AGRICULTURE TEACHERS' PERCEPTION AND PRACTICE FOR TEACHING STUDENTS WITH DISABILITIES

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DEDICATION

To my inspirational family: Hillary, Zoe, and Ben.
This chapter of life would have been purposeless without you.

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ABSTRACT

Federal legislation mandates that appropriate education be provided for all students in US public schools (Individuals with Disabilities Education Act, 2004; No Child Left Behind, 2001). The use of evidence-based instructional practices for special education, such as Direct Instruction and Strategy Instruction, is one example of mandated educational provision. While positive outcomes have been documented from the use of evidence-based practices in agricultural education (Davis, Akers, Doerfert, McGregor, & Keith, 2005; Pense Watson, & Wakefield, 2009, 2010), a need was identified for describing agriculture teachers' use of Direct Instruction and Strategy Instruction. Findings were used to conclude that teachers espoused and used Traditional Instructional Practices with the highest frequency, teachers espoused and used Other Characteristics of Instructional Practice with lowest frequency, teachers were observed to use instructional practices with higher frequency than were reportedly espoused, and two clusters of teachers emerged with similarities in espoused and observed use of instructional practice. Implications were identified and recommendations for practice and future research were developed to support agriculture teachers' use of evidence-based instructional practices.

CHAPTER I

INTRODUCTION

Background and Setting

Despite only 40 years in the making, there is a rich history of legislative protection for students with disabilities and provisions that require public schools to meet students' needs. The Education for All Handicapped Children Act (EAHCA; 1975) was passed as the first federal act to specifically direct the support that public schools must provide for students with disabilities. EAHC was reissued in 1997 as the Individuals with Disabilities Act and, following the passage of the No Child Left Behind Act (NCLB) in 2001, the current version was adopted (IDEA; 2004). Both IDEA (2004) and NCLB (2001) guided the federally-mandated, educational experience components for all students with disabilities. Six main tenets within IDEA (2004) guided schools' provision for students with disabilities: (1) zero rejection of students, (2) nondiscriminatory identification and evaluation, (3) free and appropriate education (FAPE), (4) least restrictive environment (LRE), (5) procedural due process for accountability, and (6) shared decision making with parents and students (Turnbull, Huerta, & Stowe, 2006; Smith, 2005). Of the six provisions, inclusion of students, FAPE, and LRE have the greatest direct impact on the agricultural teachers' instructional practices, or intentional teaching activities used to educate students in the classroom.

Free and appropriate education.

IDEA (2004) stipulated that all students are entitled to a free and appropriate education (FAPE), thus ensuring that educational needs were identified and met for every student with a disability. The provision of an Individualized Education Program (IEP) was specified within the principle of a FAPE. An IEP, which is a detailed document including specific information about the student and their ideal educational program (i.e. current performance, annual goals, special education and related services, participation in inclusive environments, participation in state and district-wide tests, length and location of services, transition service needs, age of majority, and measuring progress), must be developed according to the unique educational needs of each student with a disability (IDEA, 2004). Teachers were thus provided with required educational provisions to meet the needs of students with disabilities under the direction of IEPs, which enabled more students with disabilities to be included in classrooms with the general student population.

Inclusion into the Least Restrictive Environment.

The inclusion of students with disabilities into the Least Restrictive Environment (LRE) was another component of both IDEA (2004) and NCLB (2001). In contrast to past seclusion or exclusion, the new expectation was for students with disabilities to be incorporated into the general population of classrooms to the greatest extent possible. In 2008, 13.4% of United States public school students had a disability (US Department of Education, 2010c), and 79.7%of those students spent at least 40% of their school day included in the

general classroom (US Department of Education, 2010b). Specifically in Missouri schools, students with disabilities have been included in the general classroom at an even higher rate—83.7% (US Department of Education, 2009).

The inclusion of students with disabilities into secondary agriculture programs through legislative mandates did not assure that every teacher was equipped with the requisite knowledge and skills, nor had appropriate dispositions in willingness to provide the necessary instructional practices to meet each student's educational needs. Federal legislation included provisions that called for teachers to use evidence-based instructional practices (No Child Left Behind Act, 2001). The use of evidence-based practices, along with direction detailed in the IEP, provides the architecture that teachers are required to provide to meet the learning needs of each student in their classes (No Child Left Behind Act, 2001).

Students with disabilities are commonly included in the general student population of agriculture classrooms. For example, 12.0% of agriculture students in Missouri have an Individualized Education Program, or IEP (Missouri Department of Elementary and Secondary Education, 2009). The benefit from being included in agriculture classes for students with disabilities is seen when one considers that agricultural education provides students with two dimensions of meaningful learning opportunity—content that can be used to prepare students for future involvement with the agricultural industry and a context to apply principles from other disciplines, such as math and science (Roberts & Ball, 2009). State-level quality indicators for Missouri teacher education programs also call for high quality programs, preservice field experience and clinical

practice, and resources allocated to a candidate pool to support the inclusion of students with disabilities in the classroom (Missouri Department of Elementary and Secondary Education, 2006).

Use of evidence-based instructional practices.

The use of evidence-based instructional practices from special education offers implications in agriculture classrooms to both guide teachers' instructional practices and support the learning experience for students. Though limited in number, studies in agricultural education have attempted to identify evidence-based practices to teach students with disabilities (Hoerst & Whittington, 2009; Pense, Watson, & Wakefield, 2010; Richardson & Washburn, 2006). One study identified specific strategies used by North Carolina agriculture teachers to provide supportive curriculum, instruction, and learning environments for students with disabilities (Richardson & Washburn, 2006). Teachers who participated in the Delphi study deemed 17 instructional strategies as successful for teaching students with learning disabilities, such as guided notetaking, peer teaching, self-monitoring, and independent practice. In another study (Pense, Watson, & Wakefield, 2010), horticulture curriculum was redesigned around Heward's (2009) six major principles of instructional design. The quasi-experiment with the redesigned curriculum yielded higher test scores for all students, including those with disabilities. Despite the sparse initial efforts within agricultural education research to define evidence-based practices for teaching students with disabilities, a description of the instructional practices agriculture teachers use in the classroom for students with disabilities would

yield insight into the current status of instruction for students with disabilities in agriculture classrooms. In addition, investigation within agriculture classrooms can provide confirmation of the supporting evidence from other disciplines, such as special education.

Special education research has yielded findings that can inform instructional efforts in agriculture classrooms. Direct Instruction (Gersten, 1985), Strategy Instruction (Klingner, Vaughn, Arguelles, Hughes, & Leftwich, 2004), and a combination of both instructional practices (Swanson, 1999) have produced significant academic improvement for students from multiple disability categories (e.g., autism and specific learning disabilities). Supporting evidence has also been found for the use of Direct Instruction in inclusive classrooms from other subject areas, including reading (Gregory, McLaughlin, Weber, & Stookey, 2005) and math instruction (Flores & Kaylor, 2007). The positive impact of Strategy Instruction has been documented in the areas of writing (Schumaker & Deshler, 2003), math (Gagnon & Maccini, 2007), and cognition (Butler, 1998). While Direct Instruction and Strategy Instruction have become foundational instructional practices through documented study in special education and general education classrooms, agricultural education offers both unique content and learning environment. Thus, the presence of Direct Instruction and Strategy Instruction practices still need to be verified within the context of instructional practices in inclusive agriculture classrooms.

Specific Learning Disabilities.

Of the 13 categories identified in IDEA (2004), students with specific learning disabilities are the category of highest incidence, representing 38.2% of all students with disabilities or 5.0% of the total public school student population (US Department of Education, 2010a). Since 89.3% of students with learning disabilities spend at least 40% of their instructional time in inclusive classrooms (US Department of Education, 2010b), teachers must consider how students' educational needs impacts the learning experience and the teachers' instructional practice. Along with federal legislation that has directed the development of instructional practices for students with disabilities (e.g., Direct Instruction and Strategy Instruction), attempts have been made to improve teacher development in the past decade. As a result, teachers should be better prepared to teach each student with a disability according to their unique needs and thus provide a more productive learning experience, which aligns with the direction provided by federal legislation (IDEA, 2004; NCLB, 2001).

Theoretical Framework

Knowledge of legislation and research-based practice may influence an agriculture teacher's perspective of students with disabilities and classroom instruction, but an agriculture teacher's instructional behavior is ultimately determined by their personal values. Argyris (1976, 1994) provided two *Theories of Action* that influence a person's ability to integrate thought to produce behavior: *espoused theory* and *theory-in-use* (see Figure 1). Espoused theory is what an individual reports they will do in a given context. For example,

agriculture teachers have thoughts of teaching and learning that they espouse to guide their instructional practices, including those focused toward students with disabilities. Theory-in-use refers to an individual's thoughts that govern their actions (Argyris, 1997). In this framework an agriculture teacher's theory-in-use determines their instructional practices in the classroom. Espoused theory and theory-in-use often differ, though the individual may or may not be aware of any discrepancies (Argyris, 1976). Simply put, the instructional practices that teachers think they use often differ from what they actually do in the classroom. However, the use of evidence-based instructional practices, such as Direct Instruction and Strategy Instruction, remains a fundamental goal for teachers' efforts to teach students with disabilities (NCLB, 2001). Thus, measurement of teachers' underlying espoused theories is a critical component to describing their espoused use of evidence-based instructional practices. Likewise, teachers' typical use of evidence-based instructional practices can only be defined through observation of instructional behavior in the classroom.

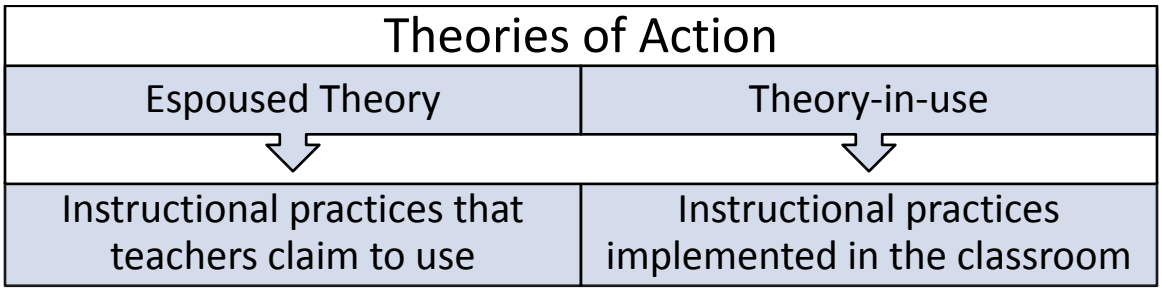

*Figure 1.*Model of teachers' theories of action on instruction (developed from Argyris, 1976).

An accurate description of agriculture teachers' espoused theories and theories-in-use toward teaching students with disabilities would provide insight

for teacher preparation and professional development programs. If teachers espouse fewer evidence-based instructional practices than are observed in use, professional development may increase focus on developing teacher awareness and classroom use of evidence-based practices. If teachers espouse using more evidence-based instructional practices than those observed, teacher professional development may focus on increasing support for transferring knowledge of instructional practices into actual classroom teaching. Finally, if the instructional practices that teachers espouse and are observed using are congruent, then current efforts to educate teachers could be maintained and research efforts may be shifted toward measuring the impact of Direct Instruction and Strategy Instruction in the context of agriculture classrooms. However, the presence of Direct Instruction and Strategy Instruction in agriculture teachers' instructional practices must be verified before measuring the impact of those evidence-based practices can be justified.

Need for the Study

A breakdown has been identified between research of evidence-based instructional practice and the transfer to teachers' instructional practices in the classroom (Carnine, 1997; Gersten, Vaughn, Deshler, and Schiller, 1997; Greenwood& Abbott, 2001). Kutash, Duchnowski, and Lynn (2009) also detailed this breakdown and suggested two explanations from research: (a) professional development provided for public school teachers does not typically provide adequate transfer to classroom teaching practices and (b) evaluation of the fidelity of practices is limited once they are implemented. In response to these

barriers, three roles were suggested for researchers in special education: (1) collaborator and coach with teachers in the classroom who serve as both consumers and informants in the research process, (2) interpreter of school culture and dynamics from both macro and micro levels; and (3) critics that draw firm, generalizable conclusions in order to honestly inform instructional practices (Gersten, Vaughn, Deshler, & Schiller, 1997).

Once they are established through research, evidence-based instructional practices must also be implemented in the designed and tested capacity to produce positive results in the classroom. If teachers do not perceive that a new instructional practice yields improved academic achievement for their students, then they are unlikely to continue using the approach (Gersten, Vaughn, Deshler, & Schiller, 1997). However, research detailing agricultural educators' perceptions and approach to teaching students with disabilities is limited (i.e., Hoerst & Whittington, 2009; Pense, Watson, & Wakefield, 2010; Richardson & Washburn, 2006). Despite existing evidence in special education, the perspectives toward and use of evidence-based instructional practices for students with disabilities need to be described in secondary agriculture classrooms.

A recent study within agricultural education further supported the need to define agriculture teachers' perceptions of their role in developing student literacy through Strategy Instruction (Park, Van Der Mandele, & Welch, 2010). The participants, secondary agriculture teachers, felt that reading was necessary for success in life but only supplemental in agricultural sciences. However, teachers also felt that agriculture classes provide embedded literacy instruction. According to the interviewed teachers, agricultural education contributes to

students' academic achievement, engagement with texts, and learning from reading and literacy (Park, Van Der Mandele, & Welch, 2010). In contrast, special education literature emphasizes the importance of providing Strategy Instruction that is both structured and explicit (Butler, 1998). Thus, agriculture teachers may have perceived Strategy Instruction to be a positive method for literacy instruction within agriculture classes, yet broader applications of the instructional practice should be investigated.

Statement of the Problem

Special education research has supported the use of Direct Instruction and Strategy Instruction for teaching students with disabilities in inclusive settings (Flores & Kaylor, 2007; Fontana, Scruggs, and Mastropieri, 2007; Gregory, McLaughlin, Weber, & Stookey, 2005; Schumaker & Deshler, 2003; Shippen, Houchins, Steventon, & Sartor, 2005). However, agricultural teachers' espoused use and observed use of Direct Instruction and Strategy Instruction remains unknown. If evidence-based practices from special education (Direct Instruction and Strategy Instruction) are identified as components of agriculture teachers' instructional practices, then teacher preparation and professional development can be improved for teachers to support students with disabilities. Improvements in the education of agriculture teachers would also improve their ability to meet IEP goals in accordance with legislative mandates (IDEA, 2004; NCLB, 2001).

Purpose of the Study

The purpose of this study was to describe Missouri agriculture teachers' espoused instructional practices versus observed use of evidence-based instructional practices when working with students with disabilities.

Research Objectives

The following research objectives were developed to guide the study:

1. Describe agriculture teachers' espoused use of instructional practices for teaching students with disabilities, specifically Direct Instruction and Strategy Instruction.

2. Describe agriculture teachers' instructional practices for teaching all students, including students with disabilities, as observed in inclusive secondary classrooms.

3. Determine if teachers' espoused instructional practices significantly related to their observed instructional practices.

Definition of Terms

The following definitions are provided for reader clarity:

Direct Instruction (DI): Direct Instruction was described as an approach to teaching essential skills in the most effective and efficient manner possible (Carnine & Silbert, 1979). Direct Instruction includes teaching activities that are focused on providing students with: (1) clear academic goals, (2) sufficient and continuous time for instruction, (3) explicit detail of content, (4) monitoring of

student performance, (5) questioning that targets low cognitive level and produces many correct responses, and (6) prompt academically-oriented feedback (Rosenshine, 1987).

Evidence-based Instructional Practices for Special Education: Evidence-based instructional practices for special education were defined as methods of teaching that were verified through scientifically-based research to significantly improve students' academic achievement when implemented with fidelity (NCLB, 2001). The components of Direct Instruction and Strategy Instruction were used as the primary evidence-based instructional practices in this study.

Inclusive Classroom: An inclusive classroom was defined for this study as a learning environment in which students with disabilities, having an Individualized Education Program (IEP), comprise a portion of the roster. Section 612(a) of the Individuals with Disabilities Education Act (IDEA, 2004) directed schools to educate "children with disabilities…with children who are not disabled" to the highest appropriate level.

Individualized Education Program (IEP): An IEP refers to the written document that details a student's unique educational needs. Section 614(d) of IDEA (2004) stipulates that an IEP must be developed, reviewed, and revised for each child with a disability. The following provisions must be present in the IEP document: (a) a statement of the child's present levels of academic achievement and functional performance, (b) a statement of annual academic and functional goals,

(c) a description of how the child's progress will be measured and reported; (d) a statement of services and supports to be provided to the child (e) the projected beginning date, frequency, location, and duration of services and supports; and (f) updated annually after age 16.

Instructional Practices: Instructional practices include all techniques used by teachers to facilitate education in the classroom. For this study, instructional practices focused on elements of Direct Instruction and Strategy Instruction implemented by teachers in inclusive agriculture classrooms. Instructional practices may further be viewed as facilitating the interaction between students and the instructional content (Nougaret, Scruggs, & Mastropieri, 2005).

Specific Learning Disability: A specific learning disability was defined as:

> a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia (IDEA, 2004, 300.8.c.10).

Students with learning disabilities were the primary student group of interest for this investigation of instructional practice, since each of the 13 identified student groups has unique educational needs (see *Student with a Disability)*.

Strategy Instruction: Strategy Instruction is an approach to teaching through the use of "specific, learned procedures that foster active, competent, self-regulated, and intentional learning" (Trabasso & Bouchard, 2002, p. 177). Eight stages are

included in Strategy Instruction: (1) students make a commitment to learning strategies that can help them do better in content-are class; (2) present the new strategy to students so they can learn the processes involved in using it; (3) teachers model the strategy primarily by thinking aloud and working through the strategy; (4) Students describe the learning strategy in their own words; (5) Students apply the strategy in the context of carefully selected materials and situations; (6) Students apply the strategy in the context of real-classroom demands; (7) Students learn how the strategy can be applied in other settings; (8) Students apply and adapt the strategy in other settings (Baker, Gersten, & Scanlon, 2002, p. 66).

Student with a Disability: A student with a disability was defined as an individual that had been diagnosed with at least one of the thirteen categories detailed in The Individuals with Disabilities Education Act (IDEA, 2004). The 13 following categories of disability serve as a means for identifying public school students that receive special education service: (1) autism, (2) deaf-blindness, (3) deafness, (4) emotional disturbance, (5) hearing impairment, (6) mental retardation, (7) multiple disabilities, (8) orthopedic impairment, (9) other health impairment, (10) specific learning disability, (11) speech or language impairment, (12) traumatic brain injury, and (13) visual impairment (IDEA, 2004).

Limitations of the Study

The following limitations were identified by the researcher:

1. Teachers may have limited previous knowledge and skill associated with Direct Instruction or Strategy Instruction.
2. Observations for the purposive sample of agriculture teachers did not necessarily represent all Missouri agriculture teachers. As a result, findings are not generalizable beyond the sample group.
3. The focus of the study was limited to observing the use of Direct Instruction and Strategy Instruction by secondary agriculture teachers. However, the presence of Direct Instruction and Strategy Instruction in agriculture instruction is needed before deeper investigation can be conducted, potentially through experimental study.
4. Student and teacher response to the presence of the researcher may have impacted teachers' instructional practices. Subsequently, a minimum of three class meetings were conducted in order to identify consistencies.
5. Observations of agriculture teachers' classroom instruction were conducted in one school day. However, the researcher requested and scheduled the visit for a day that the teacher targeted as a typical day for both teacher and students.

Basic Assumptions

The following assumptions guided this study:

1. Teachers had sufficient experience in the classroom to report known instructional practices.

2. Teachers' responses to interview questions were honest and accurate representations of their perceptions of typical instructional activity.
3. Observations were conducted in a manner to view participating agriculture teachers' instruction in the classroom for a typical day.
4. Procedures implemented to establish validity and reliability ensured that the interview protocol and observation forms accurately measured the intended data.

CHAPTER II

REVIEW OF LITERATURE

Purpose of the Study

The purpose of this study was to describe Missouri agriculture teachers' espoused instructional practices versus observed use of evidence-based instructional practices when working with students with disabilities.

The Need for Evidence Based Practice

At the federal level, public school teachers have been mandated to provide instructional practices and a classroom environment that ensures the Least Restrictive Environment (LRE) for students with disabilities (IDEA, 2004; NCLB, 2001). The instructional practices that all teachers, including agriculture teachers, use for teaching students with disabilities should be guided by two specific principles within the No Child Left Behind Act (NCLB, 2001): students have unique educational needs and evidence-based instructional practices must be used to meet those needs. However, research must first be conducted that identifies which instructional practices are present in agriculture classrooms before measuring their merit for teaching students with disabilities.

