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Preparing Preservice Teachers for Inclusive Classrooms: A State-Wide Survey of Teacher Education Faculty

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I am submitting herewith a dissertation written by Lucinda Anne Ellenburg Lang entitled "Preparing Preservice Teachers for Inclusive Classrooms: A State-Wide Survey of Teacher Education Faculty." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.

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Preparing Preservice Teachers for Inclusive Classrooms: A State-Wide Survey of Teacher Education Faculty

A Dissertation Presented for the
Doctor of Philosophy
Degree
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Lucinda Anne Ellenburg Lang
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Dedication

This is dedicated to my husband, Albert, and my dad, Charlie Ellenburg,
without whom this would never have been accomplished.
For countless hours of formatting, data input, and cheering me on…
this is yours too.

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And finally, I thank Jesus. He led me to this point, paved the way through countless things that could not possibly be called coincidences, and gave me hope as I looked forward to working where I felt He had called me to be.

Abstract

This study was designed to assess the extent to which teacher education faculty teaching across the range of disciplines and populations in approved Education Preparation Providers (EPPs) in Tennessee prepare their teacher education candidates to meet the needs of all students, including those with disabilities. A survey was administered state-wide to faculty ($N = 154$) in teacher education programs to assess the extent to which they report their practice of, teaching about, and confidence in co-teaching, collaboration and implementation of universal design for learning (UDL). In general, faculty strongly endorsed items indicating they practice, teach, and are confident about the practice of collaboration and the principles of UDL. In contrast, faculty less strongly endorsed items on their practice of, and teaching and confidence about co-teaching. Similarly, faculty reported high levels of agreement that departmental support is provided for collaboration and UDL but lower level of support is provided for co-teaching. When comparing general and special education faculty responses, teaching the practice of co-teaching ($p < .01$) and confidence in co-teaching ($p < .01$) were significantly different with general teacher education faculty ranking lower. When asked to report obstacles to these practices, main themes to emerge were lack of time, separation of general and special education departments, "buy-in" to the practices, and lack of skill in and knowledge of those practices. Results confirm the need, as found in other studies, for cross-discipline collaboration between general and special education faculty in determining how best to incorporate inclusive practices within teacher education programs.

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CHAPTER I: INTRODUCTION

While federal policies and laws [e.g. No Child Left Behind (U.S. Department of Education, 2001), Individual with Disabilities Education Act (U.S. Department of Education, 2004)] have aimed much of the spotlight on schools and the teachers, preparedness of teachers to provide appropriate and adequate education for all students falls on teacher education programs. Research focused on education faculty's knowledge and practices in preparing teachers across disciplines and grade levels to teach in inclusive settings has revealed inconsistent approaches across education programs (Gehrke & Cocchiarella, 2013; Harvey, Yssel, Bauserman, & Merbler, 2010; Voltz & Elliott, 1997). Pugach and Blanton (2009) asked the question: "are collaborative structures of teacher education transforming the preservice curriculum and how faculty conceptualize teaching the full range of students, or do they instead function to maintain traditional views of teacher education with merely some tinkering around the edges?" (p. 581). Just as general and special educators at the K-12 level increasingly work together to ensure achievement of their students, so too must faculty collaborate across disciplines to present a unified approach in preparing new teachers for the field. This study was designed to assess the extent to which faculty are incorporating best practices in teacher education programs to prepare preservice teachers to teach in inclusive classrooms.

Constructs Defined

1. Universally Designed Learning: "Universal Design for Learning (UDL) recognizes that every learner is unique and processes information differently…UDL provides a framework to create and implement lessons with flexible goals, methods, materials, and assessments that support learning for all students" (The Center for Applied Special Technology, 1999).

2. Inclusive classroom: The inclusive classroom can be defined as having students with disabilities 'primarily in the general education classroom, under the responsibility of the general classroom teacher' (Mastropieri & Scruggs, 2010, p. 7).

3. Co-teaching: Co-teaching can be defined as two teachers, usually a general educator and a special educator, sharing 'instructional responsibility for a diverse group of students that usually includes several with disabilities or other special needs' (Friend, 2007, p. 49).

4. Collaboration: Collaboration can be defined as "co-equal parties voluntarily engaged in decision-making as they work toward a common goal" (Cook & Friend, 1991, p. 25). For the purpose of this study, collaboration was further defined to be: communication between special educators and non-special educators on how to best serve the needs of a diverse group of students, including but not limited to, those with disabilities.

