of barriers do you think exist to students with special needs in the agricultural classroom?
- Do you think students with special needs should be encouraged to sign up for Agricultural Education courses?
- Do you feel that the instructor is confident in working with students with special needs in the agricultural classroom?

Interview Protocol Questions for Students

- Courses taken in the Agricultural Education Program:
- What kind of special need the student possesses? (Cognitive, Physical or Other Form)
- What can the instructor do to be more successful in assisting you? How have the instructors assisted you? How have the instructors failed in assisting your needs?
- Do other students help you in any way? If so, what kind of assistance do students provide?
- Are the modifications okay?
- Do you have positive/bad interactions with other students in the class and if so, did the teacher step in?
- Do you like your agricultural course(s)? If so, what is your favorite part?
- Have you learned a lot from your agricultural courses? If so, what have you learned?
- What skills do you think you have developed from being in an agricultural course?
- What do you struggle with the most in the agricultural classroom?
- What kinds of activities do you like the most about being in the agricultural classroom?

APPENDIX B: OBSERVATION NOTES

Observation Notes of School 1

End of the current midterm. Classroom is setup with long tables and chairs. There seems to be a mixed array of concepts illustrated on the wall from leadership quotes to other illustrations from years past. Students come in and sit down waiting for the bell to ring. There are class organization drop boxes for assignments, but not individual boxes for students to keep books in. There is technology in the classroom, in an older classroom environment. Not as much organization of the classroom at this location. But students seem to be engaged in the learning environment. Students went out to greenhouse to water plants in the horticulture class and students in the environmental class tried out cars they made in the school parking lot using what they learned from their lesson on solar energy.

Observation Notes of School 2

School 2 is a small classroom environment set up with tables and chairs in a horseshoe shape to facilitate discussion. Also, technology is new in the classroom with pictures of concepts and various illustrations per the subject areas of the agriculture courses. Organization boxes hold student materials and assignments that students are working on. Announcements are posted on the board. Students come into class and are given a bell ringer activity to help motivate them for the lesson. This also breaks the monotony of the classroom environment with some fun facts. Students in the horticulture class took a field trip around town looking at different landscaped lawns. While doing so, the teacher had them identify plants and trees. Students were each asked to name certain plants when called upon throughout the duration of the field trip.