Review of special education literature yielded evidence that two instructional approaches clearly support the success of students with disabilities: Direct Instruction and Strategy Instruction. To be categorized as Direct Instruction, an instructional method must be teacher-centered, provide students with explicit detail, and produce positive outcomes through assessment (Rosenshine, 2008). Carnine (1979) detailed six aspects of program design that

are mainstays of Direct Instruction: (1) specifying objectives, (2) devising problem-solving strategies, (3) developing teaching procedures, (4) selecting examples, (5) providing practice, and (6) sequencing skills and examples. Strategy Instruction provides additional instructional support for students with disabilities through detailed strategies for simplifying and organizing the learning process (Schumaker & Deshler, 2003). Special education research supports the use of Direct Instruction and Strategy Instruction to meet the instructional needs for students with disabilities (Flores & Kaylor, 2007; Gagnon and Maccini, 2007; Schumaker & Deshler, 2003; Shippen, Houchins, Steventon, & Sartor, 2005; Swanson, 1999).

Direct Instruction

Direct Instruction consists of teacher-directed instruction that utilizes explicitly detailed curriculum to enhance learning success and efficiency (Grossen, 2004). Gersten, Taylor, and Graves (1999) detailed five provisions for Direct Instruction: (a) explicit strategies or frameworks, (b) teaching through examples, (c) attention to details of curriculum, (d) empirically based teaching practices, and (e) relevant background knowledge. In addition to implementing the provisions of Direct Instruction, teachers must be intentional about how they deliver instructional practices. Rosenshine (1987) outlined six steps for delivering Direct Instruction: (a) review and check previous work; (b) present new material in small steps; (c) provide guided practice; (d) provide feedback and correctives; (e) supervise independent practice; and (f) review weekly and monthly.

Student Response to Direct Instruction.

Direct Instruction has been implemented with positive results in the general education setting. Students without a disability demonstrated significant increases in both math skills and on-task behavior in response to Direct Instruction (Flores & Kaylor, 2007). Teachers can incorporate elements of Direct Instruction into their instructional practices, such as (a) use of frequent responding; (b) systematic teaching of component skills; (c) immediate feedback; (d) scaffolded instruction through modeling, guiding, and providing independent practice; and (e) including criteria for mastery before proceeding to the next level of instruction (Flores & Kaylor, 2007). Direct Instruction is an evidence-supported instructional practice that can be smoothly integrated into teaching efforts in inclusive classrooms with positive results for all students.

Direct Instruction has also been studied for students with disabilities in secondary reading and writing classes. In a single-subject study, Direct Instruction provided clear improvement in reading skills for a 16-year-old high school sophomore (Gregory, McLaughlin, Weber, & Stookey, 2005). As a result of implementing Direct Instruction practices, reading performance (number of words read correctly and number of errors made during oral reading) and student engagement improved. In another study of the use of a Direct Instruction program, *Expressive Writing*, high school students reported improved writing skills (Walker, Shippen, Alberto, Houchins, & Cihak, 2005). Authors of another study documented that student awareness of the use of Direct Instruction did not significantly influence the impact of its implementation in a reading intervention unit (Shippen, Houchins, Steventon, & Sartor, 2005).

Teachers using Direct Instruction both overtly (students were aware of the modified instruction) and covertly (students were not aware) documented improvement in reading skills for struggling students. Researchers' documentation of positive outcomes for students with disabilities in response to Direct Instruction provided supporting evidence within special education research.

Strategy Instruction

Strategy Instruction has been shown to support positive learning outcomes for students with disabilities in multiple content areas, such as writing, math, and social studies (Fontana, Scruggs, & Mastropieri, 2007; Gagnon & Maccini, 2007; Schumaker & Deshler, 2003).

Student Response Strategy Instruction.

Strategy Instruction has been studied in multiple content areas (e.g., reading, writing, math, and science) at the University of Kansas' Center for Research on Learning (CRL) as part of the *Learning Strategies Curriculum*. In one study (Schumaker & Deshler, 2003), the *Learning Strategies Curriculum* verified the use of Strategy Instruction as a means to support students' writing skill development through a sequence of stages: knowledge acquisition, storage, and demonstration of competence. The *Learning Strategies Curriculum* also offers educators a detailed example of Strategy Instruction that has been shown to produce positive results for students with disabilities, such as using strategies and computerized tools to eliminate spelling errors, increasing paragraph writing scores, and improving students' GPA in English and social studies.

Butler (1998) reported combined findings from three studies of another form of Strategy Instruction: the Strategic Content Learning (SCL) approach. The SLC approach was designed to promote cognitive self-regulation for students with learning disabilities. Findings noted improvements in students' metacognitive knowledge over time, task-specific efficacy, attribution patterns, performance, and strategic approaches to in-class tasks. Students also were reported to transfer the strategies to other contexts and tasks. In short, students experienced greater learning outcomes in response to the SCL approach.

Strategy Instruction has also been shown to improve students' vocabulary performance through the use of mnemonics. Posttest scores for students with learning disabilities were higher than their peers' without disabilities following instruction that utilized keywords to improve learning and retention of vocabulary (Uberti, Scruggs, & Mastropieri, 2003). Similar forms of Strategy Instruction could provide meaningful support to students with disabilities in agriculture classes, and thus warrant investigation. However, while evidence has been found to support the use of Strategy Instruction, agriculture teachers have yet to be observed using Strategy Instruction in typical classroom instruction.

Teachers' Perceptions of Strategy Instruction.

Low teacher understanding of strategy instruction in reading instruction was observed and documented in the classrooms of 41 special education teachers (Klingner, Urbach, Golos, Brownell, & Menon, 2010). Of the 124 lessons observed, only 49 included comprehension instruction beyond the level of rote-level questions. Complex strategies, such as finding the main idea or

summarizing, were rarely observed instructional practices. While opportunities for Strategy Instruction were evident to the researchers, most teachers felt unsure of how to promote their students' reading comprehension. Preparing teachers to implement Strategy Instruction must include clear direction that would include examples of appropriate times to use the technique with opportunities to practice as well.

Gagnon and Maccini (2007) investigated the role of Strategy Instruction in math instruction as perceived by 167 secondary special and general educators. Their survey revealed that as teachers took more methods courses, the number of evidence-based instructional approaches they reported to use in their classrooms increased significantly. In addition, special education teachers reported greater use of specific, empirically validated instructional practices when compared to general educators. The authors detailed a difference in teacher preparation that supports special educators' higher use of evidence based practices—instructional techniques are often focused on during preservice coursework as much as familiarity with content is stressed in other disciplines. According to the authors, focused effort through teacher preparation, professional development, or independent learning precedes positive use of Strategy Instruction (Gagnon & Maccini, 2007).

In a survey of practicing teachers, Barry (2002) identified 23 strategies of instruction that were used in 11 different content areas. Secondary teachers reported five barriers to using Strategy Instruction in their classes: (a) time, (b) pressure to cover required material, (c) lack of motivation, (d) limited preparation, and (e) lack of confidence. The researcher also stressed the

importance of teachers' attaining full understanding of an intervention—if they think of it in superficial and procedural terms, then they aren't likely to implement it successfully and their enthusiasm for it will wane (Barry, 2002).

Based upon this review of the literature, agriculture teachers stand to benefit from increased awareness of strategies, which may currently be in use or added to their instructional practices. It is possible that components of Strategy Instruction are being implemented, yet agriculture teachers are unaware of them due to a lack of familiarity with Strategy Instruction. Greater understanding of Strategy Instruction implementation could thus improve agriculture teachers' ability to provide systematic instructional practices with appropriate timing. An improvement in teachers' awareness of Strategy Instruction could thus yield improved implementation in typical classroom instruction and result in greater learning outcomes for students in agriculture classes.

A Combined Approach to Instructional Practice

The case has been made for combining Direct Instruction and Strategy Instruction as one evidence-based instructional approach (Swanson, 1999). Swanson (1999) suggested that Direct Instruction and Strategy Instruction overlap in two ways—they are both positive methods of instruction and provide a sequential structure for instructional events. He further proposed that Direct Instruction and Strategy Instruction utilize the same procedures except for two variations; in Direct Instruction (a) focus is directed toward developing subskills (e.g., in reading subskills such as producing/identifying sound units or linguistic units), and (b) discussion of processes and use of general rules is minimized

(whereas in Strategy Instruction, this is maximized to make it overt). He then summed the difference up with a single word: focus. Direct Instruction focuses on explicitly describing details to support student cognition, while Strategy Instruction focuses on global processes and skill development.

Knowing that both strategies are procedurally similar, Swanson (1999) also tested if one approach was more significant than the other. He studied the effects of instructional practices in four forms: Direct Instruction only, Strategy Instruction only, combined use of both Direct Instruction and Strategy Instruction, and instruction that was not classified as Direct Instruction or Strategy Instruction. While the other categories of instruction provided positive effect sizes, the combined use of Direct Instruction and Strategy Instruction yielded the largest positive impact on students' scores in response to experimental treatment.

Components of Direct Instruction and Strategy Instruction were also combined in the Paired Associates Strategy developed at the University of Kansas (Schumaker, Deshler, Nolan, & Alley, 1996). The program was designed as an eight-stage instructional approach: (1) pretest and make commitments, (2) describe, (3) model, (4) verbal practice, (5) controlled practice and feedback, (6) advanced practice and feedback, (7) posttest and make commitments, and (8) generalization. In a study of the impact of the program, Paired Associates Strategy resulted in improvement of both independent creation of study cards and performance on recall tests for 11 students with learning disabilities (Bulgren, Hock, Schumaker, & Deshler, 1995). With the positive results that the combination of Direct Instruction and Strategy Instruction have yielded for

students with disabilities, investigation is warranted to detail the espoused and observed use of the instructional practices by agriculture teachers.

The Challenge for Agriculture Teachers

Research within agricultural education suggests that agriculture teachers have a willingness to teach students with disabilities (Boone, Watts, Boone Jr., & Gartin, 2008; Giffing, Warnick, Tarpley, & Williams, 2010), yet the evidence needed for establishing instructional practices is limited (Davis, Akers, Doerfert, McGregor, & Kieth, 2005; Pense, Watson, & Wakefield, 2009, 2010). The majority of agricultural education research related to teaching student with disabilities is descriptive and perception-based (Killingsworth, Ball, & Thomas, 2010). This existing evidence base, while limited, provided the focus and direction for the current study of agriculture teachers' instructional practices for students with disabilities. While research investigating teachers' perceptions provides the first avenue toward describing the phenomena of teaching students with disabilities in agriculture classrooms, observational research is needed to build the evidence base about actual classroom teaching.

Benefits of Evidence-based Practice for Agriculture Students

Researchers detailed the benefit of the learning environment provided for an agriculture student with autism (Davis, Akers, Doerfert, McGregor, & Kieth, 2005). The investigators conducted the qualitative study to understand the impact of livestock exhibition as a learning environment for the student. The student's parents and teacher reported that the student developed social skills during the experience. Additionally, the student's value for family was

strengthened through the experience. A third theme that emerged within the study was an increase in the student's responsibility and knowledge of animal care. All three areas were documented as perceived benefits from the opportunity to participate in the learning experiences both inside and outside the agriculture classroom.

The effect of evidence-based practice has been documented in other units taught in the agriculture classroom. A unit within a horticulture class was redesigned based on six major principles of successful instructional design (Heward, 2009) to better accommodate the needs of students with disabilities (Pense, Watson, & Wakefield, 2009, 2010). A quasi-experiment was then conducted to measure the effect of the redesigned horticulture unit for agriculture students (Pense, Watson, & Wakefield, 2009, 2010). In the six rural programs that were studied, redesigned curriculum was reported to have a positive effect on all students' acquisition of horticulture knowledge. By using evidence-based instructional practices, agriculture teachers can provide positive results for students with disabilities as illustrated by this investigation. Of the reviewed special education studies within agricultural education literature, Pense et al. (2009, 2010) provided the only study that utilized non-perception based data collection procedures. Observational study of classroom instruction would provide further description of agriculture teachers' instructional efforts for teaching students with disabilities beyond the existing perception-based literature.

Agriculture Teachers' Perceptions toward Teaching Students with Disabilities

Use of strategy instruction.

Agriculture teachers' perceptions have been studied pertaining to their use of Strategy Instruction to support reading for the general student population (Park & Osborne, 2006a, 2006b). While teachers described some use of Strategy Instruction, they expressed a need for development and support in order to consistently increase their implementation of Strategy Instruction in the classroom. Teachers also perceived that their limited efforts to provide Strategy Instruction did not result in significant improvement for student comprehension or motivation. The authors suggested that increased professional development should support teachers' understanding of Strategy Instruction, thus providing increased benefits for students (i.e. improved comprehension and achievement) and teachers (i.e. savings in time and increased impact of efforts).

Documented instructional practices in use.

Curricular needs of students with disabilities were identified in a study of secondary agriculture teachers in Illinois (Pense, 2007, 2008, 2009). Teachers reported that 23.2% of the student population in agriculture classes had an IEP. Over half of the teachers (58.9%), in mostly rural schools (71.4%), felt that agriculture classes provided a suitable learning environment for students with disabilities. Teachers also reported that a majority of students with disabilities were active in the agriculture program outside the classroom: 72.3% engaged in Supervised Agricultural Experiences and 79.9% competed in Career Development

Events. Pense's (2007, 2008, 2009) findings indicate that students with disabilities who participate in agricultural education benefit from the learning experiences afforded to them both inside and outside of agriculture classrooms.

Richardson and Washburn (2006) utilized the Delphi technique to assess North Carolina agriculture teachers' perceptions of instruction, curriculum, and environmental modifications that are useful for students with mild to moderate learning disabilities. Seventeen teachers participated in all three rounds of the study and identified 27 instructional strategies they perceived as successful for students with learning disabilities. The reported findings provided a start toward defining the existing perspectives of agriculture teachers toward teaching students with learning disabilities.

Although not reported in the same terminology as encountered in special education literature, the following elements of Direct Instruction and Strategy Instruction were identified by agriculture education teachers (Richardson & Washburn, 2006): (a) guided notes, study guides, and handouts; (b) explicit focus on problematic vocabulary; (c) direct supervision; (d) intentional efforts to develop meaningful assessments; (e) in-class support for reading; (f) explicit feedback and guidance; (g) breaking content and tasks into smaller segments; (h) individualized directions; (i) peer teaching;(j) self-monitoring; and (k) independent practice. Additional elements of instructional strategies identified by agriculture teachers to be successful for students with learning disabilities included (a) implementing modifications from the student's IEP; (b) providing instructional videos, PowerPoint presentations, and other visual media; (c) emphasizing good hands-on skills; and (d) communicating and collaborating

with special education personnel. The use of instructional practices that are components of Direct Instruction and Strategy Instruction suggest that agriculture teachers are attempting to address the educational needs of students with learning disabilities in their classrooms, and that while agriculture teachers' knowledge of Direct Instruction and Strategy Instruction may be limited, components of those evidence-based practices are present in secondary agriculture classrooms.

The instructional practices identified in Richardson and Washburn's (2006) Delphi study were investigated in a national study (Stair, Moore, Wilson, Croom, & Jayaratne, 2010). The study was designed to identify which instructional practices agriculture teachers applied in their classrooms and perceived to be effective. Three demographic areas, in-service participation, age, and having a friend or family member with a disability, were found to be statistically significant predictors of teacher confidence in using the instructional practices. Furthermore, teacher confidence (a) increased with in-service participation, (b) decreased with age, and (c) increased for teachers that had a friend or family member with a disability. Teachers perceived "emphasizing good hands-on skills" as the most effective teaching strategy when working with students with disabilities. Teachers also reported the use of the good hands-on skills strategy most often in their classes. While research within agricultural education has identified the presence of evidence-based instructional components (Richardson & Washburn, 2006), agriculture teachers are not reporting use of the elements of Direct Instruction or Strategy Instruction frequently (Stair et al., 2010).

Teacher attitudes about disability and inclusion.

Agricultural education literature detailed that agriculture educators had mixed perceptions toward students with disabilities. Nearly 78% of participating West Virginia agriculture teachers reported that they adapt classroom instruction for students with disabilities (Boone, Watts, Boone Jr., & Gartin, 2008). Further, more than 42% of teachers felt that the challenge of being in a regular classroom would promote learning for students with disabilities. These findings suggest that agricultural educators intend to provide quality educational experiences to all students, yet efforts are needed to increase agriculture teachers' awareness of provisions, including evidence-based instructional practices, that support students with disabilities beyond providing a challenging classroom environment. Creating a challenge in the classroom is not the intended goal of inclusion, rather equal opportunity to learn the general education curriculum is required for students with disabilities by providing supports and evidence-based instructional practices (IDEA, 2004; NCLB, 2001). Teachers' awareness of the positive impact of evidence-based instructional practices directly influences their "buy in" to initiate and continue the use of evidence-based practices for students with disabilities in their classrooms (Kutash, Duchnowski, & Lynn, 2009). Thus, it is timely to investigate the instructional practices that agriculture teachers espouse to use and are observed using.

Preservice agriculture teachers' were reported in two related studies to have moderate confidence and low knowledge for meeting the needs of students with disabilities (Kessell, Wingenbach, Burley, Lawver, Fraze, & Davis, 2006a; Kessell, Wingenbach, & Lawver, 2009). Only one knowledge criterion, least

restrictive environment (LRE), significantly related with preservice teachers' level of confidence for meeting the needs of students with disabilities. The authors also reported the following: (1) female students had higher knowledge scores than males, (2) knowledge of disabilities and special education law increased with age, (3) preservice teachers who felt prepared to teach students with disabilities had higher confidence scores, and (4) both knowledge and confidence scores increased as teachers spent more time in the company of a person with a disability outside an academic setting.

Need for Professional Development.

Beginning agriculture teachers' self-efficacy toward teaching students with disabilities has also been studied (Aschenbrener, Ross, & Garton, 2007, 2008, 2010). Beginning agriculture teachers perceived greater need for development toward teaching students with disabilities through preservice preparation, professional development, and self-efficacy. Missouri and North Carolina agriculture teachers were surveyed for perceived strength of four support areas: (1) preservice preparation, (2) in-service professional development, (3) administrative support, and (4) self-efficacy. Agriculture teachers reported administrative support to be the strongest existing area of support from the four variables. Subsequently, administrative support was viewed by beginning teachers as the lowest area of need from the four investigated variables.

A study of Pennsylvania agriculture teachers gathered their perspectives of current and desired competence in teaching students with disabilities (Elbert, & Baggett, 2003). Teachers reported low competence for five of the measured

competencies: (a) completing an individual vocational education plan (IVEP), (b) being familiar with laws that apply to students with disabilities, (c) completing an individualized education program (IEP), (d) assisting students to realistically view assets and limitations, and (e) utilizing a variety of methods and techniques for instructing students with disabilities. The authors also reported that teachers desired significantly higher levels of competence than they perceived to have in every measured category (Elbert & Baggett, 2003).

Secondary teachers' perceptions of the importance, competence, and professional development needs for including and teaching students with disabilities were measured in another study in New Mexico (Andreasen, Seevers, Dormody, & VanLeeuwen, 2007). Teachers reported that they most needed professional development related to inclusive practice in (a) understanding special education regulations and (b) understanding different levels of special education services. Handling uncooperative special education students was also found to be a highly significant category of need for agriculture teachers.

The inclusive practices in Ohio agriculture classrooms were described by Hoerst and Whittington (2009). Their census identified that 80% of agriculture teachers felt like they needed to learn more teaching techniques for inclusion, yet 78% reported to feel prepared to teach in inclusive settings. The lack of congruence between the two findings suggests that teachers had a disconnect between their perceived need for additional training and their sense of preparedness. Of the 14 teaching techniques surveyed, teachers noted that they used discussion and demonstration most often. Although classroom discussion was not, a variation of demonstration (i.e., explicit modeling) has been shown to

support students with disabilities, specifically as a component of Strategy Instruction (Baker, Gersten, and Scanlon, 2002). Agriculture teachers in the Ohio study also reported to use role play and collaboration with special education personnel least often (Hoerst & Whittington, 2009). The perceptions of the surveyed participants suggest that Ohio agriculture teachers may not be familiar with Direct Instruction and Strategy Instruction. Only two elements of Direct Instruction (assessing student progress and setting expectations for students) and no elements of Strategy Instruction were included in the 14 surveyed teaching techniques.

A final study in the review of literature suggested that teachers' perceptions toward including students with disabilities may differ from actual instructional practice in agriculture classrooms (Giffing, Warnick, Tarpley, 2009; Giffing, Warnick, Tarpley, & Williams, 2010). Researchers studied Utah agriculture teachers' attitudes and perceived ability toward including students with disabilities. Almost 90% of the participants felt like they understood the concept of inclusion; however a much lower number, 61.5%, thought that students with disabilities should be integrated into inclusive classrooms. A strong majority of the agriculture teachers expressed willingness to include students with hearing impairments (87.2%), autism (73.1%), visual impairments (66.7%), and multiple disabilities (64.1%); yet less than half of the teachers reported that they had the skill to include the four groups of students into their classes (46.2%, 37.2%, 39.5%, and 39.7%, respectively).

As suggested by their findings (Giffing, Warnick, Tarpley, 2009; Giffing, Warnick, Tarpley, & Williams, 2010), a disconnect appears to exist between

agriculture teachers' espoused instructional practices and their perception of personal ability to deliver those instructional practices for students with disabilities. If teachers don't perceive that they have the skill to use evidence-based instructional practices in the classroom, then their espoused practices would differ from those observed in use. Investigation of agriculture teachers' espoused and used instructional practices for teaching students with disabilities is needed to confirm or reject such a discrepancy, demonstrating a clear need for this current investigation.