Review of Literature

Legislation and Policy for Effectively Educating All Students

Since the Education for All Handicapped Children Act was passed in 1975 (PL 94-142), how to effectively educate students with disabilities continues to be defined. PL 94-142 has been amended several times, was renamed Individuals with Disabilities Education Act (IDEA) in 1990, and currently is operating under its latest revision in 2004 (U.S. Department of Education). IDEA states that:

> Disability is a natural part of the human experience and in no way diminishes the right of individuals to participate in or contribute to society. Improving educational results for children with disabilities is an essential element of our national policy of ensuring equality of opportunity… for individuals with disabilities (p.118).

Students with disabilities are to be educated to the fullest extent possible in general education classrooms and all teachers should be prepared to do this effectively. The term "least restrictive environment" (LRE) was, and continues to be, the goal for all students with disabilities.

Madeleine Will, as Assistant Secretary in the Office of Special Education and Rehabilitative Services in 1986, reported that general and special educators needed to work together to adapt the regular education environment to adequately meet the needs of all students. She emphasized that typically the student with learning difficulties was presumed to be the problem, thus resulting in removal from the general education classroom into a classroom with special education services. She stated that the flaw was in assuming there was something wrong with the student rather than the student's environment, the general education classroom, which could be changed and adapted to meet that student's needs by facilitating collaboration between the fields of general and special education. Will called for a partnership between the two disciplines with special education techniques acquired and incorporated into the classroom by general educators. In addition, she suggested that support could also come from the use of team teaching with general and special educators working together. She argued that for too long special education and regular education had co-existed in the same building, but the time had come for a merging of the two. The suggestions made in her report continue to echo through the halls of schools at both the P-12 and the university level today.

Including students with disabilities in regular education classrooms has become the norm rather than the exception. According to the National Center for Education Statistics, from the years 1990 to 2008 the percentage of students with disabilities who are educated 80% or more of the time in the general education classroom has risen from 33.1% to 56.8% (2011). A report from the National Dissemination Center for Children with Disabilities (NICHCY) (2011)

indicated in a review of states' reports that this increase continues with 61.7% reported in the year 2009-2010; it is anticipated that this will continue as a future trend. In addition, approximately 11% of new teachers were employed in team-teaching or "pull-in/pull-out" positions (National Center for Education Statistics, 2010) which are commonly utilized to serve students with disabilities.

The No Child Left Behind Act of 2001 (U.S. Department of Education) reauthorized the original Elementary and Secondary Education Act (ESEA) and again emphasized the need to adequately educate all students, with a purpose of academic achievement for all. The Common Core State Standards (Common Core State Standards Initiative, 2012), now adopted by 45 states, continues the push for accountability at the state and federal levels. This call for accountability means that educators are expected to continually assess whether or not schools are functioning in a way that ensures all students, including those with disabilities, are academically successful in the least restrictive environment possible.

Best Practices for Teachers to Effectively Educate All Students

The Council of Chief State School Officers (CCSSO) is a non-profit, nationwide organization that is comprised of public officials who lead departments of elementary and secondary education in the United States (2012). CCSSO's goal is to lead and facilitate states' reform of the education system through assessment, accountability, and common standards. The National Governor's Association (NGA) is a bipartisan organization comprised of all the states' governors and one of its missions is to effect policy change that reflects best practices through the NGA Center for Best Practices (2011). Through the concerted efforts of CCSSO and NGA, 45 states (Common Core State Standards Initiative, 2012) have adopted the common core

standards in language arts and mathematics that are geared toward equipping every child for success after graduation from high school by being either career and/or college ready.

In a book published on reading disabilities, the authors (Benner, Bell, & Broemmel, 2011) of a chapter that focused on teacher education and reading disabilities spoke of the pressing need to adequately prepare not only special education but also general education teachers to effectively teach students with reading disabilities. It is now understood that students with weak reading skills share many of the same traits as do students with learning disabilities and teachers of these students should be prepared to implement effective instructional strategies. There is consensus among teacher educators that this is true, but agreeing on how to best prepare preservice educators is not so simple. The authors discussed how teachers need to be intuitive in their approach to students and simply understanding the best scientific approach and using it will not work with everyone or every learning problem encountered.

Darling-Hammond and Bransford in *Preparing Teachers for a Changing World: What Teachers Should Learn and Be Able to Do* (2007) addressed this issue as well. As referenced before, the teaching profession can be likened to the medical profession. One key disposition people would say they hope their doctors have is the ability to diagnose and treat a disease not simply based on what was learned from a textbook but in the context of the individual person and his/her history. In addition, doctors do not often function individually. They work in teams of other doctors, nurses, and physician's assistants, to name a few of those involved. In the same manner, teachers need to be able to not simply transmit the information of their specific disciplines but should also know how to apply context found within a classroom full of students with differing levels and needs to their decisions for instruction. They also need to be able to collaborate with other professionals in order to make the best decisions and use the best practices

in the classroom. Darling-Hammond and Bransford argued that since our schools exist within a democracy, it is important that all have equal access to the instruction given within. As institutions prepare teachers, there needs to be a concern that teaching candidates are learning practices that accomplish this purpose.