Theoretical Framework

Theories of action (Argyris, 1976, 1997; Argyris & Schön, 1974) served as the primary theory for framing this investigation of secondary agricultural teachers' instructional practices for students with disabilities (see Figure 2). Argyris (1976) stated that people espouse theories of action, which they use to develop a plan and demonstrate intentions for action or behavior. Individuals report their espoused theory when discussing an intended action, such as a teacher's description of future instruction in the classroom. Theory-in-use refers to the theory that directs an individual's action.

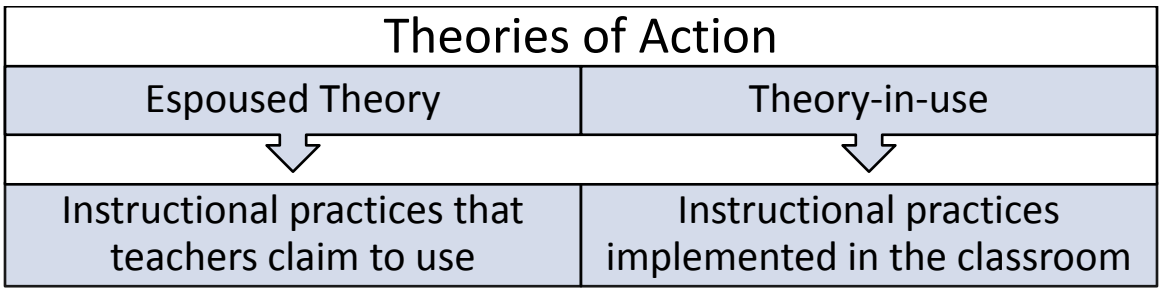

*Figure 2.*Model of teachers' theories of action on instruction (developed from Argyris, 1976).

Espoused theory often does not align with an individual's theory-in–use, yet the person is typically unaware of this discrepancy (Argyris, 1976). However, when individuals become aware of differences between their theory-in-use and the theory they espouse for a situation, then they are empowered to make adjustments toward more intentional behavior (Agryris, 1997). In the case of agriculture teachers' use of evidence-based practices for teaching students with disabilities, heightened awareness of teachers' theories of action offers (a) greater opportunity for teachers to improve their instructional efforts, (b) increased potential for learning opportunities for students, and (c) greater influence for postsecondary faculty to provide preservice preparation and professional development.

Incongruence between teachers' espoused theories and theories-in-use was also documented in a qualitative study of teachers' and principals' perceptions of summative evaluation conferences (Calabrese, Sherwood, Fast, & Womack, 2004). It was reported in the findings that teachers' espoused perceptions of summative performance, which were reported to principals, differed from the theories-in-use that they held for the process. A lack of open communication between teachers and principals was identified as a central contributor to the phenomenon. Espoused theories have also been viewed as valuable, despite their imperfect nature, to weaken administrators' inclination to base their decisions entirely on unproven tactics, personal values, or impulses (Hoy, 1996). Essentially, awareness of espoused theory is helpful in making instructional decisions.

Divergence between espoused instructional practices and the instructional practices used in the classroom was identified in another researcher's study of her own culturally relevant instructional practices (Gibson, 1998). Analysis of audio recordings revealed an intersect between her personal beliefs and teaching practices that was less than ideal despite her espousal to use instructional practices that exhibited a high level of cultural awareness. However, Gibson (1998) was able to revise her instructional practices once she was aware of the discrepancy between her instructional practice and espoused ideology.

Theories of Action have been utilized to frame past investigations within agricultural education as well. One researcher tested theories in practice as a response to declining numbers of Supervised Agriculture Experiences (SAEs) in New York agriculture programs (Steele, 1997). Steele (1997) framed his investigation as measuring agriculture teachers' espoused theories toward SAEs as a component of learning experience in agricultural education, yet he reported New York students' declining participation as associated theories-in-use. Argyris (1976) theorized that individuals have ultimate control over their espoused theories and theories-in-use, which does not align with Steele's (1997) approach. According to the theorist each person's espoused theories and theories-in-use are unique to that individual, thus the teacher and each student would have independent theories from one another.

Theories of Action have also been applied to the investigation of preservice agriculture teachers' perceptions of the impact of an 11-week field experience (Harlin, Edwards, & Briers, 2002). The researchers concluded that the preservice teachers adjusted their espoused theories to align with theories-in-use

that were tested during the field experience. However, all data was perception-based and collected through survey. Individuals are often unaware of their theories-in-use, so documenting an individual's behavior through observation is the best way to measure them (Argyris, 1997). Since all data collection involved measurement of preservice teachers' perceptions without documenting observations of behavior, the researchers' conclusion of preservice teachers aligning their espoused theories and theories-in-use was unfounded.

In consideration of the related literature, Theories in Action (Argyris, 1976, 1999) were thus used to frame investigation of Missouri agriculture teachers' espoused theories and theories-in-use toward teaching students with disabilities. Agriculture teachers' espoused theories for using evidence-based instructional practices for teaching students with disabilities were collected through survey. Likewise, observations of instructional practices in agriculture classrooms then provided a means to quantify teachers' theory-in-use.

Summary

Legislation to protect the educational rights of students with disabilities directs teachers to use evidence-based instructional practices (NCLB, 2001). Evidence has been established that through special education research that supports Direct Instruction and Strategy Instruction as successful instructional practices for teaching students with learning disabilities (Swanson, 1999; Bulgren, Hock, Schumaker, & Deshler, 1995). Positive impact for students (Davis, Akers, Doerfert, McGregor, & Kieth, 2005; Pense, Watson, & Wakefield, 2009, 2010) and teachers' perceptions toward teaching students with disabilities

have also been described within agricultural education (Richardson & Washburn, 2006; Stair, Moore, Wilson, Croom, & Jayaratne, 2010). However, agriculture teachers' espoused and observed use of evidence-based instructional practices need to be studied. Thus, Theories of Action (Argyris, 1976, 1994, 1999; Argyris & Schön, 1974) provided a theoretical framework for the study of agriculture teachers' espoused theory and theory-in-use as they pertained to evidence-based instructional practices for teaching students with disabilities.

CHAPTER III

METHODOLOGY

Purpose of the Study

The purpose of this study was to describe Missouri agriculture teachers' espoused instructional practices versus observed use of evidence-based instructional practices when working with students with disabilities.

Research Objectives

The following research objectives were developed to guide the study:

1. Describe agriculture teachers' espoused use of instructional practices for teaching students with disabilities, specifically Direct Instruction and Strategy Instruction.

2. Describe agriculture teachers' instructional practices for teaching all students, including students with disabilities, as observed in inclusive secondary classrooms.

3. Determine if teachers' espoused instructional practices significantly related to their observed instructional practices.

Research Design

The design of this descriptive-relational study incorporated interviews and in-class observations. Gall, Gall, and Borg (2007) stated that the intent of descriptive research "is to study phenomena as they exist at one point in time" (p. 299). They further detailed that researchers are often inclined to investigate

cause and effect relationships and test new instructional methods and programs, but those efforts can only be conducted once the phenomena are described accurately (Gall, Gall, & Borg, 2007). Considering that special education related research within agricultural education has provided limited description of teaching practice, the purpose of this investigation of Missouri agricultural educators was to describe the instructional practices both espoused by teachers and observed in the classroom.

In this study, two forms of data collection were performed: a phone interview that yielded responses of espoused use on five-point Likert scaled items and in class observations of teachers' use of instructional practices. For the phone interview component of this investigation, data collection was focused on gathering teachers' perceptions of instructional practices for teaching students with disabilities. The classroom observation portion of data collection was intended to describe teachers' instructional practices for teaching students with disabilities within inclusive agriculture classrooms. Gall, Gall, and Borg (2007) suggested that properly used observational methods "avoid the potential inaccuracy and bias of data generated by research participants" (p. 263). Further, data collection was conducted as reactive observation, or observations of individuals in real-life contexts with knowledge that they are being observed (Gall, Gall, and Borg, 2007). Observations focused on evidence-based instructional practices (Direct Instruction and Strategy Instruction) provided for students with disabilities. These observations provided the data for comparison of teachers' espoused theories of instructional practice, or those they claim to use,

and theories-in-use, or those that are actually provided in practice, for students with disabilities.

Population and Sample

The 2010-2011 Agricultural Education Directory served as a frame of the agriculture teacher population in Missouri. Contact information was also provided in the directory, including the school district, mailing address, and e-mail address for each teacher, which was critical in establishing contact for data collection. A purposive sample was also selected in order to limit the influence of potentially confounding variables. The goal of purposive sampling is to "select cases that are likely to be 'information-rich' with respect to the purposes of the study" (Gall, Gall, & Borg, 2007, p. 178). Due to the purposive nature of this sample, findings were not generalized to larger populations.

From the existing frame (N = 487), a homogenous sample of teachers (n = 6) was selected on the basis of three characteristics: institution of preservice preparation, years of teaching experience, and inclusion of students with disabilities in the classroom. Graduates from the Agricultural Education-Teacher Certification Emphasis degree program at the University of Missouri were selected for the purposive sample. Using teachers that graduated from the same institution ensured that the preparation they received for teaching students with learning disabilities was consistent. Teachers included in the sample also had 5 to 10 years of teaching experience. A five year minimum was established because that is that the level of teaching experience required for teachers to obtain tenure in Missouri. Likewise, a maximum of 10 years of teaching experience was set due

to the passage of legislation (NCLB, 2001) and the coinciding implementation of coursework that focused on teaching students with learning disabilities in the Teacher Development Program at the University of Missouri. Finally, teachers identified for the sample had classes that included students with disabilities, determined by the presence of an IEP. A faculty member that taught all of the prospective participants at the postsecondary level and the former state professional development specialist were consulted in the identification of the purposive sample (n = 6) from all teachers that met the three criteria for consideration (n = 35).

Table 1 displays the agriculture teachers' gender, highest level of education, enrollment of students by category of disability, if they had a friend or family member with a disability, and if they have spent time with an individual with a disability outside of the school environment. Of the six participating teachers, two were female and four were male. Half (n = 3) of the agriculture teachers had received a master's degree, while the remaining three had continued their education beyond a master's degree. All six of the teachers reported enrollment of students with a Specific Learning Disability, four teachers reported enrollment of students with Speech or Language Impairment, three teachers reported enrollment of students with Other Health Impairment, three teachers reported enrollment of students with Emotional Disturbance, one teacher reported a student with Autism, one teacher reported enrollment of a student with Multiple Disabilities, and one teacher reported enrollment of a student with Orthopedic Impairment. Fifty percent (n = 3) of the teachers reported to have a friend or family member with a disability, and 100.00% (n = 6) of the agriculture

teachers reported to have spent time with a person with a disability outside of the school environment.

Table 1

Participating Teachers' Demographic Characteristics of Nominal Type (n = 6)

Characteristic	*F*	%
Gender		
Female	2	33.33
Male	4	66.67
Highest Level of Education		
Bachelor's Degree	0	0.00
Bachelor's +	0	0.00
Master's Degree	3	50.00
Master's +	3	50.00
Enrollment of Students by Category of Disability		
Autism	1	16.67
Deaf-blindness	0	0.00
Deafness	0	0.00
Emotional Disturbance	2	33.33
Hearing Impairment	0	0.00
Mental Retardation	0	0.00
Multiple Disabilities	1	16.67
Orthopedic Impairment	1	16.67
Other Health Impairment	3	50.00
Specific Learning Disability	6	100.00
Enrollment of Students by Category of Disability		
Speech or Language Impairment	4	66.67
Traumatic Brain Injury	0	0.00
Visual Impairment	0	0.00
Friend or Family Member with a Disability		
Yes	3	50.00
No	3	50.00
Spent Time with an Individual with a Disability Outside of the School Environment		
Yes	6	100.00
No	0	0.00

Table 2 displays the agriculture teachers' demographic characteristics of interval or higher data. Characteristics included years of teaching experience, total student enrollment, enrollment of students with an Individualized Education Program (IEP), level of preparation received to teach students with disabilities through university coursework, and level of preparation received to

teach student with disabilities through professional development workshops. The purposive sample consisted of agriculture teachers with mean values of 6.42 (*SD* = 1.28) years of teaching experience, 95.00 (*SD* = 58.81) students enrolled in their classes, 8.50 (*SD* = 4.76) students with an IEP enrolled in classes, and having participated in 5.33 (*SD* = 3.50) credit hours of university coursework and 4.67 (SD = 4.67) hours of professional development in preparation for teaching students with disabilities.

Table 2

Participating Teachers' Demographic Characteristics of Interval or Better Type (n = 6)

Characteristic	*M*	*SD*	Range (min-max)
Years of Teaching Experience	6.42	1.28	5-8
Total Student Enrollment	95.00	58.81	42-198
Enrollment of Students with an IEP	8.50	4.76	4-15
Preparation through University Coursework[a]	5.33	3.50	3-12
Preparation through Professional Development Workshops[b]	4.67	3.45	0-10

[a]Preparation through University Coursework reported in credit hours.
[b]Preparation through Professional Development Workshops reported in actual hours of time.

Quantitative Teacher Interviews – Round One

Instrumentation

The interview questionnaire (see Appendix E) was designed to gather agriculture teachers' perceptions and espoused use of evidence-based instructional practices for teaching students with disabilities. The researcher-administered survey questionnaire consisted of two sections. All questions in Sections I - III aligned with the categories to be observed in classroom instruction during the second round of data collection (see Observation Form in Appendix

G). The categories of evidence-based instruction were identified in a previous study of special educators' use of evidence-based instructional practices (Cornett, 2010). Section III of the survey questionnaire consisted of questions that measured teachers' espoused use of instructional practices for teaching students through Direct Instruction and Strategy Instruction. Section IV of the questionnaire was comprised of questions that were used to describe the participants' demographic characteristics. Demographic questions were obtained and modified from past studies with similar lines of inquiry regarding agriculture teacher perceptions of teaching students with disabilities (Giffing, Warnick, Tarpley, & Williams, 2010; Kessell, Wingenbach, & Lawver, 2009). Three researchers that had past experience with instruction of students with disabilities were consulted for additional input during the development of questions used in sections I - III of the instrument. Question stems were sent for them to critique and were refined according to their suggestions for contextual wording.

Measurement Error.

Measurement error is the result of inaccurate answers to questions and stems from poor question wording, survey mode effects, or aspects of the respondents' behavior (Dillman, Smyth, & Christian, 2009). Accordingly, the development of the interview questionnaire was conducted with high regard to accurate measurement and consideration of the developed research objectives. However, it must be acknowledged that social interaction may influence how a respondent answers to interviewer-administered surveys (Dillman, Smyth, & Christian, 2009). Efforts were also made to minimize measurement error

through the use of a questionnaire designed to collect responses through telephone interviews. Interviewer-administered surveys provide greater control in the order of question delivery, which can reduce the influence of question order effects and improve measurement (Dillman, Smyth, & Christian, 2009). Data collection through interviews also maximizes the investment of time when compared to online or mailed survey formats.

Validity.

As reported in two major educational research methodology texts (Ary, Jacobs, & Sorenson, 2010; Gall, Gall, & Borg, 2007), the *Standards for Educational and Psychological Testing* define validity as "the degree to which evidence and theory support the interpretations of test scores entailed by proposed uses of tests" (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999, p. 9). Imbedded within this definition was the central focus of efforts for developing the survey questionnaire—ensuring the validity of the *interpretation* of the collected data.

During the development of the survey questionnaire, both face and content validity were addressed. Face validity, or the verification that the instrument appears to include the content that it purports to measure, and content validity, the verification that the scope of measurement includes all the necessary content, were verified by a panel of experts (Gall, Gall, & Borg, 2007). The panel of experts (n = 6) provided insight toward the inclusion of all necessary components and details needed within the questionnaire (see Appendix C).

Members of the panel were identified from the departments of agricultural education, special education, or educational leadership and policy analysis. Five members of the panel were identified as experts in teacher preparation. Specifically, two experts had extensive experience in observation of classroom instruction. A sixth member of the panel was an expert in collecting data for teachers' espoused theories and theories-in-use. Each member of the panel was provided with a copy of the instrument for review. Their recommendations were then utilized to refine the questionnaire and confirm both face and content validity.

Reliability.

A pilot study was conducted with agriculture teachers (n = 19) that participated in a Curriculum for Agricultural Science Education (CASE) workshop at Kansas State University. The pilot group was selected for similar characteristics to the purposive sample of Missouri agriculture teachers including geographic proximity, high perceived quality of instruction by teacher educators, age, and teaching experience. Test-retest reliability was conducted through two administrations of the questionnaire over a two-week interval (Ary, Jacobs, and Sorenson, 2010). Percentage of agreement was calculated by comparing each item from the first distribution of the instrument to be within one point above or below the teachers' responses two weeks later (see Appendix F). The overall reliability estimate of 92.8% agreement fell above the minimum of .70 (Nunnally, 1978). Reliability estimates for the three categories of questionnaire items (Traditional Instructional Practices, Instructional Practices of Direct Instruction

and Strategy Instruction, and Other Characteristics of Instructional Practice) were also found to be acceptable, with values of 96.5%, 91.7%, and 91.4%, respectively.

Reliability estimates for the interview questionnaire are provided in Table F1 in Appendix F. For the 28 items, 17 items (60.7%) were between 95-100% agreement; 19 items (85.7%) were between 89-100% agreement; and all 28 items (100.0%) were between 84-100% agreement. It is generally suggested that 70% agreement is necessary for an item to be considered reliable (Hartman, 1977; House, House, & Campbell, 1981). The results of the pilot study were used to determine that the instrument exhibited an acceptable level of reliability and was used to study teachers' espoused use of instructional practices for teaching students with disabilities.

Dillman, Smyth, and Christian (2009) suggested that three areas of potential measurement error need to be addressed when developing interviewer-administered questionnaires: (1) social desirability, (2) acquiescence, and (3) other social norms. Thus, three conditions were considered during the development of the interview questionnaire in order to minimize measurement error: (1) presence of the interviewer, (2) use of aural and visual communication effects, and (3) use of scalar questions (Dillman, Smyth, & Christian, 2009). The impact of the presence of an interviewer was minimized by conducting interviews over the telephone. Both aural and visual forms of communication were provided by e-mailing a copy of the survey questionnaire prior to conducting the phone interviews. By receiving the questionnaire beforehand, interviewees had the

opportunity to consider responses without potential influence from the interviewer. Having the questionnaire in-hand also allowed the respondents to visually follow along while the interviewer audibly conducted the phone interview. Finally, the presence of both aural and visual communication were provided in an effort to minimize the potential differences between responses to scalar questions—respondents typically respond more positively to phone or face-to-face interviews as compared to online or mailed surveys (Dillman, Smyth, & Christian, 2009).

Data Collection

Prior to data collection, approval to collect data was requested and received from the Campus Institutional Review Board (IRB) (see Appendix A). In order to meet the recommendations of the IRB, identified teachers were contacted by telephone to request voluntary participation. Following a verbal consent from the teacher, administrators at the school where each participant taught were contacted and written permission was requested (see Appendix B). Once signed permission letters were received from all six school administrators, they were submitted to the IRB via uploaded data files to their website.

Interviewer-administered surveys were conducted while the agriculture teacher was in their classroom and according to accepted methods for data collection (Dillman, Smith, and Christian, 2009). Recommendations used during data collection included both visual and audible interviewer communication for the Likert-type components of the survey. Interviews were audio recorded and

responses were coded twice in order to maximize reliability of responses (see Reliability in Data Analysis).

Classroom Observations – Round Two

The second round of data collection involved three observations of classroom teaching for each participant in the purposive sample of six Missouri secondary agriculture teachers. Observations were documented utilizing partial interval recording (PIR) techniques. Partial interval recording refers to a technique of documenting all observations within predetermined segments of time. For instance, teachers' instructional practice was documented for 20 seconds of each minute of observed instruction.

Momentary time sampling (MTS) has been found to be more accurate than PIR in estimating the duration of the behaviors under observation (Martindale, Kulp, Martindale, & Bauman, 1977). However, while partial interval recording overestimates the duration of observed behaviors, it provides greater specificity to observe behaviors of low incidence (Harrop & Daniels, 1986). Another study confirmed these findings through the study of four students with autism (Meany-Daboul, Roscoe, Bourret, & Ahearn, 2007). Due to teachers' potentially limited use of instructional practices of Direct Instruction and Strategy Instruction, partial interval recording was determined to be the most appropriate method for observing agriculture teachers' typical instructional practice.

Instrumentation–Classroom Observation Form

The classroom instruction observation form (see Appendix G) was modified from the *Classroom Observation Form* developed for the special education thesis *What's Evidence Got to Do with It? An Observational Study of Research-based Instructional Behavior in High School Classes* (Cornett, 2010). In the development of the original form, a search of special education literature was conducted to identify studies that provided evidence regarding appropriate instructional practices in secondary classrooms. For the original observations form, 142 instructional and management activities were identified from special education literature. The activities were then categorized and reviewed by a panel of experts in secondary special education. Four categories with subcategories were identified: (1) student on-task, (2) learning arrangement, (3) transition time, and (4) instructional activity.