In a chapter on diversity, Darling-Hammond and Bransford discussed that teachers should be "building an inclusive practice" (2007, p. 255). This is not approached as something to aspire to, it simply is. In order to accomplish this, teacher preparation programs must keep diverse learners as a central focus throughout the coursework and field experiences. It is important to note, however, that if teachers are better prepared to address diverse learners in the classroom, the strategies they gain and learn to use mean better classroom teaching for all. Some of the strategies noted as being important for teachers to learn and use in developing an inclusive practice are: the ability to develop a sense of safety and support within their classroom, the knowledge of their learners that result in purposeful and meaningful grouping within the classroom, the use of strategic instruction such as problem solving and thinking aloud, the awareness of student performance and what skills are lacking, the ability to effectively work closely with other professionals to determine best practices, and the knowledge of types and range of interventions available and where to find these.

Arthur Levine published a series of policy reports on America's schools (2005) that are the result of a four-year series of various research studies that have surveyed stakeholders in schools. His second report (2006), *Educating School Teachers*, focused on the education of classroom teachers. He stated that "…today's teachers need to know and be able to do things their predecessors did not. They have to be prepared to *educate all* of their students to achieve *the highest learning outcomes* in history. This is a fundamentally different job than that of past

generations of teachers" (p. 11). He also referred to teaching as not simply a craft one learns on the job but a profession similar to law or medicine where rigorous standards should be taught and met by those wishing to be in the teaching field. One survey administered to stakeholders asked how well schools of education are preparing teachers for students with diverse needs in their classrooms. The percentage responding "very well" or "moderately well" was disappointing, with principals at 30%, deans 51%, faculty 52%, and alumni 60%. Within the report, Levine mentioned four teacher education programs that stand out as doing exceptional jobs in producing competent teachers. Among the characteristics mentioned within these programs is excellent collaboration between the universities and the P-12 schools where interns and practicum students serve, a strong faculty presence in those P-12 schools, many hours in field experiences, and teaching that emphasizes the ability to work with diverse learners. Levine recommended that education programs make a greater effort to bridge the gap between theory and practice, and that the curriculum of education programs should contain three components: knowledge of subject matter, knowledge of pedagogy, and knowledge of different aspects of child development specifically as to how this relates to educating particular groups of students depending on need.

Authors of another book that support making the CCSS accessible to all students believe all levels of learners should be placed together in heterogeneous classes without tracking (Burris & Garrity, 2012). These authors have helped lead their district in reducing achievement gaps and in increasing the number of students who attend college. They believe that teaching should be learner centered and that a teacher's job is providing access to learning through differentiated instruction. Burris and Garrity described this approach as constructivist in that each learner brings his/her own background knowledge, prior achievement, disability, interests, and talents to each lesson. The teacher is to provide "maximization of learning for each individual student in

the class" (2012, p. 81). In order for a teacher to determine if this is happening, there should be more student talk and work and less teacher talk and work. The students should be given the tools, no matter their level or need, to dive in and learn and the teacher, with wise planning, should provide those tools. The following are some of the questions they suggested teachers ask themselves to determine if lessons are differentiated: Are all students engaged? Are multiple modes of presentation being used? And, are multiple modes available to display knowledge? The authors' school system operates from a Response to Intervention (RTI) model with a team approach for helping students with diverse needs. They discussed how a "pull-in" approach is used (2012, p. 109), instead of "pull-out," with perhaps a reading or math specialist, or a special education teacher coming in to co-teach.

In 2013, Shah noted that the timing was perfect to implement some well-established practices of special education within the general education field. With the adoption of the CCSS, teachers are struggling to teach to all. Two overarching principles within special education provide the perfect framework for giving teachers tools to accomplish this overwhelming goal. Response to Intervention (RTI) and Universal Design for Learning (UDL) are the two practices that have been implemented in different states to varying degrees.

The Council of the Great City Schools, a national organization representing the needs of urban public schools released a report that outlined the ways these two principles could foster better implementation of the CCSS (2003). While their mission is directly concerned with the needs of urban students, those same needs are those of students with disabilities, and the intent is the same: to effectively educate all students. The Council uses the term Multi-Tiered System of Supports (MTSS) rather than RTI, but the concept and implementation is the same: "instituting the CCSS with fidelity means embracing and addressing the diverse needs of ALL students"

(2003, p. 3). MTSS is a multi-tiered system that uses evidence-based practices to discern the needs of students in the classroom and respond appropriately. It is meant to help ensure that students are not inappropriately identified with learning difficulties simply due to poor instruction or inaccessibility to the instruction. In tier 1, instruction is assumed to be delivered from a Universal Design for Learning (UDL) approach (The Center for Applied Special Technology, 1999). This approach uses multiple methods of instruction, engagement, and assessment embedded within lessons planned for the entire classroom. In this tier, students are not given below grade level work but rather, through UDL, tools are put in place that provide access to the curriculum for varying levels and abilities of learners. In tier 2, if students continue to struggle after the use of UDL designed instruction, more focused, intensive support is provided. In tier 3, students receive specialized instruction that focuses on specific skills and concepts that are lacking and often special education services are the tool to accomplish this. In both tiers 2 and 3, the instruction is still aligned with the CCSS. It is important to understand that the main goal is to use UDL principles within this framework in order to ensure that good teaching is actually taking place rather than inappropriately identifying a student as having learning difficulties due to simply not being given access to the curriculum through poor planning and teaching. Collaboration among professionals is also key as teams make instructional decisions and plan strategies that will effectively address needs in the classroom. The Council concluded by recommending that districts should recognize the strong need to implement professional development for teachers that teach how to intertwine the CCSS with UDL principles.

The National UDL Task Force (2012) is comprised of more than 40 organizations some of which are the National Council for Teacher Accreditation of Teacher Education (NCATE), the

Council for Exceptional Children (CEC), CCSSO, and the National Education Association (NEA). The mission of this task force is to influence policymakers to pass legislation that incorporates the principles of UDL in order to improve educational opportunities and achievement for all learners. Its guiding principles are collaborative action, inclusiveness, flexibility, quality, and integrity. It is important to note that UDL has already been implemented as part of the Higher Education Opportunity Act (HEOA) (U.S. Department of Education, 2008). The HEOA discusses grants that may be given to teacher preparation programs which incorporate UDL principles for not only special education but also for general education preparation. Recently, the Task Force requested that the UDL principles be incorporated into the reauthorization of the ESEA Act. As of right now, states that are implementing multiple initiatives that incorporate UDL principles are Louisiana, Kentucky, Michigan, Maryland, Rhode Island, Maine, and Delaware. The extent and type of implementation differs according to each of those states. In addition, 32 other states are implementing approximately two state activities, with the remainder implementing only one, of which Tennessee is included. This activity in which Tennessee is a participant consists of a 22-state consortium called Partnership for Assessment of Readiness for College and Careers (PARCC) which is dedicated to creating assessments at the K-12 level which truly provide accurate pictures of all students' knowledge including those with disabilities (2013). PARCC released a second draft of the Accessibility Features and Accommodations Manual that not only suggests policies and accommodations for students with diverse needs but also provides information on, and access to, tools that will be provided through PARCC's assessment system to actually accomplish this goal.

National Center for UDL website contains encouraging studies of school districts that have begun the implementation of UDL practices (Ganley & Ralabate, 2013). One district

reported that based on standardized assessment data from the past four years, through the use of UDL, co-teaching, and tiered instruction (RTI), the proficiency gap as shown on student achievement data had been reduced by one-half for all classrooms that were participating in the implementation of those three strategies. Personnel from each district offered advice for others seeking to implement UDL into their school systems. One necessary element is the use of Professional Learning Communities (PLCs) where teachers, UDL facilitators, and others can come together to share ideas and resources and make plans. Another important factor is using professional development at all levels and actually modeling UDL principles in those sessions. And finally, it is very helpful if the curriculum used is written using the UDL framework, and one of the districts is now in the process of rewriting the curriculum for that very reason.

UDL defined. Given that UDL is undergoing a nationwide push to be implemented within states' P-12 schools, implementing UDL principles within education coursework for both general and special preservice educators seems to be the obvious choice in order to help transform the education system at the teacher preparation level. CAST, the Center for Applied Special Technology, began as an organization in 1984 founded on expanding and enriching learning opportunities for individuals with disabilities by providing access through technology. Since its inception, it has shifted and changed its focus to applying Universal Design principles to education that make it possible to provide access to the curriculum for learners of all levels and styles. Universal design was first used in architecture as a way to ensure the public, including those with disabilities, was provided access to buildings. For a person in a wheelchair, building a ramp provides access to the same building that others also occupy but by a different route. In the same way, a lesson plan that incorporates UDL principles provides access to the same curriculum, just in a way that more appropriately fits a learner with difficulties. The

encouraging thing is that just as architects saw not only people in wheelchairs use the ramps, but mothers with strollers or someone with a cane, in the same way, learners who may not have an identified disability can also benefit from having access to a lesson in a different way.