The modified forms that were used to study agriculture teachers utilized the same four categories, but instructional activity was organized into three subcategories: Traditional Instructional Practices, Instructional Practices of Direct Instruction and Strategy Instruction, and Other Categories of Instructional Practice. Items within the category of instructional activity were also modified in order to include additional methods of Direct Instruction and Strategy Instruction that would be appropriate in an agricultural education setting. Two versions of the form were developed for the two main instructional settings within agricultural education: (1) the traditional classroom and (2) the laboratory (see Appendix G). An additional side was also developed for the form in order to document unique components for each inclusive agricultural education

environment (i.e. classroom type, course subject, and number of students with an IEP).

Measurement Error.

Great attention was given to establishing validity and reliability of the observation instrument and process. Validity was established through appropriate interrater agreement of observations with a peer observer. Reliability of the observation process was verified through proper observer training and rigorous verification of observation methods.

Validity.

Face and content validity of the observation form were established by a panel of experts (Gall, Gall, & Borg, 2007). The panel experts that reviewed the interview questionnaire from Round One of data collection also served to review the Observation Form. Members of the panel were selected for expertise in the areas of agricultural education and special education, which included faculty members from both departments. Two members of the panel were recruited for expertise and experience in observational data collection. Another member was identified for expertise in teacher preparation and experience with measuring teachers espoused theories and theories-in-use All members of the panel (n = 6) reviewed the instrument to verify that it appeared to measure what it was intended to measure (face validity) and included all necessary content in scope of measurement (content validity).

Two critical components were identified for assessing the validity of direct observation: carefully defining the behavior to be observed and training the

researchers who will make the observations (Ary, Jacobs, & Sorenson, 2010). Additionally, two forms of bias can impact the validity of an observation—observer bias and observer effect on the participants. The instructional practices of interest were clearly defined as components of Direct Instruction and Strategy Instruction. The researcher received three forms of observation training with experts in special education observation, totaling 20 hours, prior to data collection: (1) general instruction and guided reading about the observational research process, (2) shadowing an observer, and (3) developing the process for collecting teachers' observed use of evidence based instructional practice with the assistance of an experience observational researcher. Competency from training was verified through nearly perfect observer agreement on unambiguous examples of instructional practices observed on video (Frick & Semmel, 1978).

Observations of agriculture teachers were recorded and field notes were recorded in the classroom as instruction occurred. A random sample of 5 observations (27.8%) was then coded by a peer reviewer with substantive experience in observation. Interrater agreement was assessed through follow-up observations conducted by the peer observer (Ary, Jacobs, & Sorenson, 2010). Comparison of researcher and peer observer confirmed validity of the data collected in the field through video recordings of in-class instructional practices. Accordingly, comparison of both observers' independent observations yielded an overall validity estimate of .94 (see Table I2 in Appendix I). This estimate was acceptable within the parameters of .80 or higher discussed by Frick and Semmel (1978). Comparison at the level of the three categories within the instrument (Traditional Instructional Practices, Instructional Practices of Direct Instruction

and Strategy Instruction, and Other Characteristics of Instructional Practice) also yielded acceptable validity estimates of .89, .98, and .97, respectively.

Reliability.

Intrarater comparisons are considered appropriate means for calculating reliability estimates for observational data collection (Ary, Jacobs, & Sorenson, 2010). A substantive expert in observational data collection in special education classrooms served as a peer observer. Trial observations were conducted in order to confirm components of the form and provide refinement of observation perspective for both observers. All 18 observations of agriculture teachers' instructional practices were video recorded for later review. Reliability of data collection was verified through intrarater agreement (Ary, Jacobs, & Sorenson, 2010). The code-recode strategy was utilized, in which the researcher coded six randomly selected videos (33.3%), then recoded the videos 1 month later. Comparison of the two sets of coded data revealed acceptable intrarater agreement for the overall instrument (94.1%) and for the three categories within the instrument (see Table I1 in Appendix I): Traditional Instructional Practice (91.1%), Instructional Practices of Direct Instruction and Strategy Instruction (98.3%), and Other Characteristics of Instructional Practice (95.6%).

Data Collection (Conditions of Testing)

Classroom observations of teachers' instructional practices were conducted from April 27, 2011 to May 11, 2011. To encourage the observation of typical instructional practices, once a teacher agreed to participate in the observation phase, they were not informed of which class would be observed on a

given day. For each participant, instructional practices were observed for three full class meetings while utilizing partial interval recording (PIR) techniques to observe 20 seconds of instruction on 1 minute intervals. The researcher then had a 40 second window to record any observations from the 20 observed seconds. Accordingly, 50 20-second observations of instruction would be collected during a 50 minute class. Data were recorded using the observation form which combined multiple previously developed instruments (see Appendix F).

Teachers' instructional practices were also video recorded during observational data collection. Video recording provided the opportunity to review instruction and verify reliability of observations with a peer observer. As an additional incentive for participation, the researcher offered to provide a college preparation session for a class meeting selected by the participating teacher. College preparation sessions were presented at the request of two participating teachers.

Data Analysis.

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) 17.0 for Windows. Research objectives and scale of measurement for the variables guided the selection of data analysis methods. Years of teaching experience, type of certification, preparation to teach students with disabilities, and number of students in class with an IEP were collected to describe the demographic characteristics of the purposive sample of Missouri agriculture teachers (see Tables 1-2).

Objective One.

Agriculture teachers' espoused use of instructional practices for teaching students with disabilities, specifically Direct Instruction and Strategy Instruction were described for objective one. In response to research objective one, means and standard deviations were reported for teachers' (n = 6) responses to the survey of espoused instructional practice (see Table 5). Further, variability was reported as ranges for all nine categories of teacher perception (see Table 5). In addition, teachers' responses were described within each category for espoused use of instructional practices: Traditional Instructional Practices, Instructional Practices of Direct Instruction and Strategy Instruction, and Other Characteristics of Instructional Practice (see Tables 6-8).

Objective Two.

Agriculture teachers' use of instructional practices for teaching all students, including students with disabilities, as observed in inclusive secondary classrooms were described for objective two. Classroom observations of teachers' instructional practice yielded nominal and interval data. Accordingly, observed frequencies and percentages of instance for instructional practices were reported (see Table 9). Percentages were also documented for each teacher's use of instructional practices within Traditional Instructional Practices (see Table 10), Instructional Practices of Direct Instruction and Strategy Instruction (see Table 11), and Other Characteristics (see Table 12). Finally, teachers' observed frequencies and percentages of use were provided within the three categories of Traditional Instructional Practices, Instructional Practices of Direct Instruction

and Strategy Instruction, and Other Characteristics of Instructional Practice for observations of three class session (see Tables 13-15).

Objective Three.

Significant relationships between teachers' espoused instructional practices and their observed instructional practices were described for objective three. Kendall's *tau-b* correlations were used to conduct relational analysis between ordinal characteristics for the sample of fewer than 10 participants (Gall, Gall, & Borg, 2007). Teachers' responses for espoused instructional practice and instructional practice observed in the classroom were converted into rankings for the six participants (see Table 16). Correlations (r_τ) were then calculated between teachers' espoused instructional practices (interviews from Round 1) and observed instructional practices (Round 2) and reported in Table 17. Hopkins' (2002) conventions were adopted for interpreting magnitudes of correlation coefficients. The correlation scale and corresponding convention or descriptor are provided in Table 3.

Table 3

Hopkins Conventions for Correlation Coefficient

Convention	Correlation Coefficient
Nearly Perfect	.90 – 1.00
Very Large	.70 – .89
High	.50 – .69
Moderate	.30 – .49
Low	.10 – .29
Trivial	.00 – .09

The need for an additional research objective was identified during the process of analyzing data. The supplementary objective was needed to provide

greater insight into the characteristics of teachers' espoused use and observed use of instructional practices. More specifically, the fourth research objective was developed to provide a holistic perspective to the participants' grouping pattern according to the characteristics of their espoused use and observed use of instructional practices in the classroom.

Objective Four.

The degree of alignment among teachers' espoused instructional practices and observed instructional practices was determined for objective four. Hierarchical Cluster Analysis was utilized to group teachers into clusters by level of espoused use and observed use of instructional practices in the classroom. Means and standard deviation was reported for each groups' espoused use of instructional practices (see Table 18). Likewise, instance frequencies and instructional percentages were reported for each groups' observed use of instructional practices.

CHAPTER IV

RESULTS

Purpose of the Study

The purpose of this study was to describe Missouri agriculture teachers' espoused instructional practices versus observed use of evidence-based instructional practices when working with students with disabilities.

Research Objectives

The following research objectives were developed to guide the study:

1. Describe agriculture teachers' espoused use of instructional practices for teaching all students, including students with disabilities, with specific attention to Direct Instruction and Strategy Instruction.
2. Describe agriculture teachers' instructional practices for teaching all students, including students with disabilities, as observed in inclusive secondary classrooms.
3. Determine if teachers' espoused instructional practices significantly related to their observed instructional practices.
4. Determine the degree of alignment among teachers' espoused instructional practices and observed instructional practices.

Population and Sample

The target population for this study was secondary school-based agriculture teachers from Missouri (N = 487). The purposive sample of teachers

(n = 6) was selected on the basis of a history of high quality instruction, obtaining preservice preparation in the Department of Agricultural Education at the University of Missouri, teaching experience between 5 and 10 years, and inclusion of students with disabilities in the classes that they taught. The purposive sample was homogenous according to the purposive characteristics and thus non-probabilistic in nature. Data were collected during the Spring 2011 semester.

Research Objective One

For objective one, agriculture teachers' espoused use of instructional practices was described for teaching students with disabilities, including their espoused use of Direct Instruction and Strategy Instruction.

The findings of teachers' perceptions for typical use of 28 instructional practices are summarized in Table 4. Data were ordinal-level since the five-point Likert scale items were not summated. As a group, the purposive sample of teachers reported highest use of "questioning to foster learning" (M = 4.33, SD = 0.82), "providing detailed directions to manage the learning environment" (M = 4.00, SD = 0.63), "orienting students to content by providing daily learning objectives" (M = 4.00, SD = 0.63), "providing simple feedback" (M = 4.00, SD = 0.89), and "reviewing facts or concepts with guiding correction as needed" (M = 4.00, SD = 1.10). The five instructional practices that participants reported to use the least were "having students read out loud to a large group" (M = 1.83, SD = 0.75), "reading out loud to students" (M = 1.83, SD = 0.41), "utilizing video during instruction" (M = 2.17, SD = 0.41), "having students use computer-based

technology to receive instruction" (M = 2.17, SD = 0.75), and "having students read out loud to peers" (M = 2.17, SD = 0.98). Collectively, the participant group was found to espouse regular use (at least once a day) of nine items, occasional use (at least once a week) of 13 items, and rare use (no more than once a month) of the remaining six items (see Table 4).

Table 4

Teachers' espoused use of instructional practices (n = 6)

Instructional Practice	*M*[a]	*SD*	Range (min-max)
Questioning to foster learning	4.33	0.82	3 – 5
Providing detailed directions to manage the learning environment	4.00	0.63	3 – 5
Orienting students to content by providing daily learning objectives	4.00	0.63	3 – 5
Providing simple feedback	4.00	0.89	3 – 5
Reviewing facts or concepts with guiding correction as needed	4.00	1.10	3 – 5
Lecture	3.83	0.98	3 – 5
Guiding student performance of a skill with detailed directions	3.83	0.41	3 – 4
Reviewing procedures through guided opportunities to practice skill	3.67	0.82	3 – 5
Demonstrating a skill pertaining to content with detailed explanation	3.50	0.55	3 – 4
Providing detailed feedback	3.33	0.82	2 – 4
Teaching strategies for other content areas	3.33	1.03	2 – 5
Assessing students through other forms	3.17	0.41	3 – 4
Using computer-based technology for other purposes	3.17	1.17	2 – 5
Providing opportunities for students to independently use content or skills	3.00	0.63	2 – 4
Providing instruction for students to transfer skills into other content areas	3.00	0.89	2 – 4
Using computer-based technology to provide instruction	3.00	0.63	2 – 4
Teaching strategies for reading and writing	2.83	0.75	2 – 4
Teaching strategies for math	2.67	0.52	2 – 3
Providing a graphic organizer	2.50	0.55	2 – 3
Assessing students with traditional tests	2.50	0.55	2 – 3
Having students read to themselves	2.50	0.84	2 – 4
Having students use computer-based technology for assignments	2.50	0.55	2 – 3
Demonstrating a skill pertaining to content without explanation	2.33	1.03	1 – 3
Having students read out loud to peers	2.17	0.98	1 – 3
Having students use computer-based technology to receive instruction	2.17	0.75	1 – 3
Utilizing video during instruction	2.17	0.41	2 – 3
Reading out loud to students	1.83	0.41	1 – 2
Having students read out loud to a large group	1.83	0.75	1 – 3

[a]1 = Never; 2 = Rarely (no more than once a month); 3 = Occasionally (weekly); 4 = Often (daily); 5 = Regularly (more than once a day)

Table 5 was used to display teachers' espoused use of Traditional Instructional Practices: (1) orienting students to content by providing daily learning objectives, (2) lecture, (3) guiding student's performance of a skill with detailed directions, (4) providing detailed directions to manage the learning environment, (5) demonstrating a skill pertaining to content without explanation, (6) questioning to foster learning, (7) assessing students through traditional tests, and (8) assessing students through other forms.

Table 5

Teachers' espoused use of traditional instructional practices (n = 6)

Characteristic	Teacher					
	A	B	C	D	E	F
Orienting students to content by providing daily learning objectives	4	3	5	4	4	4
Lecture	4	5	5	3	3	3
Guiding student's performance of a skill with detailed directions	4	4	4	4	3	4
Providing detailed directions to manage the learning environment	5	4	4	4	3	4
Demonstrating a skill pertaining to content without explanation	3	1	3	3	3	1
Questioning to foster learning	5	4	4	5	5	3
Assessing students with traditional tests	3	2	2	3	3	2
Assessing students through other forms	3	3	4	3	3	3

Note: 1 = Never; 2 = Rarely (no more than once a month); 3 = Occasionally (weekly); 4 = Often (daily); 5 = Regularly (more than once a day)

Table 6 was used to display teachers' responses for espoused use of instructional practices of Direct Instruction and Strategy Instruction: (1) demonstrating a skill pertaining to content with detailed explanation, (2) reviewing facts or concepts with guiding correction as needed, (3) reviewing procedures through guided opportunities to practice skill, (4) providing opportunities for students to independently use content or skills, and (5)

providing instruction for students to transfer learned skills into other content areas.

Table 6

Teachers' espoused use of instructional practices of Direct Instruction and Strategy Instruction (n = 6)

Characteristic	Teacher					
	A	B	C	D	E	F
Demonstrating a skill pertaining to content with detailed explanation	4	4	4	3	3	3
Reviewing facts or concepts with guiding correction as needed	3	5	5	5	3	3
Reviewing procedures through guided opportunities to practice skill	3	3	4	5	3	4
Providing opportunities for students to independently use content or skills	4	2	3	3	3	3
Providing instruction for students to transfer learned skills into other content areas	3	2	4	2	4	3

Note: 1 = Never; 2 = Rarely (no more than once a month); 3 = Occasionally (weekly); 4 = Often (daily); 5 = Regularly (more than once a day)

Table 7 was used to display teachers' responses for espoused use of Other Characteristics of Instructional Practice: (1) reading out loud to students, (2) having students read out loud to a large group, (3) having students read out loud to peers, having students read to themselves, (4) using computer-based technology to provide instruction, (5) using computer-based technology for other purposes, (6) having students use computer-based technology to receive instruction, (7) having students use computer-based technology to complete assignments, and (8) utilizing video during instruction.

Table 7

Teachers' espoused use of other characteristics of instructional practice (n = 6)

Characteristic	Teacher					
	A	B	C	D	E	F
Reading out loud to students	2	1	2	2	2	2
Having students read out loud to a large group (more than 5 students)	2	1	2	3	2	1
Having students read out loud to peers (5 or fewer students)	3	1	3	3	2	1
Having students read to themselves	4	2	2	2	2	3
Using computer-based technology to provide instruction	3	4	2	3	3	3
Using computer-based technology for other purposes	5	4	2	3	3	2
Having students use computer-based technology to receive instruction	2	2	2	3	3	1
Having students use computer-based technology for assignments	3	2	2	3	3	2
Utilizing video during instruction	3	2	2	2	2	2

Note: 1 = Never; 2 = Rarely (no more than once a month); 3 = Occasionally (weekly); 4 = Often (daily); 5 = Regularly (more than once a day)

Teachers' espoused use of instructional practices is summarized in Table 8. Three teachers espoused to use Traditional Instructional Practices often: Teacher A (M = 3.88, SD = 0.83), followed by Teacher C (M = 3.88, SD = 0.99), and Teacher D (M = 3.63, SD = 0.74). Teacher E (M= 3.38, SD = 0.74), Teacher B (M = 3.25, SD = 1.28), and Teacher F (M = 3.00, SD = 1.07) reported occasional use of Traditional Instructional Practices. Two teachers reported to use Instructional Practices of Direct Instruction and Strategy Instruction often: Teacher C (M = 4.00, SD = 0.71), followed by Teacher D (M = 3.60, SD = 1.34). Teacher A (M = 3.40, SD = 0.54), Teacher B (M= 3.20, SD = 1.30), Teacher E (M = 3.20, SD = 0.45), and Teacher F (M = 3.20, SD = 0.45) espoused occasional use of Instructional Practices of Direct Instruction and Strategy Instruction. Finally, two teachers reported occasional use for Other Characteristics of Instructional Practice: Teacher A (M = 3.00, SD = 1.00) and Teacher D (M = 2.67, SD = 0.50).

Teacher E (*M* = 2.44, *SD* = 0.53), Teacher B (*M*= 2.11, *SD* = 1.67), Teacher C (*M* = 2.11, *SD* = 0.33), and Teacher F (*M* = 1.89, *SD* = 0.78) espoused rare use for Other Characteristics of Instructional Practice.

Table 8

Summary of means and standard deviations for teachers' espoused use of instructional practices (n = 6)

Teacher	Traditional Instructional Practices *M (SD)*	Instructional Practices for DI and SI *M (SD)*	Other Characteristics of Instructional Practice *M (SD)*
A	3.88 (0.83)	3.40 (0.54)	3.00 (1.00)
B	3.25 (1.28)	3.20 (1.30)	2.11 (1.67)
C	3.88 (0.99)	4.00 (0.71)	2.11 (0.33)
D	3.63 (0.74)	3.60 (1.34)	2.67 (0.50)
E	3.38 (0.74)	3.20 (0.45)	2.44 (0.53)
F	3.00 (1.07)	3.20 (0.45)	1.89 (0.78)

Note: 1 = Never; 2 = Rarely (no more than once a month); 3 = Occasionally (weekly); 4 = Often (daily); 5 = Regularly (more than once a day)

Research Objective Two

For objective two, agriculture teachers' use of instructional practices was described for teaching all students, including students with disabilities, as observed in inclusive secondary classrooms.

The findings from observations of all six teachers' overall use of instructional practices in inclusive agriculture classes are displayed in Table 9. The highest percentage of teachers' classroom instructional practice incidence was observed for "lecture of new content" (21.4%), "questioning for student response" (15.0%), "guiding students' performance with detailed directions" (11.1%), "providing detailed directions to manage the learning environment" (10.3%), and "using computer-based technology for instructional purposes" (7.5%). As a group, the participants were not observed using five instructional practices (0.0%), which were thus the lowest observed characteristics of instruction: "teaching to transfer", "teacher reading out loud to students", "students reading out loud to peers", "students silently reading to themselves", and "students use computer-based technology to receive instruction."

Table 9

Teachers' observed use of all instructional practices by instance (n = 6)

Characteristic of Instruction	*f*	%
Lecture of new content	273	21.4
Questioning for student response	191	15.0
Providing student's with detailed academic directions	142	11.1
Providing detailed directions to manage the learning environment	131	10.3
Teacher uses computer-based technology for instructional purposes	96	7.5
Lecture of reviewed content	69	5.4
Assessing through other forms	50	3.9
Implicit modeling	40	3.1
Using video during Instruction	39	3.1
Lecture of skill or strategy	38	3.1
Students use computer-based technology to complete assignments	34	2.7
Orienting students to content by providing daily learning objectives	32	2.5
Guided practice	29	2.3
Students engaging in augmented silent reading	25	2.0
Questioning for self-answer	20	1.6
Teacher using computer-based technology for other purposes	19	1.5
Assessing through traditional assessments	18	1.4
Independent practice	17	1.3
Explicit modeling	11	0.9
Teaching to transfer	0	0.0
Teacher reading to students	0	0.0
Students reading out loud to peers	0	0.0
Students silently reading to themselves	0	0.0
Students using computer-based technology to receive instruction	0	0.0
Total	1278	100.0

Teachers' use of Traditional Instructional Practices is reported in Table 10 as percentages calculated by dividing the observed instances for each item by the total number of observations for the individual or group. Within the category of Traditional Instructional Practices, five instructional practices were observed to be used with the highest frequency in the classroom: "lecture of new content" (21.4%), "questioning for student response" (15.0%), "providing student's with detailed academic directions" (11.1%), "providing detailed directions to manage the learning environment" (10.3%), and "lecture of reviewed content" (5.4%). The remaining five instructional practices within the category were observed to be used with the lowest frequency: "assessing through other forms" (3.9%), "implicit modeling" (3.1%),"orienting students to content by providing daily learning objectives" (2.5%),"questioning for self-answer" (1.6%), "assessing through traditional forms" (1.4%). Use of the five instructional practices of highest use was observed by all six teachers, while the five instructional practices of lowest frequency were not observed to be used by at least one of the six participating teachers.

Table 10

Teachers' observed frequency of use for traditional instructional practices (n = 6)

Characteristic of Instruction	Teacher						Group
	A	B	C	D	E	F	
Lecture of new content	29.9	18.8	16.2	9.2	25.6	42.6	21.4
Questioning for student response	10.7	9.9	24.0	16.7	16.6	27.2	15.0
Providing student's with detailed academic directions	5.7	11.5	15.2	32.8	6.7	6.3	11.1
Providing detailed directions to manage the learning environment	12.3	6.3	18.6	6.3	9.5	7.1	10.3
Lecture of reviewed content	7.0	2.6	2.9	3.1	11.3	2.2	5.4
Assessing through other forms	0.0	8.9	0.0	25.8	0.0	0.0	3.9
Implicit modeling	13.5	0.0	0.0	1.6	0.0	2.2	3.1
Orienting students to content by providing daily learning objectives	0.8	2.6	3.9	0.0	3.9	2.7	2.5
Questioning for self-answer	1.2	3.1	0.0	0.0	2.8	1.3	1.6
Assessing through traditional forms	0.0	8.9	0.0	0.0	6.4	0.0	1.4

Note: Values calculated as percentage of instructional practice for participants or the group.

Teachers' use of Instructional Practices of Direct Instruction and Strategy Instruction is reported in Table 11 as percentages calculated by dividing the observed instances for each item by the total number of observations for the individual or group. The instructional practice with the highest frequency of use within the category was "lecture of a skill or strategy" (3.0%), followed by "guided practice" (2.3%), "independent practice" (1.3%), and "explicit modeling" (0.9%). "teaching to transfer" (0.0%) was not observed to be used by the teachers.

Table 11

Teachers' observed frequency of use for instructional practices of Direct Instruction and Strategy Instruction (n = 6)

Characteristic of Instruction	Teacher						Total
	A	B	C	D	E	F	
Lecture of a skill or strategy	2.5	4.7	7.8	0.0	0.0	3.1	3.0
Guided practice	1.2	4.7	0.0	2.3	0.0	6.3	2.3
Independent practice	0.0	8.9	0.0	0.0	0.0	0.0	1.3
Explicit modeling	0.0	2.1	0.0	0.0	0.0	0.0	0.9
Teaching to transfer/Generalization	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: Values calculated as percentage of instructional practice for participants or the group.

Teachers' use of Other Practices of Instructional Practice is reported in Table 12 as percentages calculated by dividing the observed instances for each item by the total number of observations for the individual or group. Within the category of Other Practices of Instructional Practice, five instructional practices were observed to be used by teachers with the highest frequency: "teacher using computer-based technology for instructional purposes" (7.5%), "using video during instruction" (3.1%), "students using computer-based technology to complete assignments" (2.7%), "students engage in augmented silent reading" (2.0%), "teacher using computer-based technology for other purposes" (1.5%). The instructional practices observed in the lowest frequency within the category were not observed to be used by the teachers (0.0%): "teacher reading out loud to students", "students reading out loud to peers", "students silently reading to themselves", and "students use computer-based technology to receive instruction."

Table 12

Teachers' observed frequency of use for other characteristics of instructional practice by instance (n = 6)

Characteristic of Instruction	Teacher						Total
	A	B	C	D	E	F	
Teacher using computer-based technology for instructional purposes	7.4	12.6	5.9	0.0	13.1	2.2	7.5
Teacher using video during instruction	5.7	15.7	11.3	0.0	5.7	0.0	3.1
Students using computer-based technology to complete assignments	0.0	0.0	0.0	0.0	0.0	15.2	2.7
Students engaging in augmented silent reading	0.0	0.0	0.0	0.0	8.8	0.0	2.0
Teacher using computer-based technology for other purposes	2.0	3.1	1.0	0.0	2.1	0.0	1.7
Teacher reading to students	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Students reading out loud to peers	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Students silently reading to themselves	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Students using computer-based technology to receive instruction	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: Values calculated as percentage of instructional practice for participants or the group.

Table 13 displays frequencies and percentages for teachers' observed use of Traditional Instructional Practices (e.g., managing the classroom, providing learning objectives, questioning to foster learning, lecturing, implicit modeling, and assessing students). The percentage of instruction was calculated by dividing the number of instances that an instructional practice was observed (f^a) by the total number of observations for the individual or group (f^b). Traditional Instructional Practices were observed to be used by the group of agriculture teachers for 75.7% of classroom instruction. The percentage of instructional time varied across the three observations for all six teachers. However, Teacher D was found to use Traditional Instructional Practices with the highest regularity (93.8%), followed by Teacher A (81.1%), Teacher C (80.9%), Teacher F (72.3%), Teacher E (70.3%), and Teacher B (63.2%).

Table 13

Observations of teachers' traditional instructional practices (n = 6)

	Observation 1			Observation 2			Observation 3			Total		
	f^a	f^b	%	f^a	f^b	%	f^a	f^b	%	f^a	f^b	%
Teacher A	50	88	56.8	73	76	96.1	75	80	93.5	198	244	81.1
Teacher B	33	40	80.5	53	103	51.5	36	48	73.5	122	191	63.2
Teacher C	59	74	79.7	62	82	75.6	44	48	91.7	165	204	80.9
Teacher D	28	34	82.4	61	62	98.4	31	32	96.9	120	128	93.8
Teacher E	66	97	66.0	70	102	68.6	63	84	75.0	199	283	70.3
Teacher F	63	78	80.8	43	84	51.2	56	62	90.3	162	224	72.3
Total										966	1274	75.7

Note: Traditional instructional practices included: managing the classroom, providing learning objectives, questioning to foster learning, lecturing, implicit modeling, and assessing students.

[a]Frequency for use of traditional instructional practices.

[b]Frequency of total observations.

Table 14 displays frequencies and percentages for teachers' observed use of Instructional Practices of Direct Instruction (DI) and Strategy Instruction (SI) (e.g., obtaining student commitment, explicit modeling, providing guided practice, providing independent practice, and teaching to transfer). The percentage of instruction was calculated by dividing the number of instances that an instructional practice was observed (f^a) by the total number of observations for the individual or group (f^b). Instructional Practices of DI and SI were observed to be used by the agriculture teachers for 7.5% of classroom instruction. The percentage of instructional time varied between the teachers. Teacher B was found to use Instructional Practices of DI and SI with the highest regularity (20.4%), followed by Teacher F (10.3%), Teacher C (7.8%), Teacher D (6.3%), Teacher A (3.7%), and Teacher E (0.0%).

Table 14

Observations of teachers' instructional practices of Direct Instruction and Strategy Instruction (n =6)

	Observation 1			Observation 2			Observation 3			Total		
	f^a	f^b	%	f^a	f^b	%	f^a	f^b	%	f^a	f^b	%
Teacher A	1	88	1.1	3	76	3.9	5	80	6.3	9	244	3.7
Teacher B	4	40	10.0	24	103	23.3	11	48	22.9	39	191	20.4
Teacher C	7	74	9.5	5	82	6.1	4	48	8.3	16	204	7.8
Teacher D	6	34	17.6	1	62	1.6	1	32	3.1	8	128	6.3
Teacher E	0	97	0.0	0	102	0.0	0	84	0.0	0	283	0.0
Teacher F	15	78	19.2	2	84	2.4	6	62	9.7	23	224	10.3
Total										95	1274	7.5

Note: Instructional practices for students with disabilities included obtaining student commitment, explicit modeling, providing guided practice, providing independent practice, and teaching to transfer.

[a]Frequency for use of instructional practices of Direct Instruction and Strategy Instruction.

[b]Frequency of total observations.

Table 15 displays frequencies and percentages for teachers' observed use of Other Characteristics of Instructional Practices (e.g., characteristics of reading in the classroom, use of computers, and using video during instruction). The percentage of instruction was calculated by dividing the number of instances that an instructional practice was observed (f^a) by the total number of observations for the individual or group (f^b). Other Characteristics of Instructional Practice were found to be 16.7% of observed classroom instruction. The percentage of instructional time varied between the teachers. Teacher E was found to use Other Characteristics of Instructional Practices with the highest regularity (29.7%), followed by Teacher F (17.4%), Teacher B (15.7%), Teacher A (15.2%), Teacher C (11.3%), and Teacher D (0.0%).

Table 15

Observations of other characteristics of instructional practice (n = 6)

	Observation 1			Observation 2			Observation 3			Total		
	f^a	f^b	%	f^a	f^b	%	f^a	f^b	%	f^a	f^b	%
Teacher A	37	88	42.0	0	76	0.0	0	80	0.0	37	244	15.2
Teacher B	3	40	7.5	26	103	25.2	1	48	2.1	30	191	15.7
Teacher C	8	74	10.8	15	82	18.3	0	48	0.0	23	204	11.3
Teacher D	0	34	0.0	0	62	0.0	0	32	0.0	0	128	0.0
Teacher E	31	97	32.0	32	102	31.4	21	84	25.0	84	283	29.7
Teacher F	0	78	0.0	39	84	46.4	0	62	0.0	39	224	17.4
Total										213	1274	16.7

Note: Other characteristics of instructional practice include: characteristics of reading in the classroom (teacher reading and instruction for students to read), technology use (teacher utilizing computers and instruction for students to use computers), and using video during instruction.

[a]Frequency for use of other characteristics of instructional practice.

[b]Frequency of total observations.

Research Objective Three

For objective three, agriculture teachers' espoused use of instructional practices was compared to their observed instructional practices to determine if significant relationships existed.

Data from objectives one and two were used to determine ranked orders of the purposive sample of teachers for both espoused use and observed use of instructional practices in all three categories: Traditional Instructional Practices, Instructional Practices of Direct Instruction and Strategy Instruction, and Other Characteristics of Instructional Practice (see Table 16). Visual comparison of the rankings provides an initial indication of the relationship between each participant's espoused use within a category of instructional practice with their observed use of instructional practice. Only three instances of a direct match were identified: Traditional Instructional Practices for Teacher A, Other Characteristics of Instructional Practice for Teacher D, and Instructional Practices of Direct Instruction (DI) and Strategy Instruction (SI) for Teacher E. In contrast, the largest discrepancy was found in Instructional Practices of DI and SI for Teacher B.

Table 16

Comparison of teachers' rank for espoused instructional practices and observed instructional practices (n = 6)

Instructional Practice	Teacher A		Teacher B		Teacher C		Teacher D		Teacher E		Teacher F	
	Esp	Obs	Esp	Obs	Esp	Obs	Esp	Obs	Esp	Obs	Esp	Obs
Traditional Instructional Practices[a]	1*	2	4*	6	1*	3	3	1	4*	5	6	4
Instructional Practices of DI and SI[b]	3	5	6*	1	1	3	2	4	6*	6	6*	2
Other Characteristics of Instructional Practice[c]	1	4	4*	3	4*	6	2	6	3	1	6	2

Note: 1 = Highest use; 6 = Lowest use

[a]Traditional instructional practices included: managing the classroom, providing learning objectives, questioning to foster learning, lecturing, implicit modeling, and assessing students.

[b]Instructional practices for students with disabilities included obtaining student commitment, explicit modeling, providing guided practice, providing independent practice, and teaching to transfer.

[c]Other characteristics of instructional practice include: characteristics of reading in the classroom (teacher reading and instruction for students to read), technology use (teacher utilizing computers and instruction for students to use computers), and using video during instruction.

*Tie in ranking

The characteristics of espoused and observed instructional practices were respectively ordinal and ratio in nature. With the additional quality of a sample smaller than 10 (n = 6), Kendall's *tau-b* correlation was used to calculate the correlation coefficient. Hopkins' (2002) conventions were used to describe the magnitude of the calculated relationships. Table 17 displays Kendall's *tau-b* correlations between teachers' espoused use of instructional practices and observed use of instructional practices in the classroom. No significant correlations were found between teachers espoused use and observed use of instructional practices. The largest correlation was found between teachers' espoused use and observed use of Traditional Instructional Practices, with a positive moderate correlation (r_τ = .36). A trivial correlation (r_τ = .00) was found for the relationship between teachers' espoused use and observed use of Instructional Practices of Direct Instruction (DI) and Strategy Instruction. Finally, a negative moderate correlation (r_τ = -.33) was found between teachers' espoused use and observed use of Other Characteristics of Instructional Practice.

Table 17

Correlations (r_τ) of teachers' espoused instructional practices and observed instructional practices.

Characteristic Category	r_τ	Descriptor[a]
Traditional Instructional Practices	.36	Moderate
Instructional Practices of DI and SI	.00	Trivial
Other Characteristics of Instructional Practice	-.33	Moderate

[a]Hopkins' (2002) descriptors

Research Objective Four

For objective four, agriculture teachers' espoused use of instructional practices and their observed instructional practices were calculated to determine if significant relationships existed.

Hierarchical Cluster Analysis was utilized to determine if data from participating teachers' instructional practices yielded significant relationships. The analysis yielded two distinct groups within the sample of teachers: Cluster A and Cluster B. Means and standard deviations for teachers' espoused use are provided for comparison of the two clusters of teachers (see Table 18). Frequencies and percentages of instructional practices are also provided for the two clusters of teachers. In addition to Table 19, a diagram of association and a dendrogram are provided to illustrate the relationships that were identified between teachers (see Appendix J). Both clusters of teachers espoused lower use of all three categories of instructional practice than their observed use of the instructional practices in the classroom. Additionally, Cluster A reported higher espoused use than Cluster B for all three categories of instructional practice.

Specifically, teachers in Cluster A espoused to use Traditional Instructional Practices (M = 3.79, SD = 0.49) and Instructional Practices of Direct Instruction (DI) and Strategy Instruction (SI) (M = 3.67, SD = 0.86) often, and they espoused occasional use of Other Characteristics of Instructional Practice (M = 2.59, SD = 0.62). Classroom observation yielded evidence that teachers in Cluster A regularly use all three categories of instructional practice in a typical day (83.9%, 5.7%, and 10.4% of instruction, respectively). The greatest

discrepancy between espoused use and observed use was found in the category of Other Characteristics of Instructional Practice for teachers in Cluster A.

As a group, teachers in Cluster B espoused to use Traditional Instructional Practices (M = 3.21, SD = 0.70) and Instructional Practices of Direct Instruction (DI) and Strategy Instruction (SI) (M = 3.20, SD = 0.78) occasionally, and they espoused rare use of Other Characteristics of Instructional Practice (M = 2.15, SD = 0.61). Yet, regular use of all three categories of instructional practice (69.2%, 8.9%, and 21.9% of instruction, respectively) was identified through classroom observation of teachers in Cluster B. Finally, the greatest discrepancy between espoused use and observed use was found in the category of Other Categories of Instructional Practice for teachers in Cluster B.

Table 18

Hierarchical Cluster Analysis by levels of espoused instructional practice and observed instructional practice

Characteristics	Cluster A (N = 3)	Cluster B (N = 3)
Traditional Instructional Practice[a]		
M[a] (SD)[b]	3.79 (0.49)	3.21 (0.70)
f (%)[c]	483 (83.9)	483 (69.2)
Instructional Practices of Direct Instruction and Strategy Instruction		
M[a] (SD)[b]	3.67 (0.86)	3.20 (0.78)
F (%)[c]	33 (5.7)	62 (8.9)
Other Characteristics of Instructional Practice		
M[a] (SD)[b]	2.59 (0.62)	2.15 (0.61)
f (%)[c]	60 (10.4)	153 (21.9)

Cluster A: Teachers A, C, & D
Cluster B: Teachers B, E, & F
[a]1 = Never; 2 = Rarely (no more than once a month); 3 = Occasionally (weekly); 4 = Often (daily); 5 = Regularly (more than once a day)
[b]As espoused by teachers
[c]As observed in the classroom

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Purpose of the Study

The purpose of this study was to describe Missouri agriculture teachers' espoused instructional practices versus observed use of evidence-based instructional practices when working with students with disabilities.

Research Objectives

The following research objectives were developed to guide the study:

1. Describe agriculture teachers' espoused use of instructional practices for teaching all students, including students with disabilities, with specific attention to Direct Instruction and Strategy Instruction.

2. Describe agriculture teachers' instructional practices for teaching all students, including students with disabilities, as observed in inclusive secondary classrooms.

3. Determine if teachers' espoused instructional practices significantly related to their observed instructional practices.

4. Determine the degree of alignment among teachers' espoused instructional practices and observed instructional practices.

Limitations of the Study

The purposive sample of teachers was selected on the basis of three characteristics: institution of preservice preparation, years of teaching experience, and inclusion of students with disabilities in the classroom. While these characteristics helped to identify a homogenous populations of teachers to sample from, it is possible that some participants may have limited previous knowledge and skill associated with Direct Instruction or Strategy Instruction. As such, observations for the purposive sample of agriculture teachers did not necessarily represent all Missouri agriculture teachers. As a result, findings are not generalizable beyond the sample group.

The focus of the study, the use of evidence-based instructional practices by secondary agriculture teachers, was limited to observing the use of Direct Instruction and Strategy Instruction. Additionally, with the intent to describe teachers' espoused use and observed use of instructional practices for typical classroom instruction, it was acknowledged that participants may not implement Direct Instruction and Strategy Instruction in the classroom. Student and teacher response to the presence of the researcher may have impacted teachers' instructional practices. In an effort to describe typical instructional practice, a minimum of three class meetings were observed in order to identify consistencies. Finally, observations of classroom instruction conducted within a single school day. However, the researcher requested and scheduled the visit on a day that the teacher targeted as a typical school day for both themselves and their students.

Research Design

The design of this descriptive study incorporated interviews and in-class observations to gather quantitative data. Considering that special education related research within agricultural education has provided limited description of teaching practice, the purpose of this investigation of Missouri agriculture teachers was to describe the instructional practices both espoused by teachers and observed in the classroom.

In this study, two forms of data collection were performed: a phone interview that yielded responses of espoused use on five-point Likert scaled items and in class observations of teachers' use of instructional practices. For the phone interview component of this investigation, data collection was focused on gathering teachers' perceptions of instructional practices for teaching students with disabilities. The classroom observation portion of data collection was intended to describe teachers' instructional practices for teaching students with disabilities within inclusive agriculture classrooms. Observations focused on evidence-based instructional practices of Direct Instruction and Strategy Instruction provided for students with disabilities. These observations provided the data for comparison of teachers' espoused theories of instructional practice, or those they claim to use, and theories-in-use, or those that are actually provided in practice, for students with disabilities.

Population and Sample

The 2010-2011 Agricultural Education Directory served as a frame of the agriculture teacher population in Missouri. Contact information was also

provided in the directory, including the school district, mailing address, and e-mail address for each teacher, which was critical in establishing contact for data collection. A purposive sample was also selected in order to limit the influence of potentially confounding variables. Due to the purposive nature of this sample, findings were not generalized to larger populations.

From the existing frame, a homogenous sample of teachers (n = 6) was selected on the basis of three characteristics: institution of preservice preparation, years of teaching experience, and inclusion of students with disabilities in the classroom. Graduates from the Agricultural Education-Teacher Certification Emphasis degree program at the University of Missouri were selected for the purposive sample. Using teachers that graduated from the same institution also ensured that the preparation they received for teaching students with learning disabilities was consistent. Teachers included in the sample also had 5 to 10 years of teaching experience. A five year minimum was established because that is that the level of teaching experience required for teachers to obtain tenure in Missouri. Likewise, a maximum of 10 years of teaching experience was set due to the passage of legislation (NCLB, 2001) and the coinciding implementation of coursework that focused on teaching students with learning disabilities in the Teacher Development Program at the University of Missouri. Finally, teachers identified for the sample had classes that included students with disabilities, determined by the presence of an IEP. A faculty member that taught all of the prospective participants at the postsecondary level and the former state professional development specialist were consulted in the

identification of the purposive sample (n = 6) from all teachers that met the three criteria for consideration (n = 35).

Instrumentation

Observation Form.

The interview questionnaire (see Appendix E) was designed to gather agriculture teachers' perceptions regarding their espoused use of evidence-based instructional practices for teaching students with disabilities. The interview questionnaire was developed with high regard to accurate measurement and consideration of the developed research objectives. However, it must be acknowledged that social interaction may influence how a respondent answers to interviewer-administered surveys (Dillman, Smyth, & Christian, 2009). Efforts were also made to minimize measurement error through the use of a questionnaire designed to collect responses through telephone interviews.