In their text, David Rose and Anne Meyer, two of CAST's founders, described how to use UDL in the classroom, making access to the curriculum possible for a wide range of learners (2002). They discussed how UDL incorporates strategies that are already being used in classrooms by good teachers everywhere and that have been proven in research. Some of these strategies are differentiated instruction, cooperative learning, embedded, formative assessment, and teaching learners how to learn.

In examining the research behind UDL, information on the brain and how the networking of the brain affects learning plays a big role in the concepts embedded within. (Rose & Meyer, 2002). There are three different types of networks within the brain and UDL addresses each of these: the *recognition network* by providing multiple and flexible methods of presentation, the *strategic network* by providing multiple and flexible methods of expression, and the *affective network* by providing multiple and flexible methods of engagement. When UDL is taught to preservice educators, it is important to instill in them the sense that UDL is not simply providing access to information, but rather it is to provide access to learning. If incorporated correctly, UDL principles encourage the learner to actually learn how to learn and teacher preparation programs would do well to change the focus of pedagogy training in these principles. CAST has been careful to base its foundation of UDL infused within learning on well-documented research (National Center on Universal Design for Learning, 2011). One of the newer areas of research by CAST is discovering the effectiveness of UDL principles as they are incorporated at the state and local levels. Hitchcock, Meyer, Rose, and Jackson (2002) discussed how states and districts are

still designing curriculum that operates from a core false assumption which is that there is a core group of students within every classroom that the curriculum should be designed around. Instead, designing curriculum materials using UDL as its foundation is encouraged, essentially giving teachers the tools to use from the beginning so there is no wasted energy or effort on finding alternatives.

Co-teaching, collaboration, and use of UDL are a part of the P-12 environment in our schools today. It is important for all teachers, both general and special educators, to meet the needs of all students and these practices are part of a foundation that can ensure this. Teacher educators need to institute these practices within preparation programs. The standards for teacher education programs are reviewed next to demonstrate that these practices are indeed interwoven throughout what is expected of our preservice candidates.

Current Professional Teaching Standards that Promote Effectively Educating All Students

Within CCSSO, the Interstate Teacher Assessment and Support Consortium (InTASC) (2011) develops and maintains a core of teacher preparation standards that are meant to ensure that teachers are prepared to effectively educate all students at the K-12 level. In order to continue to develop common threads throughout a transformed education system, these standards are in alignment with the CCSS, the National Board for Professional Teachers Standards (NBPTS), and the National Council for Teacher Accreditation of Teacher Education (NCATE). NCATE recently merged with the Teacher Education Accreditation Council (TEAC) to form the Council for the Accreditation of Educator Preparation (CAEP) to become the premier accrediting body of teacher preparation. CAEP released its new standards in August of 2013.

InTASC's standards are divided into four categories (Council of Chief State School Officer's Interstate Teacher Assessment and Support Consortium, 2011). The first category is the

learner. Teacher preparation institutions must ensure that its graduates understand the development of learners and that each student develops and progresses in different ways and at different speeds. The teacher must value this in each student and work to create an inclusive environment with collaborating partners that support and encourage through instruction that is adapted as needed for individuals. The second category is the *content*. It is important that each teacher has a full, in-depth grasp of the content knowledge required for their field. This in-depth knowledge should be such that the teacher can make it meaningful and accessible to all students. The third category is *instructional practice*. As teachers plan and then carry out lesson plans within the classroom, it is critical that they be able to develop lessons that use a variety of strategies and assessments in order to make the content accessible to all. It is important to use flexibility that is demonstrated in easily adapting and changing instruction as needed. The final fourth category is *professional responsibility*. It is assumed that teachers are lifelong learners who need continued professional development in order to best meet the ever-changing needs of students in today's classroom and who proactively seek collaboration with other professionals and parents to create the best learning environment possible for their students.

The standards set by InTASC for teachers are to reflect what each teacher should be able to do to ensure that all students across all disciplines will be able to achieve in spite of differences. As one reads the InTASC standards set for teachers, it is encouraging to see that the approach is one of acknowledging there will always be a wide range of abilities and diverse learning styles within a classroom. To begin with this assumption goes a long way toward ensuring that students are being offered multiple ways to learn and be assessed. In addition, it encourages ongoing collaboration among teachers as they reflect upon their teaching, their students' learning, and the possible adjustments that need to be made to continue to promote

growth. This encouraged collaboration can be a great catalyst for communication across disciplines, specifically between teachers of general education disciplines and those in special education.