The researcher-administered survey questionnaire consisted of four sections. All questions in Sections I - III aligned with the categories to be observed in classroom instruction during the second round of data collection (see Observation Form in Appendix F). Sections I and II of the questionnaire were designed to collect teachers' perceptions of effectiveness and skill level for 28 instructional practices. Section III of the survey questionnaire consisted of questions that measured teachers' espoused use of instructional practices, including evidence-based practices of Direct Instruction and Strategy Instruction. The categories of evidence-based instruction were identified in a previous study of special educators' use of evidence-based instructional practices (Cornett,

2010). Section IV of the questionnaire was comprised of questions that were used to describe the participants' demographic characteristics. Demographic questions were obtained and modified from past studies with similar lines of inquiry regarding agriculture teacher perceptions of teaching students with disabilities (Giffing, Warnick, Tarpley, & Williams, 2010; Kessell, Wingenbach, & Lawver, 2009). Three researchers that had past experience with instruction of students with disabilities were consulted for additional input during the development of questions used in sections I - III of the instrument. Question stems were sent for them to critique and were refined according to their suggestions for contextual wording.

Data were also collected regarding agriculture teachers' use of instructional practices through direct observation in the classroom. The classroom instruction observation form was modified from the *Classroom Observation Form* developed for the special education thesis *What's Evidence Got to Do with It? An Observational Study of Research-based Instructional Behavior in High School Classes* (Cornett, 2010). Four categories with subcategories were identified: (1) student on-task, (2) learning arrangement, (3) transition time, and (4) instructional activity. The final revised observation form consisted of 28 areas of observation and two versions of the form were developed (see Appendix G). Form A was designed for observing instruction in the traditional classroom setting, while Form B was developed for observing instruction in the laboratory setting.

Measurement Error.

Validity.

During the development of the survey questionnaire, both face and content validity were addressed. A panel experts (n = 6) provided insight toward the inclusion of all necessary components and details needed within the questionnaire (see Appendix C). Members of the panel were identified from the departments of agricultural education, special education, or educational leadership and policy analysis. Five members of the panel were identified as experts in teacher preparation. Their recommendations were then utilized to refine the questionnaire and confirm both face and content validity.

Reliability.

A pilot study was conducted with agriculture teachers (n = 19) that participated in a Curriculum for Agricultural Science Education (CASE) workshop at Kansas State University. The pilot group was selected for similar characteristics to the purposive sample of Missouri agriculture teachers including geographic proximity, high perceived quality of instruction (by teacher educators), age, and teaching experience. Test-retest reliability was conducted through two administrations of the questionnaire over a two-week interval (Ary, Jacobs, and Sorenson, 2010). Percentage of agreement was calculated by comparing each item from the first distribution of the instrument to be within one point above or below the teachers' responses two weeks later (see Table F1). The overall reliability estimate of 92.8% agreement fell above the minimum of .70 (Nunnally, 1978). Reliability estimates for Traditional Instructional Practices

(96.5%), Instructional Practices of Direct Instruction and Strategy Instruction (91.7%), and Other Characteristics of Instructional Practice (91.4%) categories were also found to be acceptable.

Observation Form.

Great attention was also given to verifying validity and reliability of observations of teachers in the classroom. The researcher received three forms of observation training with experts in special education observation, totaling 20 hours, prior to data collection: (1) general instruction and guided reading about the observational research process, (2) shadowing an observer, and (3) developing the process for collecting teachers' observed use of evidence based instructional practice with the assistance of an experience observational researcher. Validity of the observation process was verified through proper observer training and rigorous verification of observation methods. Reliability was established through appropriate interrater agreement of observations with a peer observer.

Validity.

Face and content validity of the observation form were established by a panel of experts (Gall, Gall, & Borg, 2007). The same panel of experts that reviewed the survey questionnaire also confirmed validity of the observation form. Members of the panel were selected for expertise in the areas of agricultural education and special education, which included faculty members from both departments. All six members of the panel (see Appendix C) reviewed the instrument to verify that it appeared to measure what it was intended to

measure (face validity) and included all necessary content in scope of measurement (content validity).

Validity of data collection was verified through interrater agreement (Ary, Jacobs, & Sorenson, 2010). Interrater agreement was assessed through follow-up observations by the peer observer (Ary, Jacobs, & Sorenson, 2010). A random sample of 5 classes (27.8%) was coded by a peer reviewer with substantive experience in observation. Comparison of researcher and peer observer confirmed validity of the data collected in the field through video recordings of in-class instructional practices. Accordingly, comparison of both observers' independent observations yielded a reliability estimate of .92 (see Appendix I). This estimate was acceptable within the parameters of .80 or higher discussed by Frick and Semmel (1978).

Reliability.

Intrarater reliability is considered an appropriate method for calculating reliability estimates for observational data collection (Ary, Jacobs, & Sorenson, 2010). All 18 observations of agriculture teachers' instructional practices were video recorded for later review. The code-recode strategy was utilized, in which the researcher coded six randomly selected videos (33.3%) then recoded the videos 1 month later. Comparison of the two sets of coded data revealed intrarater agreement of 93.3%.

Data Collection

Prior to data collection, approval to collect data was requested and received from the Campus Institutional Review Board (IRB) (see Appendix A). In

order to meet the recommendations of the IRB, identified teachers were contacted by telephone to request voluntary participation. Following a verbal consent from the teacher, administrators at the school where each participant teaches were contacted and written permission was requested (see Appendix B). Once signed permission letters were received from all six school administrators, they were submitted to the IRB via uploaded data files to their website. Interviewer-administered surveys were conducted while the agriculture teacher was in their classroom and according to accepted methods for data collection (Dillman, Smith, and Christian, 2009). Recommendations used during data collection included both visual and audible interviewer communication for the Likert-type components of the survey. Interviews were audio recorded and responses were coded twice in order to maximize reliability of responses.

The second round of data collection involved three observations of classroom teaching for each participant in the purposive sample of six Missouri secondary agriculture teachers. Observations were documented utilizing partial interval recording (PIR) techniques. Partial interval recording refers to a technique of documenting all observations within predetermined segments of time. Due to potential limited use of instructional practices of Direct Instruction and Strategy Instruction, partial interval recording was determined to be the preferred method for observing agriculture teachers' typical instructional practice (Harrop & Daniels, 1986; Meany-Daboul, Roscoe, Bourret, & Ahearn, 2007; Powell, Martindale, Kulp, Martindale, & Bauman, 1977

Classroom observations of teachers' instructional practices were conducted from April 27, 2011 to May 11, 2011. To encourage the observation of

typical instructional practices, once a teacher agreed to participate in the observation phase, they were not informed of which class would be observed on a given day. For each participant, instructional practices were observed for three full class meetings while utilizing partial interval recording (PIR) techniques to observe 20 seconds of instruction on 1 minute intervals. The researcher then had a 40 second window to record any observations from the 20 observed seconds. Accordingly, fifty 20-second observations of instruction would be collected during a 50 minute class. Data were recorded using the observation form which combined multiple previously developed instruments (see Appendix G). Teacher's instructional practices were video recorded during observational data collection. Video recording provided the opportunity to review instruction and verify reliability of observations with a peer observer.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) 17.0 for Windows. In response to research objective one, means and standard deviations were reported for teachers' (n = 6) responses to the survey of espoused instructional practice (see Table 4). Further, variability was reported as ranges for all 28 items from the questionnaire (see Table 4). In addition, teachers' espoused use was also reported in three categories of instructional practice: Traditional Instructional Practices, Instructional Practices of Direct Instruction and Strategy Instruction, and Other Categories of Instructional Practice (see Tables 5-7).

For objective two, classroom observations of teachers' instructional practice yielded nominal and interval data. Accordingly, observed frequencies and percentages of instance for instructional practices were reported (see Table 9). In addition, teachers' observed use was also reported both as individual items of instructional practice (see Tables 10-12) and by the three observations of teachers (see Tables 13-15) in three categories of instructional practice: Traditional Instructional Practices, Instructional Practices of Direct Instruction and Strategy Instruction, and Other Categories of Instructional Practice. Traditional instructional practices included (1) managing the classroom, (2) providing learning objectives, (3) questioning to foster learning, lecturing, (4) implicit modeling, and (5) assessing students. Instructional practices for students with disabilities included (1) obtaining student commitment, (2) explicit modeling, (3) providing guided practice, (4) providing independent practice, and (5) teaching to transfer. Other characteristics of instructional practice include (1) characteristics of reading in the classroom, (2) technology use, and (3) using video during instruction.

For objective 3, Kendall's *tau-b* correlations may be used to determine relational analysis between ordinal characteristics for samples of fewer than 10 participants (Gall, Gall, & Borg, 2007). Teachers' responses for espoused instructional practice and instructional practice observed in the classroom were transformed into rankings for the six participants. Correlations (r_τ) were then calculated between teachers' espoused instructional practices (interviews from Round 1) and observed instructional practices (Round 2) and reported in Table 17. Hopkins' (2002) conventions were adopted for interpreting magnitudes of

correlation coefficients. The correlation scale and corresponding convention or descriptor are provided in Table 4. The need for an additional research objective was identified during the process of analyzing data. The supplementary objective was needed to provide greater insight into the characteristics of teachers' espoused use and observed use of instructional practices. More specifically, the fourth research objective was developed to provide a holistic perspective to the participants' grouping pattern according to the characteristics of their espoused use and observed use of instructional practices in the classroom.

For objective four, Hierarchical Cluster Analysis was utilized to group teachers into clusters by level of espoused use and observed use of instructional practices in the classroom. Means and standard deviation were reported for each groups' espoused use of instructional practices. Likewise, instance frequencies and instructional time percentages were reported for each groups' observed use of instructional practices.

Summary of Findings

Objective One.

For objective one, agriculture teachers' espoused use of instructional practices was described for teaching students with disabilities, including their espoused use of Direct Instruction and Strategy Instruction.

The findings of teachers' perceptions for typical use of 28 instructional practices are summarized in Table 4. Data were ordinal-level since the five-point Likert scale items were not summated. As a group, the purposive sample of

teachers reported highest use of "questioning to foster learning" (*M* = 4.33, *SD* = 0.82), "providing detailed directions to manage the learning environment" (*M* = 4.00, *SD* = 0.63), "orienting students to content by providing daily learning objectives" (*M* = 4.00, *SD* = 0.63), "providing simple feedback" (*M* = 4.00, *SD* = 0.89), and "reviewing facts or concepts with guiding correction as needed" (*M* = 4.00, *SD* = 1.10). The five instructional practices that participants reported to use the least were "having students read out loud to a large group" (*M* = 1.83, *SD* = 0.75), "reading out loud to students" (*M* = 1.83, *SD* = 0.41), "utilizing video during instruction" (*M* = 2.17, *SD* = 0.41), "having students use computer-based technology to receive instruction" (*M* = 2.17, *SD* = 0.75), "having students read out loud to peers" (*M* = 2.17, *SD* = 0.98). Collectively, the participant group was found to espouse regular use (at least once a day) of nine items, occasional use (at least once a week) of 13 items, and rare use (no more than once a month) of the remaining six items (see Table 4). Teachers' individual responses for espoused use of Traditional Instructional Practices, Instructional Practices of Direct Instruction and Strategy Instruction, and Other Characteristics of Instructional Practice are provided in Tables 5 through 7, respectively.

Table 8 was used to display the means and standard deviations for teachers' espoused use of instructional practices from the three categories: Traditional Instructional Practices, Instructional Practices of Direct Instruction and Strategy Instruction, and Other Characteristics of Instruction. Three teachers espoused to use Traditional Instructional Practices often: Teacher A (*M* = 3.88, *SD* = 0.83), followed by Teacher C (*M* = 3.88, *SD* = 0.99), and Teacher D

(*M* = 3.63, *SD* = 0.74). Teacher E (*M*= 3.38, *SD* = 0.74), Teacher B (*M* = 3.25, *SD* = 1.28), and Teacher F (*M* = 3.00, *SD* = 1.07) reported occasional use of Traditional Instructional Practices. Three teachers reported to use Instructional Practices of Direct Instruction and Strategy Instruction often: Teacher C (*M* = 4.00, *SD* = 0.71), followed by Teacher D (*M* = 3.60, *SD* = 1.34), and Teacher A (*M* = 3.40, *SD* = 0.54). Teacher B (*M*= 3.20, *SD* = 1.30), Teacher E (*M* = 3.20, *SD* = 0.45), and Teacher F (*M* = 3.20, *SD* = 0.45) espoused occasional use of Instructional Practices of Direct Instruction and Strategy Instruction. Two teachers reported occasional use for Other Characteristics of Instructional Practice: Teacher A (*M* = 3.00, *SD* = 1.00) and Teacher D (*M* = 2.67, *SD* = 0.50). Teacher E (*M* = 2.44, *SD* = 0.53), Teacher B (*M*= 2.11, *SD* = 1.67), Teacher C (*M* = 2.11, *SD* = 0.33), and Teacher F (*M* = 1.89, *SD* = 0.78) espoused rare use for Other Characteristics of Instructional Practice.

Objective Two.

The findings from observations of teachers' use of instructional practices in inclusive agriculture classes are displayed in Table 9. The highest percentage of teachers' classroom instructional practice was observed for "lecture of new content" (21.4%), "questioning for student response" (15.0%), "guiding students' performance with detailed directions" (11.1%), "providing detailed directions to manage the learning environment" (10.3%), and "using computer-based technology for instructional purposes" (7.5%). As a group, the participants were not observed using five instructional practices (0.0%), which were thus the lowest observed characteristics of instruction: "teaching to transfer ", "teacher reading

out loud to students“, “students reading out loud to peers“, “students silently reading to themselves“, and “students use computer-based technology to receive instruction.”

Teachers’ use of Traditional Instructional Practices is reported in Table 10 as instances observed in the classroom with corresponding percentages of use. Within the category of Traditional Instructional Practices, five instructional practices were observed to be used with the highest frequency in the classroom: “lecture of new content” (21.4%), “questioning for student response” (15.0%), “providing student’s with detailed academic directions” (11.1%), “providing detailed directions to manage the learning environment” (10.3%), and “lecture of reviewed content” (5.4%). The remaining five instructional practices within the category were observed to be used with the lowest frequency: “assessing through other forms” (3.9%), “implicit modeling” (3.1%),”orienting students to content by providing daily learning objectives” (2.5%),”questioning for self-answer” (1.6%), “assessing through traditional forms” (1.4%). Use of the five instructional practices of highest use was observed by all six teachers, while the five instructional practices of lowest frequency were not observed to be used by at least one of the six participating teachers.

Teachers’ use of Instructional Practices of Direct Instruction and Strategy Instruction is reported in Table 11 as instances observed in the classroom with corresponding percentages of use. The instructional practice with the highest frequency of use within the category was “lecture of a skill or strategy” (3.0%), followed by “guided practice” (2.3%), “independent practice” (1.3%), and “explicit

modeling" (0.9%). "Teaching to transfer" (0.0%) was not observed to be used by the teachers.

Teachers' use of Other Practices of Instructional Practice is reported in Table 12 as percentages of observed use in the classroom. Within the category of Other Practices of Instructional Practice, five instructional practices were observed to be used by teachers with the highest frequency: "teacher using computer-based technology for instructional purposes" (7.5%), "using video during instruction" (3.1%), "students using computer-based technology to complete assignments" (2.7%), "students engage in augmented silent reading" (2.0%), "teacher using computer-based technology for other purposes" (1.5%). The instructional practices observed in the lowest frequency within the category were not observed to be used by the teachers (0.0%): "teacher reading out loud to students", "students reading out loud to peers", "students silently reading to themselves", and "students use computer-based technology to receive instruction."

Table 13 displays frequencies and percentages for teachers' observed use of Traditional Instructional Practices (e.g., managing the classroom, providing learning objectives, questioning to foster learning, lecturing, implicit modeling, and assessing students). The percentage of instruction was calculated by dividing the number of instances that an instructional practice was observed (f^a) by the total number of observations for the individual or group (f^b). The percentage of instructional time varied across the three observations for all six teachers. However, Teacher D was found to use Traditional Instructional Practices with the

highest regularity (93.8%), followed by Teacher A (81.1%), Teacher C (80.9%), Teacher F (72.3%), Teacher E (70.3%), and Teacher B (63.2%).

Table 14 displays frequencies and percentages for teachers' observed use of Instructional Practices of Direct Instruction (DI) and Strategy Instruction (SI) (e.g., obtaining student commitment, explicit modeling, providing guided practice, providing independent practice, and teaching to transfer). The percentage of instruction was calculated by dividing the number of instances that an instructional practice was observed (f^a) by the total number of observations for the individual or group (f^b). The percentage of instructional time varied between the teachers. Teacher B was found to use Instructional Practices of DI and SI with the highest regularity (20.4%), followed by Teacher F (10.3%), Teacher C (7.8%), Teacher D (6.3%), Teacher A (3.7%), and Teacher E (0.0%).

Table 15 displays frequencies and percentages for teachers' observed use of Other Characteristics of Instructional Practices (e.g., characteristics of reading in the classroom, use of computers, and using video during instruction). The percentage of instruction was calculated by dividing the number of instances that an instructional practice was observed (f^a) by the total number of observations for the individual or group (f^b). The percentage of instructional time varied between the teachers. Teacher E was found to use Other Characteristics of Instructional Practices with the highest regularity (29.7%), followed by Teacher F (17.4%), Teacher B (15.7%), Teacher A (15.2%), Teacher C (11.3%), and Teacher D (0.0%).

Objective Three.

For objective three, agriculture teachers' espoused use of instructional practices was compared to their observed instructional practices to determine if significant relationships existed.

Data from objectives one and two were used to determine ranked orders of the purposive sample of teachers for both espoused use and observed use of instructional practices in all three categories: Traditional Instructional Practices, Instructional Practices of Direct Instruction and Strategy Instruction, and Other Characteristics of Instructional Practice (see Table 16). Visual comparison of the rankings provides an initial indication of the relationship between each participant's espoused use within a category of instructional practice with their observed use of instructional practice. Only three instances of a direct match were identified: Traditional Instructional Practices for Teacher A, Other Characteristics of Instructional Practice for Teacher D, and Instructional Practices of Direct Instruction (DI) and Strategy Instruction (SI) for Teacher E. In contrast, the largest discrepancy was found in Instructional Practices of DI and SI for Teacher B.

The characteristics of espoused and observed instructional practices were respectively ordinal and ratio in nature. With the additional quality of a sample smaller than 10 (n = 6), Kendall's *tau-b* correlation was used to calculate the correlation coefficient. Hopkins' (2002) conventions were used to describe the magnitude of the calculated relationships. Table 17 displays Kendall's *tau-b* correlations between teachers' espoused use of instructional practices and

observed use of instructional practices in the classroom. No significant correlations ($p > .05$) were found between teachers espoused use and observed use of instructional practices. The largest correlation was found between teachers' espoused use and observed use of Traditional Instructional Practices, with a positive moderate correlation ($r_\tau = .36$). A trivial correlation ($r_\tau = .00$) was found for the relationship between teachers' espoused use and observed use of Instructional Practices of Direct Instruction (DI) and Strategy Instruction. Finally, a negative moderate correlation ($r_\tau = -.33$) was found between teachers' espoused use and observed use of Other Characteristics of Instructional Practice.

Objective Four.

For objective four, agriculture teachers' espoused use of instructional practices and their observed instructional practices were used to determine the degree of alignment among the six participants.

Hierarchical Cluster Analysis was utilized to determine if data from participating teachers' instructional practices yielded significant relationships. The analysis yielded two distinct groups within the sample of teachers: Cluster A and Cluster B. Means and standard deviations for teachers' espoused use are provided for comparison of the two clusters of teachers (see Table 18). Frequencies and percentages of instructional practices were also provided for the two clusters of teachers. In addition to Table 18, a diagram of association and a dendrogram were provided to illustrate the relationships that were identified between teachers (see Appendix J). Both clusters of teachers espoused lower use for all three categories of instructional practice than their observed use of the

instructional practices in the classroom. Additionally, Cluster A reported higher espoused use than Cluster B for all three categories of instructional practice.

Specifically, teachers in Cluster A espoused to use Traditional Instructional Practices (M = 3.79, SD = 0.49) and Instructional Practices of Direct Instruction (DI) and Strategy Instruction (SI) (M = 3.67, SD = 0.86) often, and they espoused occasional use of Other Characteristics of Instructional Practice (M = 2.59, SD = 0.62). Classroom observation yielded evidence that teachers in Cluster A regularly use all three categories of instructional practice in a typical day (83.9%, 5.7%, and 10.4% of instruction, respectively). The greatest discrepancy between espoused use and observed use was found in the category of Other Characteristics of Instructional Practice for teachers in Cluster A.

As a group, teachers in Cluster B espoused to use Traditional Instructional Practices (M = 3.21, SD = 0.70) and Instructional Practices of Direct Instruction (DI) and Strategy Instruction (SI) (M = 3.20, SD = 0.78) occasionally, and they espoused rare use of Other Characteristics of Instructional Practice (M = 2.15, SD = 0.61). Yet, regular use of all three categories of instructional practice (69.2%, 8.9%, and 21.9% of instruction, respectively) was identified through classroom observation of teachers in Cluster B. Finally, the greatest discrepancy between espoused use and observed use was found in the category of Other Categories of Instructional Practice for teachers in Cluster B.

Conclusions and Implications

Objective One.

It was concluded that agriculture teachers espoused to use Traditional Instructional Practices the most. Similar results were found with Pennsylvania agriculture teachers; teachers reported a top-five need was competence in utilizing a variety of teaching methods and techniques for teaching students with disabilities (Elbert & Baggett, 2003). An implication from this conclusion is that teachers may feel higher comfort or preparedness to use Traditional Instructional Practices. Another implication is that the terminology used to describe Traditional Instructional Practices may be more recognizable to teachers, so they identify higher espoused use for those items. Finally, teachers' high espousal for using Traditional Instructional Practices may imply that they viewed those responses to be more socially desirable.

It was concluded that teachers espoused the lowest use of Other Characteristics of Instructional Practice (i.e., use of reading, technology, and video in the classroom). Coupled with teachers' low reported levels of preservice coursework and professional development (see Table 2), this conclusion aligns with previous findings that teachers used evidence-based instructional practices with greater frequency as the number of preservice methods courses they have completed increased (Gagnon & Maccini, 2007). One implication for agriculture teachers' low espoused use of Other Characteristics of Instructional Practice is that they lack sufficient preparation to use evidence-based special education instructional practices. The teachers may also have a low comfort level for using

the instructional practices successfully. Barry (2002) found that teachers must have a strong understanding of an instructional practice in order to implement it successfully and to maintain enthusiasm toward using it. A subsequent implication for the agriculture teachers may be that they do not feel like reading, technology, or video use connects to their content. A related implication may also be that agriculture teachers may view the use of reading, technology, and video as a more of a responsibility for teachers in other disciplines rather than themselves.

Objective Two.

Agriculture teachers were observed to use Traditional Instructional Practices with higher frequency than the two other categories of instructional practice. This corresponds with a reported lack of frequent use of components for Direct Instruction and Strategy Instruction by agriculture teachers (Stair, Moore, Wilson, Croom, & Jayaratne, 2010). The four highest Traditional Instructional Practices are teacher-centered, which implies that agriculture teachers may find teacher-centered instruction to be more natural than student-centered instructional approaches. Teachers may have also received better preparation to teach with Traditional Instruction Practices as opposed to Instructional Practices of Direct Instruction and Strategy Instruction or Other Characteristics of Instructional Practice. Finally, teachers may have simply found Traditional Instructional Practices to match the closest with content in agriculture classes, making them easier to implement in classroom instruction.

Of the five instructional methods that agriculture teachers were not observed in use, four were from the category of Other Characteristics of Instructional Practice. All six teachers reported to have students with disabilities in class, thus it was concluded that agriculture teachers did not meet the needs of all their students since Direct Instruction and Strategy Instruction were shown to be effective for students with disabilities (Gregory, McLaughlin, Weber, & Stookey, 2005; Walker, Shippen, Alberto, Houchins, & Cihak, 2005). This conclusion coincides with findings from other studies that agriculture teachers have limited incorporation of reading in the classroom (Park & Osborne, 2006a, 2006b). As with teachers' limited espoused use of Other Characteristics of Instructional Practice, a lack of preparation and comfort is implied through observations of the teachers' instructional practice. Likewise, agriculture teachers may not feel like reading or computer-based instruction align as well with agricultural content as other instructional practices.

Objective Three.

One conclusion from the comparison of teachers' espoused use and observed use of instructional practices was that the agriculture teachers used instructional practices at a higher frequency than they espoused on the survey questionnaire. Richardson and Washburn (2006) reported that agriculture teachers identified similar instructional practices to be effective, yet the terminology that teachers used did not align with the language used in special education literature. Teachers may have also reported lower espoused use because they felt it was more socially desirable. Another implication is that

teachers may underestimate the amount of instruction that takes place in a typical class session. Teachers may have also outperformed their personal expectations.

It was concluded that the group of teachers espoused weekly use of technology for providing instruction, yet the teachers' overall use of technology was observed daily in the classroom. A disconnect was previously identified between teachers' espoused instructional practices and their perception of their ability to deliver those instructional practices in the classroom (Giffing, Warnick, Tarpley, 2009; Giffing, Warnick, Tarpley, & Williams, 2010). One implication may be that technology use has become routine and teachers no longer view it as an integrated part of instructional practice. Another implication may be that teachers did not consider all of the possible uses of computer-based technology when they reported their espoused use.

Significant relationships were not found between teachers' espoused use and observed use of instructional practices (see Table 18). This conclusion supports a component of Theories of Action, which states that an individual's espoused theory often does not align with their theory-in-use (Argyris, 1976). This implies that the teachers may have unintentionally selected the instructional practices that they used in agriculture classes or they were unaware of the discrepancy between their espoused theories and theories-in-use. In either case, agriculture teachers need to be aware of the discrepancy before they can be empowered to alter their theories-in-use (e.g. classroom instruction). Gagnon and Maccini (2007) reported that focused effort through teacher preparation,

professional development, or independent learning precedes positive use of Strategy Instruction.

Objective Four.

Argyris (1997) suggested that each individual has a unique set of espoused theories and theories-in-use. It was concluded that, while unique data was collected for each teacher, shared similarities in two groups within the sample for espoused use and observed use of instructional practices in the classroom. This implies that common interventions may be provide the support to improve the instructional practices for multiple teachers within the group.

All three categories of instructional practice were observed to be used regularly by both Clusters A and B, despite espoused use ranging from "rarely" to "often." Thus, it was concluded that espoused use and observed use of instructional practices for agriculture teachers in Cluster A differed from those in Cluster B. A similar disconnect was identified in a study of agriculture teachers in Utah who reported high attitudes and willingness toward including students with disabilities into their classes, yet they also expressed limited perception of skill to provide inclusion to some groups of students (Giffing, Warnick, Tarpley, 2009; Giffing, Warnick, Tarpley, & Williams, 2010). Since regular use of evidence-based practices was defined as "more than once a day" in the investigation of teachers' espoused and observed use of instructional practices, this conclusion does not definitively imply that teachers are providing evidence-based instructional practices with the regularity or explicit detail that some

students may require. It does imply, however, that teachers within each cluster shared similarities in instructional practice.

Recommendations

The first recommendation from this study is to disseminate the findings to the faculty of the University of Missouri, the institution that prepared all six of the studied teachers, in order to refine teacher preparation practices. Additional discussion would include shifts that have taken place since the teachers in this study completed the teacher education program. Further recommendations may then be discussed for any additional adjustments to the preservice preparation for agriculture teachers at the University of Missouri. All six teachers in the study were observed to use instructional practices from the three categories regularly, so sweeping changes are not necessary. However, the findings of this investigation should provide the faculty members with deeper insight into the typical instructional practices of the programs graduates.

Funding may limit some teachers' ability to incorporate reading, technology, or video into classroom instruction, thus professional development should be provided to prepare teachers to write and submit grant proposals in order to secure funding for computer-based technology. Also, professional development should be provided to support teachers' development of skills for incorporating reading instruction, technology, and video into common classroom instruction. Preservice preparation and professional development is needed to support teachers' development beyond Traditional Instructional Practices.

Revisions are recommended for preservice teacher preparation, preferably within the context of agricultural education methods courses, to increase teachers' use of evidence-based instructional practices. The potential increased awareness of Direct Instruction and Strategy Instruction should be supported through field-based opportunities for postsecondary students to interact with and practice using evidence-based instructional practices to teach students with disabilities in the context of an agriculture classroom. Incorporating Theories of Action (Argyris, 1976, 1997) into preservice teachers' education would initiate educational experiences to increase self-awareness toward instructional behavior, which in turn will empower students to intentionally impact their espoused use and observed use of evidence-based instructional practices.

As identified in the study, efforts are needed to assist teachers' alignment of espoused use and practiced use of evidence-based instructional practices in inclusive agriculture classes. Argyris (1997) suggested that individuals are enabled to alter their behavior, or theories-in-use, when they are made aware of discrepancies between their espoused theories and theories-in-use. Current teachers would best be supported through professional development provided in the form of short courses on campus or in-service education during district and state conferences. Beginning teachers would also benefit from incorporating content and related assignments for using evidence-based instructional practices into professional development targeting first and second-year agriculture teachers. One suggested element of the educational experience would be for teachers to video record their current instructional practice and watch it with their teaching peers. Constructive critique of the video, that both praises areas of

strength within the teachers practice and identifies areas for needed improvement, would then support increased awareness of instructional practices and potential for more intentional classroom instruction.

The development of a handbook that details evidence-based instructional practices for agricultural education should be developed. Such a resource would afford both preservice and in-service agriculture teachers with a central source for teaching all students, including those with disabilities. It is recommended that existing materials be purchased, such as the SIMS program from the University of Kansas, in order to adapt initial professional development programs for implementing Direct Instruction and Strategy Instruction. However, the need is evident for resources that provide specificity toward the use of evidence-based instructional practices in the unique context of secondary agriculture classes.

Use of assessment was observed at low levels of use to measure students' beginning needs, progress, and summative success in agriculture classes. In order to support teachers' ability to measure student progress and adjust instruction accordingly, it is recommended that forms for formative and summative assessments of student performance be developed and made available to teachers. It is also recommended that preservice preparation and professional development should be provided to support agriculture teachers' use of the newly developed assessments.

Recommendations for Further Research

An initial research project should be conducted to verify the findings of this project with a larger group of agriculture teachers. Prior to the study, an

adjustment to the scale of measure is also recommended—a seven-point scale with greater specificity at the higher range of use (6 = Used at least once per class; 7 = Used multiple times per class). Since the purposive sample was taken from Missouri agriculture teachers, then the initial replication of the study should be a sample of Missouri agriculture teachers in order to confirm findings. Subsequent projects could seek to measure espoused use and observed use of evidence-based instructional practices with larger samples of teachers, greater number of observations, greater number of days, more diverse subjects (i.e., preservice, beginning, and experienced teachers), and in other states for comparison.

Descriptive research is also needed to identify and describe agriculture teachers' espoused perceptions toward evidence-based instructional practices. Likewise, more rigorous investigation is needed to describe agriculture teachers' use of technology and reading in the classroom. Such study would provide greater insight into teachers' limited espoused use and observed use of technology and reading in the classroom.

A quasi-experiment is also recommended to test the five instructional practices of highest use as effective instructional approaches for all agriculture students. Since elements of Direct Instruction (DI) and Strategy Instruction (SI) were verified as used, although in low frequency, in agriculture teachers' typical instructional practice, quasi-experimental investigation is needed to identify evidence that supports the use of DI and SI for teaching students with disabilities in agriculture classes. Further study of the impact of Direct Instruction and Strategy Instruction should also be verified for students without disabilities in

order to establish the breadth of usefulness for Direct Instruction and Strategy Instruction in agriculture classes.

Qualitative projects are also recommended for future research to explore teachers' perceptions of teaching students with disabilities with greater depth. Narrative or case study projects would both prove useful to that end. Likewise a case study of the experiences of students with disabilities within agriculture classes would also provide valuable insight into the benefits and needs that school-based agricultural education provides. The findings of such a project could then be compared to the findings from the study the experiences of a student with autism through agriculture-related livestock activities outside of school (Davis, Akers, Doerfert, McGregor, & Kieth, 2005).

This investigation of agriculture teachers espoused use and observed use-of evidence-based instructional practices has provided an initial launch to future investigations to the impact of agricultural education for secondary students. May future lines of inquiry prove to be as fruitful for the participants and readers as it has been for this researcher.

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APPENDIX A

IRB Approval

Dear Investigator:

Your human subject research project entitled An Investigation of Teaching Perception and Practice for Teaching Students with Disabilities meets the criteria for EXEMPT APPROVAL and will expire on April 08, 2012. Your approval will be contingent upon your agreement to annually submit the "Annual Exempt Research Certification" form to maintain current IRB approval.

Exempt Category:

45 CFR 46.101b(1)
45 CFR 46.101b(2)

You must submit the Annual Exempt Research Certification form 30 days prior to the expiration date. Failure to timely submit the certification form by the deadline will result in automatic expiration of IRB approval.

Study Changes: If you wish to revise your exempt project, you must complete the Exempt Amendment Form for review.

Please be aware that all human subject research activities must receive prior approval by the IRB prior to initiation, regardless of the review level status. If you have any questions regarding the IRB process, do not hesitate to contact the Campus IRB office at (573) 882-9585.

Campus Institutional Review Board

APPENDIX B

Letter to Administrators Granting Permission to Study

[Insert Administrator Contact Information]
[Insert Date]
Justin Killingsworth:

This letter it to inform you that permission has been granted by the administration at [Insert] High School to proceed with collecting data for your dissertation titled *An Investigation of Agricultural Educators' Perception and Practice for Teaching Students with Disabilities.* Interview and classroom observations of [Insert Teacher Name], a teacher identified for high quality classroom instruction and meeting three additional criteria (preservice preparation in Agricultural Education at the University of Missouri, 5-10 years of teaching experience, and teaching inclusive classes) has been granted under the following conditions:

- All research procedures have been approved and are being conducted under the supervision of the Department of Agricultural Education and the Institutional Review Board (IRB) at the University of Missouri.
- Teachers will choose to willingly participate in the study. The statement requesting consent is:
  "By participating in the interview, you are providing your verbal consent for me to collect this data. Your participation is entirely voluntary, and you will suffer no penalties by refusing to participate in the interview. Your participation will help inform the Department of Agricultural Education in preparing future teachers and supporting in-service teachers. Do you give your consent to this interview?"
- Confidentiality will be protected throughout data collection, data analysis, and reporting.
- Data will be collected through (1) phone interviews of teachers' perceptions of their instructional practices and (2) observations of their instructional practices in the classroom.
- Audio recordings of phone interviews and video recordings of the teacher's instructional practice will be made. Students will be intentionally avoided in all recordings.
- All data will be collected strictly from teachers (no data will be collected from students).

I, [Insert Administrator name], hereby grant permission for Justin Killingsworth to conduct teacher interviews and observe classroom instruction at [Insert] High School as described above.

_____ _____

[Insert Administrator Name] Date

APPENDIX C

Panel of Experts

Panel of Experts
(listed alphabetically)

Joe Donaldson
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APPENDIX D

Letter to Panel of Experts

[Insert Name of Expert]:

You have been identified for your expertise pertaining to the elements under study in my dissertation. The purpose of this study was to describe Missouri secondary agriculture teachers' perceptions about the instructional practices they espouse to provide for students with disabilities and their observed use of evidence-based instructional practices in the classroom.

The first attached document, Interview Questionnaire, was designed to collect data for the first objective of study:

1. Describe agriculture teachers' espoused use of instructional practices (including Direct Instruction and Strategy Instruction) for teaching students with disabilities.

The second attached document, Observation Form, was designed to collect data for the second objective of study:

2. Describe agriculture teachers' instructional practices (including Direct Instruction and Strategy Instruction) for teaching all students, including students with disabilities, as observed in inclusive secondary classrooms.

The third objective of study is to compare the data collected through the first two objectives in order to determine if teachers' espoused instructional practices significantly differed from observed instructional practices.

Please review the attached instruments for both face validity (appearance to measure what it is purported to measure) **and content validity** (inclusion of all elements of content for the area of study).

Thank you,

Justin Killingsworth
(979) 218-1299

APPENDIX E

Questionnaire for Survey of Teachers

(Reformatted to fit the page)

Approaches to Teaching Students with Disabilities

The purpose of this study is to describe Missouri secondary agriculture teachers' perceptions about the instructional practices they espouse to provide for students with disabilities and their observed use of evidence-based instructional practices in the classroom. For this study, a student with a disability is defined as a student that has an Individualized Education Program (IEP).

Sections of Questionnaire:

I: Effectiveness of instructional approaches for students with disabilities.

II: Teacher's skill at using instructional approaches for students with disabilities.

III: Use of instructional approaches.

IV: Personal and professional characteristics.

Directions:
Please make selections that most align with your typical teaching in the classroom.

Example:
In general, how effective are the following instructional approaches when teaching **students with disabilities**?
(Please select one choice for each row)

	Very Ineffective	Ineffective	Neutral	Effective	Very Effective
Orienting students to content by providing daily learning objectives				X	

This teacher perceived the instructional practice, "orienting students to content by providing daily learning objectives," as **effective**.

Please refer any questions to Justin Killingsworth at 979 218-1299 or justinkillingsworth@mail.mizzou.edu.

Thank you for completing this survey.

We feel that your time is very valuable--your participation is appreciated!

Section I: Effectiveness of instructional approaches for students with disabilities.

In general, how effective are the following instructional approaches when teaching **students with disabilities**?
(Please select one choice for each row)

	Very Ineffective	Ineffective	Neutral	Effective	Very Effective
Orienting students to content by providing daily learning objectives					
Lecture					
Guiding student's performance of a skill with detailed directions					
Providing detailed directions to manage the learning environment					
Demonstrating a skill pertaining to content with detailed explanation					
Demonstrating a skill pertaining to content without explanation					
Questioning to foster learning					
Providing a graphic organizer (e.g. study guide, concept map)					
Providing simple feedback (i.e. task performed correctly)					
Providing detailed feedback (i.e. specific information/re-teaching)					
Reviewing facts or concepts with guiding correction as needed					
Reviewing procedures through guided opportunities to practice skill					
Providing opportunities for students to independently use content or skills (e.g. homework or in-class practice)					
Assessing students with traditional tests					
Assessing students through other forms (e.g. performance assessments, etc.)					
Providing instruction for students to transfer learned skills into other content areas					
Reading out loud to students					
Having students read out loud to a large group (more than 5 students)					
Having students read out loud to peer(s) (5 or fewer students)					
Having students read to themselves					
Teaching strategies for reading and writing (e.g. rephrasing content, summarizing)					
Teaching strategies for math (e.g. computation strategies, fact-chunking)					
Teaching strategies for other content areas (e.g. self-regulation, organizing information)					
Using computer-based technology to provide instruction					
Using computer-based technology for other purposes					
Having students use computer-based technology to receive instruction					
Having students use computer-based technology for assignments (e.g. papers, presentations)					
Utilizing video during instruction					

Section II: Teacher's skill at using of instructional approaches for students with disabilities.

How well can you use each of the following instructional approaches when teaching **students with disabilities**?
(Please select one choice for each row)

	I can't do this	I don't do this well	I do this adequately	I do this well	I do this very well
Orienting students to content by providing daily learning objectives					
Lecture					
Guiding student's performance of a skill with detailed directions					
Providing detailed directions to manage the learning environment					
Demonstrating a skill pertaining to content with detailed explanation					
Demonstrating a skill pertaining to content without explanation					
Questioning to foster learning					
Providing a graphic organizer (e.g. study guide, concept map)					
Providing simple feedback (i.e. task performed correctly)					
Providing detailed feedback (i.e. specific information/re-teaching)					
Reviewing facts or concepts with guiding correction as needed					
Reviewing procedures through guided opportunities to practice skill					
Providing opportunities for students to independently use content or skills (e.g. homework or in-class practice)					
Assessing students with traditional tests					
Assessing students through other forms (e.g. performance assessments, etc.)					
Providing instruction for students to transfer learned skills into other content areas					
Reading out loud to students					
Having students read out loud to a large group (more than 5 students)					
Having students read out loud to peer(s) (5 or fewer students)					
Having students read to themselves					
Teaching strategies for reading and writing (e.g. rephrasing content, summarizing)					
Teaching strategies for math (e.g. computation strategies, fact-chunking)					
Teaching strategies for other content areas (e.g. self-regulation, organizing information)					
Using computer-based technology to provide instruction					
Using computer-based technology for other purposes					
Having students use computer-based technology to receive instruction					
Having students use computer-based technology for assignments (e.g. papers, presentations)					
Utilizing video during instruction					

Section III: Use of instructional approaches.

In general, how often do you use the following instructional approaches during a typical week in your classroom?
(Please select one choice for each row)

	Never	Rarely (No more than once a month)	Occasionally (Weekly)	Often (Daily)	Regularly (More than once a day)
Orienting students to content by providing daily learning objectives					
Lecture					
Guiding student's performance of a skill with detailed directions					
Providing detailed directions to manage the learning environment					
Demonstrating a skill pertaining to content with detailed explanation					
Demonstrating a skill pertaining to content without explanation					
Questioning to foster learning					
Providing a graphic organizer (e.g. study guide, concept map)					
Providing simple feedback (i.e. task performed correctly)					
Providing detailed feedback (i.e. specific information/re-teaching)					
Reviewing facts or concepts with guiding correction as needed					
Reviewing procedures through guided opportunities to practice skill					
Providing opportunities for students to independently use content or skills (e.g. homework or in-class practice)					
Assessing students with traditional tests					
Assessing students through other forms (e.g. performance assessments, etc.)					
Providing instruction for students to transfer learned skills into other content areas					
Reading out loud to students					
Having students read out loud to a large group (more than 5 students)					
Having students read out loud to peer(s) (5 or fewer students)					
Having students read to themselves					
Teaching strategies for reading and writing (e.g. rephrasing content, summarizing)					
Teaching strategies for math (e.g. computation strategies, fact-chunking)					
Teaching strategies for other content areas (e.g. self-regulation, organizing information)					
Using computer-based technology to provide instruction					
Using computer-based technology for other purposes					
Having students use computer-based technology to receive instruction					
Having students use computer-based technology for assignments (e.g. papers, presentations)					
Utilizing video during instruction					

Section IV: Personal and Professional Characteristics

Please respond to each of the following questions.