As mentioned above, these standards created by InTASC are in alignment with CAEP (2013), the accrediting body of teacher preparation institutions, and its own standards. In order for an institution to be given accreditation by CAEP, it undergoes an extensive review process that includes preparation of reports by the institution as well as on-site visits by CAEP professionals. In its first annual report, it stated "The changing landscape for educator preparation accreditation creates many points at which CAEP can be a strong partner in moving P-12 student achievement to higher levels. CAEP…is a new accrediting body with new roles, new responsibilities, and new ways to interpret the traditional accreditation focus on preparation quality and program improvement. CAEP begins a new era in educator preparation accreditation" (2013, p. 14).

CAEP bases its standards on current research that reflects the best practices in use in schools today. The standards support the same belief as already discussed above: teacher candidate preparation should result in teachers who can effectively teach all children. It is noted in particular that the successful implementation of these standards are to be evidenced in the preparation of a candidate who can effectively teach all P-12 students, including, but not limited to, those with disabilities or exceptionalities. The following paragraph is a brief summary of three of CAEP's standards that show particular attention to the needs of students with disabilities and are not inclusive of all that is required of institutions in the preparation of teacher candidates.

The first standard is Content and Pedagogical Knowledge. An institution's candidates must demonstrate not only knowledge of their chosen discipline but the ability to communicate

that knowledge effectively to their future students through the use of appropriate pedagogical methods. This ability is enhanced by the understanding of unique learner differences and how this impacts the learning process. The second standard is Clinical Partnerships and Practice. Institutions must develop strong collaborative partnership with P-12 schools and learning in coursework should be extended to the field with well-designed opportunities that support candidates' effectively teaching all students in the classroom. And the fourth standard, Program Impact, is particularly concerned with the ultimate impact an institution's preparation of a teacher candidate will have on P-12 students. Multiple measures should be used to determine the impact of a candidate's teaching on P-12 student learning and the satisfaction of future employers' with candidates.

Discipline-specific standards aligned with teacher preparation standards. It is important to consider how general teacher preparation standards are aligned with the current standards adopted by discipline-specific associations regarding teacher preparation specifically in regard to teaching students with diverse learning needs. Just as it is crucial for teachers to align their lessons with the CCSS in order to effectively measure their students' progress, it is also important for discipline-specific associations to carefully align standards according to the broad overall teacher preparation standards as discussed above. The associations whose standards were reviewed were: the International Reading Association (2013), the National Council of Teachers of English (2012), the National Council of Teachers of Mathematics (2013, p. 4), the National Science Teachers Association (2012), the National Council for the Social Studies (2002), and the Council for Exceptional Children (2012). Upon examination there are common threads running throughout each of the associations' standards. The first is an assumption that students in all classrooms display a wide range of diverse needs. The second is

all teacher candidates must believe any and every student can learn. The third assumption is what must be adapted is the environment, not the student. The fourth is teachers must be knowledgeable of how best to create the most inclusive environment possible. The fifth is the knowledge that this is not something one teacher will do alone but it is a team effort, as reflected in the increased emphasis on co-teaching as well as other collaborative experiences such as Professional Learning Communities (PLCs) which are composed of teachers who have a shared vision and goal of student success (Hord, 1997). And finally, the sixth is the faculty preparing teacher candidates at this stage should have the knowledge and the ability to teach current practices which prepare teacher candidates for an inclusive, collaborative environment.

Research in Teacher Preparation on Best Practices to Effectively Educate All Students

Given the increasing use of UDL, co-teaching, and collaboration, the following studies link effectively preparing preservice teachers to teach students with disabilities using these practices.

Teacher preparation and UDL. Courey, Tappe, Siker, and LePage (1997) sought to determine to what extent teacher education candidates would increase their use of UDL practices in lesson planning tied to state content standards after participating in a three hour instructional module on UDL; 45 graduate students in a mild to moderate disabilities program were enrolled in two separate sections of a course on introducing mild to moderate disabilities. The students were taught by the same instructor in both sections. Students wrote three lesson plans, one at the beginning of the course, one after participating in a three hour online module training from the CAST website with guided notes, and one at the end of the semester. The template used for lesson planning was based on UDL principles. A rubric was used to assess the use of UDL principles of representation, action and expression, and engagement within the plan in addition to

how these were tied to lesson plan objectives, methods, and assessment. The data indicated a significant difference, showing improvement in the scores of lesson plans across time with no significant difference between sections. A medium effect size revealed a continued effect after training and then continued improvement several weeks later when the final lesson plan was written. The authors noted that while this study showed a positive effect for writing lesson plans incorporating UDL practices, whether or not the teacher candidates can actually implement them in teaching real lessons would require further research.

Authors of another study used a randomized, control group design with 72 graduate and undergraduate students in four special and general education classes (Spooner et al., 2007). Two classes were special education courses, General Curriculum Access and Instructional Planning of Lesson Plans, while the other two classes were general education, Middle Grades Science Methods and Middle Grades Math Methods. Students drew names from a hat in order to be assigned to either the treatment or control groups. Those in the control groups were given access to the intervention after the study. All groups were given a pretest in which they were asked to write a lesson plan incorporating the principles of universal design. A case study of one student in a hypothetical classroom was included and that student's needs were to be taken into account in the planning. The general education students were given a case study reflecting a student with a mild disability included in a hypothetical classroom and the special education students were given a case study that reflected a student with a severe disability in a self-contained classroom. The intervention was a one hour lecture on the three principles of UDL, how to incorporate these, and then practice with the lecturer assisting on writing a lesson plan using UDL principles. All students were then given a posttest in which they were asked to complete a lesson plan as before but with new case studies to address. Results indicated that mean scores increased from

pretest to posttest for both the special and general education experimental groups while mean scores stayed the same for both of the control groups. The authors noted that these students were not taught principles of UDL that required expensive technology but that the adaptations were inexpensive, simple strategies (e.g., using blocks as math manipulatives, creating a song as an expression of knowledge, or drawing rather than writing a sequence from a book) an instructor could easily insert into lesson plans. They also suggested that the longitudinal effects need to be studied to determine if teachers are actually using UDL principles within the classroom once they leave the program.

Authors of a qualitative study investigated the collaboration of general and special education faculty in a secondary education program (Frey, Andres, McKeeman, & Lane, 2012); 16 preservice teachers seeking licensure in seven different content areas were enrolled in a semester block of courses that included both general and special education coursework. Faculty worked together to intertwine the courses with the understanding that while the specific objectives of general and special education might not overlap considerably there were some overall broad principles that were important to both, namely that the institution wanted to produce high-quality teachers who knew their content, were prepared for inclusive classrooms, and were capable of making wise, ethical, and caring decisions in the classroom. Faculty modeled co-teaching in seminars throughout the semester and emphasized UDL principles and best practices for inclusive classrooms. In the seminars, content was integrated in order to help make connections between concepts. Several approaches were helpful in accomplishing this. MTSS (as explained above, this is the same as RTI) was used as a way to share strategies at each tier with both general and special education strategies interwoven at the appropriate tiers. A unit plan was assigned to preservice teachers but was graded for separate content by both instructors,

another helpful way for connections to be made between the two disciplines. Faculty taught that UDL principles were not simply an afterthought in lesson planning, but rather were to be woven throughout, again making connections for the students. Data were collected through portfolio artifacts generated during their internship semester and included lesson plans designed by the preservice teachers, teaching philosophy statements, unit assessments and reflections, and formal observations by mentor faculty and cooperating teachers. The artifacts were analyzed qualitatively and three themes emerged: the use of UDL practices in lesson plans, the appropriate use of instructional adaptations, and the impact of lesson planning on the outcomes of the preservice teachers' students.

Results indicated while many used UDL in their designs, some did not and struggled to understand the lack of engagement in their students. For those who did not use UDL, evaluations revealed the lack of multiple strategies within lessons. Many provided multiple forms of assessment, while some of those that did not indicated an awareness that they needed to incorporate methods other than paper/pencil tests next time. Overall, a willingness to provide adaptations for individual student needs was revealed along with the ability to identify needs and then implement the adaptation. The authors concluded that due to the variability within the content areas the data generated from student portfolios were highly inconsistent. It was suggested that further research use a larger sample size and incorporate standardized assessments in order to accurately assess student outcomes in a preservice teacher's classroom.

Authors developed another study in response to the implementation of standards-based certification for special and general education teachers in the state of Illinois in addition to the knowledge that new teachers needed more training in how to educate all learners (Laarhoven et al., 2006). Project ACCEPT's (Achieving Creative & Collaborative Educational Preservice

Teams) goal is to develop educators who are prepared for inclusive classrooms and who are knowledgeable and willing to collaborate across disciplines; 84 general and special education preservice teachers were recruited voluntarily to participate in project ACCEPT which included a course entitled "Collaborative Teaching in Inclusive Settings" that took place after methods coursework but prior to student teaching. The course focused on major competencies such as a positive attitude and disposition toward students with disabilities, incorporating UDL principles within lesson planning, and understanding as well as practicing collaboration. Within this course, participants collaborated on designing lesson plans and completed a field experience of at least six hours together which culminated in co-planning and co-teaching a lesson. The control group was enrolled in a traditional course that did not include these experiences. A pre- and post-survey was administered to measure attitudes regarding inclusion, and pre- and post-curricula probes were used to assess knowledge and application of instructional accommodations, assistive technology, and functional behavior assessments. Results showed significantly more growth across all areas from both instruments for the treatment group. In addition, an outcome survey was administered two years later. The control group was less positive about their preparation, less confident in their abilities, and wished more time had been spent on learning what to do in the classroom, while the treatment group was more positive about their preparation and noted that they wished more time had been spent on the practice that was given in the program.