1. What is your gender?

Male	Female

2. What is your highest level of education?

Bachelor's Degree	Bachelor's +	Master's Degree	Master's +

3. How many years of teaching experience do you have?
(Please enter a number)

4. What is the total enrollment of all classes you teach?
(Count each student once and please enter a number)

5. How many of your current students have Individualized Education Programs (IEPs)?
(Please enter a number)

6. Students in your classes have been identified with which of the following categories of disability?
(Please select all that apply)

Autism	Deaf-blindness	Deafness	Emotional Disturbance	Hearing Impairment	Mental Retardation	Multiple Disabilities	Orthopedic Impairment	Other Health Impairment	Specific Learning Disability	Speech or Language Impairment	Traumatic Brain Injury	Visual Impairment

7. What preparation have you received to teach students with disabilities?
(Please respond to all that apply)

	Participated? (Check all that apply)	Number of hours? (Enter number if applicable)
University Courses		
Professional Development Workshops		

Section IV: Personal and Professional Characteristics (*continued*)

Please respond to each of the following questions.

8. When considering the level of preparation you have received, how prepared do you feel to teach students with disabilities?

Not Prepared	Relatively Unprepared	Uncertain	Relatively Prepared	Prepared

9. How comfortable are you with teaching students with disabilities?

Not Comfortable	Relatively Uncomfortable	Uncertain	Relatively Comfortable	Comfortable

10. How willing are you to teach students with disabilities?

Not Willing	Relatively Unwilling	Uncertain	Relatively Willing	Willing

11. Do you have a friend or family member with a disability?

Yes	No

12. Have you spent time with an individual with a disability outside of the school environment?

Yes	No

Thank you for completing this survey. Your responses will assist in preparing future teachers.

APPENDIX F

Reliability Estimates for Survey Questionnaire

Table F1

Percentage of agreement for teachers' perceived use

Item	Number in agreement[a]	% of agreement
Orienting students to content by providing daily learning objectives	18	94.7
Lecture	19	100.0
Guiding student's performance of a skill with detailed directions	18	94.7
Providing detailed directions to manage the learning environment	18	94.7
Demonstrating a skill pertaining to content with detailed explanation	18	94.7
Demonstrating a skill pertaining to content without explanation	18	94.7
Questioning to foster learning	19	100.0
Providing a graphic organizer	19	100.0
Providing simple feedback	17	89.5
Providing detailed feedback	18	94.7
Reviewing facts or concepts with guiding correction as needed	19	100.0
Reviewing procedures through guided opportunities to practice skill	18	94.7
Providing opportunities for students to independently use content or skills	16	84.2
Assessing students with traditional tests	17	89.5
Assessing students through other forms	19	100.0
Providing instruction for students to transfer learned skills into other content areas	18	94.7
Reading out loud to students	17	89.5
Having students read out loud to a large group	17	89.5
Having students read out loud to peers	17	89.5
Having students read to themselves	16	84.2
Teaching strategies for reading and writing	16	84.2
Teaching strategies for math	18	94.7
Teaching strategies for other content areas	16	84.2
Using computer-based technology to provide instruction	18	94.7
Using computer-based technology for other purposes	18	94.7
Having students use computer-based technology to receive instruction	17	89.5
Having students use computer-based technology for assignments	17	89.5
Utilizing video during instruction	18	94.7
Total	494	92.9

[a]Agreement determined by congruence of scores within one point

APPENDIX G

Observation Form

Observation Form A

Classroom Information

Teacher Name:_____

School:_____ **Observer Initials:**___

Course Subject:_____ **Date:**_____

Class Period: 1 2 3 4 5 6 7 8 Other_____

Lesson Topic:_____

Total # of students:_____ **Total # of students with IEP:**_____

Classroom format: Single Teacher Co-Teaching Teacher w/ Paraprofessional

Field Notes:

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Observation of Instruction

Teacher:_____ Course Subject:_____ Date:_____ Page__/__

Scheduled Start Time:_____ Actual Start Time: _____ Scheduled End Time: _____ Actual End Time:_____

Directions: At each indicated time (1-minute intervals), you should make your first observation on the horizontal line. Your observation should be a full 20 seconds. Use the time counter on the video to designate the 20-second periods of observation. Then, at the next minute-mark begin the next observation. There are four categories of observation variable listed along the top row of this matrix (1-Learning Arrangement, 2-Transition Time, and 3-Instructional Activity, 4-Other Details of Instruction). For each observation interval, marks should be made in each category so that every row contains a minimum of 3 scores (Other Details of Instruction may be left blank). Mark 1 in the box for the Learning Arrangement the teacher was observed to use the **majority** of the interval. Mark 1 if the class is transitioning for the majority of the time, otherwise mark O. Tally frequencies in each applicable Instructional Activity boxes (designate Elaborated Feedback with an *). Finally, tally observations of the 'Other Details of Instruction' boxes (leave blank if none observed).

	1 LEARNING ARRANGEMENT						2	3 INSTRUCTIONAL ACTIVITY																						4 OTHER DETAILS OF INSTRUCTION													
												Questioning			Lecture			Direct + Strategy Instruction						Assessment				Reading			Technology Use										
	Whole Group	Large Group *1/3 to Whole Group*	Small Group *3 stud. To 1/3 Class*	Individual-Teacher Lead	Student Peer Pairs	Individual-Independent	***NOT ENGAGED IN INSTRUCTION***	Classroom Procedure *Managing Classroom*	Preparing/Orienting Students *(Daily Learning Objectives)*	Academic Directions *"Turn to ch. 3.." (simple)*	Physical Observation *(e.g., watching students)*	Questioning for Self Answer	Questioning for Student Response *(Specify in field notes)*	Listening *(Full 10 seconds)*	New Content *Fact/concept/procedure*	Reviewed Content *Fact/concept/procedure*	Describe Skill/Strategy *(e.g., Advance Organizer)*	Implicit Modeling *(Demonstrate Only)*	Mnemonic/Keyword/Pegword/ Think-Aloud/Other	Obtain Student Commitment *(To learn or use strategy)*	Explicit Modeling *(Demonstrate AND Explain)*	Guided Practice	Independent Practice	Teach to Transfer/ Generalization *(e.g., Baseline or pre-instruction)*	Summative *(e.g., Post-instruction)*	Traditional Assessments *(e.g., test, quizzes)*	Other Form of Assessment *(e.g., Performance Assessment)*	Students engaged in ind. activ. *(Provide detail in field notes)*	Use of Graphic Device *(e.g., study guide, CE)*	Teacher Reads to Student(s) *(Full 10 seconds)*	Shared Reading *Student takes turns reading*	Simple Silent Reading *Read to Self*	Augmented Silent Reading *Reading to complete a task*	Technology used by teacher *For instructional purposes*	Technology used by teacher *For other purposes*	Technology used by student *To receive instruction*	Technology used by student *To complete assignments*	Technology used by student *For other purposes*	Video *(Provide detail in field notes)*
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Observation Form B

Laboratory Information

Teacher Name:_____

School:_____ **Observer Initials:**___

Course Subject:_____ **Date:**_____

Class Period: 1 2 3 4 5 6 7 8 Other_____

Lesson Topic:_____

Total # of students:_____ **Total # of students with IEP:**_____

Classroom format: Single Teacher Co-Teaching Teacher w/ Paraprofessional

Setting: Metal Shop Wood Shop Greenhouse Other_____

Field Notes:

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Observation of Instruction

Teacher:_____ Course Subject:_____ Date:_____ Page__/__

Scheduled Start Time:_____ Actual Start Time: _____ Scheduled End Time: _____ Actual End Time:_____

Directions: At each indicated time (1-minute intervals), you should make your first observation on the horizontal line. Your observation should be a full 20 seconds. Use the time counter on the video to designate the 20-second periods of observation. Then, at the next minute-mark begin the next observation. There are four categories of observation variable listed along the top row of this matrix (1-Learning Arrangement, 2-Transition Time, and 3-Instructional Activity, 4-Other Details of Instruction). For each observation interval, marks should be made in each category so that every row contains a minimum of 3 scores (Other Details of Instruction may be left blank). Mark 1 in the box for the Learning Arrangement the teacher was observed to use the **majority** of the interval. Mark 1 if the class is transitioning for the majority of the time, otherwise mark O. Tally frequencies in each applicable Instructional Activity boxes (designate Elaborated Feedback with an *). Finally, tally observations of the 'Other Details of Instruction' boxes (leave blank if none observed).

	1 LEARNING ARRANGEMENT						2	3 INSTRUCTIONAL ACTIVITY																							4 OTHER DETAILS OF INSTRUCTION													
													Questioning				Lecture			Direct + Strategy Instruction							Assessment				Reading			Technology Use								
	Whole Group	Large Group *1/3 to Whole Group*	Small Group *3 stud. To 1/3 Class*	Individual-Teacher Lead	Student Peer Pairs	Individual-Independent	***NOT ENGAGED IN INSTRUCTION***	Classroom Procedure *Managing Classroom*	Preparing/Orienting Students *(Daily Learning Objectives)*	Academic Directions *"Turn to ch. 3.." (simple)*	Physical Observation *(e.g., watching students)*	Questioning for Self Answer	Questioning for Student Response *(Specify in field notes)*	Listening *(Full 10 seconds)*	New Content *Fact/concept/procedure*	Reviewed Content *Fact/concept/procedure*	Describe Skill/Strategy *(e.g., Advance Organizer)*	Implicit Modeling *(Demonstrate Only)*	Mnemonic/Keyword/Pegword/ Think-Aloud/Other	Obtain Student Commitment *(To learn or use strategy)*	Explicit Modeling *(Demonstrate AND Explain)*	Guided Practice	Independent Practice	Teach to Transfer/ Generalization *(e.g., Baseline or pre-instruction)*	Summative *(e.g., Post-instruction)*	Traditional Assessments *(e.g., test, quizzes)*	Other Form of Assessment *(e.g., Performance Assessment)*	Students engaged in ind. activ. *(Provide detail in field notes)*	Use of Graphic Device *(e.g., study guide, CE)*	Teacher Reads to Student(s) *(Full 10 seconds)*	Shared Reading *Student takes turns reading*	Simple Silent Reading *Read to Self*	Augmented Silent Reading *Reading to complete a task*	Technology used by teacher *For instructional purposes*	Technology used by teacher *For other purposes*	Technology used by student *To receive instruction*	Technology used by student *To complete assignments*	Technology used by student *For other purposes*	Video *(Provide detail in field notes)*
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APPENDIX H

Operational Definitions of Items on Observation Form

Operational Definitions for Components of Observation Form

Characteristic/Behavior Observed	Operational Definition	Further Detail or Specific Examples
LEARNING ARRANGEMENT		
Whole Group	Instruction of the entire class.	
Large Group	Instruction of a large portion of the class.	1/3 of the class or more
Small Group	Instruction of a small group of students.	Range from 2 students to 1/3 of the class
Individual-Teacher Lead	Instruction of students individually.	One single student
Student Peer Pairs	Instruction through paired student groups.	2-3 students in each pair
Individual-Independent	Observation of class as individuals.	Students are working independently
NOT ENGAGED IN INSTRUCTION	Teacher is not interacting with students in a class-related manner.	e.g. time of transition between activities or classes
INSTRUCTIONAL ACTIVITY		
Classroom Procedure	Direction provided to maintain order and manage the classroom	Managing Classroom
Preparing/Orienting Students	Instructing students in preparation for learning activities.	(Daily Learning Objectives)
Academic Directions	Simple directions to instruct student of an academic task.	"Turn to chapter 2."
Physical Observation	Overseeing students as they perform a task or work with content.	e.g. watching students
Questioning for Self Answer	Posing a question for self-response (teacher provides instruction through the response).	"What is the correct angle for welding? 45 degrees."
Questioning for Student Response	Posing a question for response from the class or specific students *(provide detail in field notes)*	"Can anyone share the three steps to offer a main motion?"
Listening	Listen to students for at least 10 full seconds (typically following question or prompt)	
Implicit Modeling	Demonstrating a skill or strategy without explanation, verbal or otherwise.	Demonstration only
Lecture	Instructional style that is focused on the teacher providing educational content.	Giving Content Information
Fact/concept/procedure	Lecturing to provide instructional content.	Fact, concept, procedure

Describe Skill/Strategy	Lecturing to teach a strategy.	e.g. Advance Organizer
Mnemonic/Keyword/Pegword/Think-Aloud/Other	Teaching a strategy designed to help students store and retrieve information	e.g. mnemonic, keyword, pegword, or Think-Aloud
Obtain Student Commitment	Attempt to encourage student buy-in to learn or use a skill or strategy	i.e. to learn or use strategy
Explicit Modeling	Demonstrating a skill or strategy **with** explanation, verbal or otherwise.	Demonstrate AND Explain
Guided Practice (**1 = Simple Feedback; 2 = Elaborated**)	Teacher-guided opportunities to practice the skill or strategy with corrective feedback provided.	e.g. teacher-led repetition of safety procedures or livestock breeds
Independent Practice (**1 = Simple Feedback; 2 = Elaborated**)	Opportunities for the student to independently practice the skill or strategy under the supervision of the teacher.	e.g. demonstration of safe equipment operation in shop laboratory
Teach to Transfer/Generalization (**1 = Simple Feedback; 2 = Elaborated**)	Providing instruction for transferring a taught skill or strategy to other applicable contexts.	i.e. in reading, writing, math, and science
Assessment		
Formative	Administering an assessment to measure the status of students' progress toward learning objectives prior to or during an instructional unit.	e.g. baseline survey or pre-instructional quiz
Summative	Administering an assessment following an instructional unit to measure completion of learning objectives.	e.g. post-instructional exam
Traditional Assessments	Administering traditional pencil-and-paper examinations.	e.g. tests or quizzes with multiple-choice, true/false, short answer, and essay questions
Other Form of Assessment	Administering assessments that measure proper execution of skill or completion of task.	e.g. Performance Assessment
OTHER INSTRUCTIONAL DETAILS		
Use of Graphic Device	Presentation of a graphic to assist students in conceptualizing and organizing content.	e.g. study guide and CE
Teacher Reads to Student(s)	Teacher reads out loud for a full 10 seconds	
Shared Reading	Students take turns reading	
Simple Silent Reading	Students silently read to themselves	

Augmented Silent Reading	Students silent read to complete a task	
Technology used by teacher	Teacher use of computers for instructional purposes	e.g. web-based demonstration of internal combustion engines or welding
Technology used by teacher	Teacher use of computers for other purposes	e.g. attendance software or e-mail
Technology used by student	Student use of computers to receive instruction	e.g. on-line OSHA safety modules
Technology used by student	Student use of computers to complete an assignment	e.g. papers and presentations
Technology used by student	For other purposes	
Video	Use of instructional video during class *(Provide detail in field notes)*	e.g. CEV videos

APPENDIX I

Reliability Estimates for Observation Form

Intrarater Reliability

Table G1

Intrarater reliability estimates for classroom observation form

	Traditional Instructional Practices			Instructional Practices of DI and SI			Other Characteristics of Instructional Practice		
	f^a	f^b	%	f^a	f^b	%	f^a	f^b	%
1	83	600	.86	0	240	1.00	35	480	.93
2	59	885	.93	20	354	.94	29	708	.96
3	31	690	.96	2	276	.99	12	552	.98
4	96	750	.87	1	300	.99	2	600	.99
5	58	690	.92	6	276	.98	2	552	.99
6	55	690	.92	1	276	.99	71	552	.87
Total*	382	4305	.91	30	1722	.98	151	3444	.96

*Overall reliability estimate = 94.1%

Note: Reliability estimates were calculated as:

(Total observations – Total errors)/Total observations

[a]Total discrepancies between the two observations

[b]Total observations

Interrater Reliability

Table G2

Interrater reliability estimates for classroom observation form

	Traditional Instructional Practices			Instructional Practices of DI and SI			Other Characteristics of Instructional Practice		
	f^a	f^b	α	f^a	f^b	α	f^a	f^b	α
1	40	600	.93	4	240	.98	31	480	.94
2	104	750	.86	0	300	1.00	31	600	.95
3	75	600	.88	4	240	.98	0	480	1.00
4	49	375	.87	22	150	.85	4	300	.99
5	87	870	.90	0	348	1.00	9	696	.99
Total*	355	3195	.89	30	1278	.98	75	2556	.97

*Overall reliability estimate = .94

Note: Reliability estimates were calculated as:

(Total observations – Total errors)/Total observations

[a]Total discrepancies between the two observations

[b]Total observations

APPENDIX J

Diagrams from Hierarchical Cluster Analysis

Figure J1. Diagram of associations between clustered teachers.

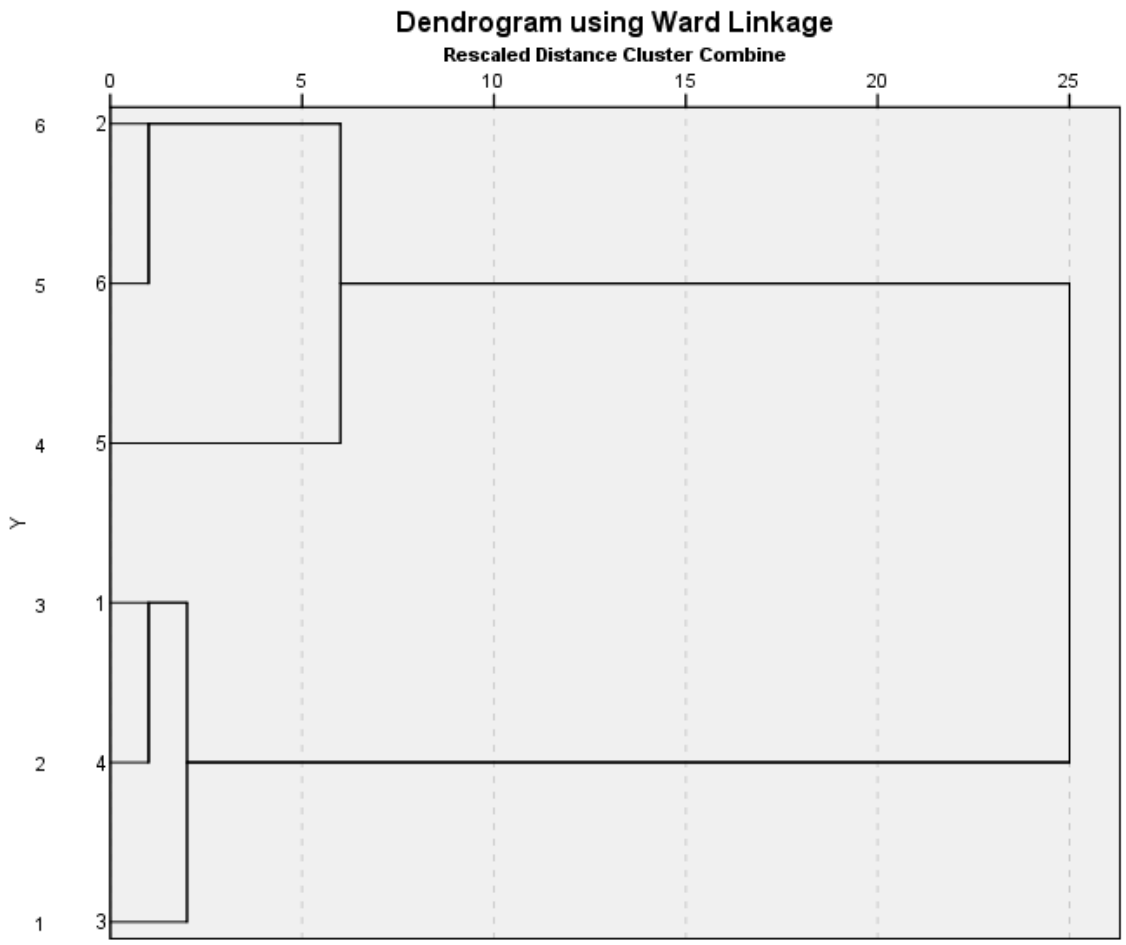

Figure J2. Dendrogram of clustered teacher groups.

VITA

Justin Killingsworth was raised in Point, Texas. With teachers as parents, his upbringing instilled a deep respect for education. Following graduation from Rains High School in 1998, Justin obtained a Bachelor of Science in Animal Science from Texas A&M University in 2002. He then pursued a Master's of Education in Agricultural Education. Upon completion of his degree in 2004, Justin was hired at Brenham High School as a secondary agriculture teacher. Fueled by the desire to support students' success, he accepted the opportunity to serve as a graduate assistant and Doctorate of Philosophy student in the Department of Agricultural Education at the University of Missouri. Throughout his three-year term at MU, Justin cites vast growth as both a student and teacher. He relishes the upcoming potential to serve as a professor, advisor, and researcher at the postsecondary level.