Teacher preparation and co-teaching and collaboration. Due to inclusion, the boundaries between general and special education have become more blurred (Friend, Cook, Hurley-Chamberlain, & Shamberger, 2010) and co-teaching and/or collaboration is a result for which preservice educators are not always prepared. A teacher preparation program (Smith, Frey, & Tollefson, 2003) attempted to address concerns by preservice general educators that they

were not being adequately prepared to collaborate and co-teach students with disabilities in their classrooms. The university faculty worked to create a class that taught and modeled collaborative practices. A survey was administered prior to and after the course and attitudes toward collaboration were found to significantly improve. The modeling by faculty of collaboration made a true difference in how preservice educators perceived collaboration and in how well they understood the effort needed in order for collaboration to be successful.

In a study of preservice elementary and special education teachers ($N = 56$), researchers analyzed attitudes toward inclusion prior to and after coursework and field experiences that were purposefully designed to give opportunity for collaboration between the two disciplines (McHatton & Parker, 2013). Special and elementary education faculty co-taught a methods course and linked field experiences to the course by pairing a special and elementary preservice teacher in a collaborative placement. During the course, time was given to co-plan and co-teach lessons together. The Attitude Toward Inclusion survey was administered at the beginning and end of the course and then again one year later. Results revealed a positive attitude increase for elementary education teachers throughout, but attitudes for special education teachers remained relatively the same with a slight decrease after one year. While special education teachers had a higher overall mean, the fact that there was not a significant increase in this mean from pre to post was concerning and the authors questioned whether or not the reality of the field experiences shaped attitudes toward the negative. They recommended that field experiences be chosen carefully and noted that it was very important for faculty to model collaboration across disciplines.

In another study, faculty explicitly modeled co-teaching with positive results (Bacharach, Heck, & Dahlberg, 2008). The education department at this university believes that while much

is being implicitly taught about co-teaching, more explicit teaching needs to occur. The authors studied the impact of 16 co-taught general education classes for preservice teachers ($N = 372$) over the course of five semesters. Of the 16 pairs, six of these were a faculty member and a public school teacher and ten were two faculty members. Prior to co-teaching, the pairs attended a workshop together to learn the strategies of co-teaching as well as evaluate themselves on their working style and how this might impact teaching as a team. At the end of each course, students were given a survey that rated the impact of co-teaching on their learning. Faculty were also asked open-ended questions about their experience. Results of the student survey showed a high level of agreement with all statements. Having two different perspectives and a lower student/teacher ratio were rated the two highest. In addition, 89% of students said other courses should be co-taught and 74% said they learned more in a co-taught course than in one that was not co-taught. Faculty unanimously agreed they would like to co-teach again. They noted that having two minds was better than one and that the benefits of spending time together outweighed the extra time it took to prepare. In addition, many reported a renewed passion for teaching that came from learning from each other.

Arndt and Liles (2010) asserted that separate general and special education departments contribute to difficulties in co-teaching arrangements in schools. They believe that differentiated instruction is actually preferable for not only students with disabilities but all students. They also believe that preservice educators need to see teacher educators modeling both co-teaching and differentiated instruction. Their study paired special and general education preservice teachers together to modify a social studies lesson plan. It was revealed that while preservice teachers were open to the idea of co-teaching, they had concerns about the process. Special educators were concerned about not knowing the content while general educators were concerned about

not knowing how to differentiate. They saw their fields of teaching as separate and were concerned about their lack of knowledge in the opposite field, support from administrators, and mutual commitment with an assigned co-teacher. Despite the concerns, the authors found that participants thought co-teaching could be an effective model and were willing to incorporate it if given the opportunity in the classroom. They also concluded that while they co-planned instruction at the university level, no actual modeling of co-teaching by teacher educators was done thus the actual structure of the program at the university level could actually interfere with students' perceptions about co-teaching and their ability to effectively practice it.

A study by Conderman and Johnston-Rodriguez (2009) of beginning general and special educators' views on their university preparation for collaboration revealed some interesting findings. Two of the categories where general educators felt least prepared were in providing and implementing differentiation for students with disabilities and in co-teaching. They also rated the implementation of differentiation with low importance. While special educators felt best prepared in differentiation of course content, they felt less prepared in co-planning and co-teaching. And in stark contrast to general educators, they rated the use of differentiation and accommodations as one of the most important. When asked what was the most useful aspect of their teacher preparation programs, the importance of hands-on, field-based experiences rated high for all groups. When asked what was the most professionally challenging in their current teaching situation, all groups rated high the difficulties associated with interpersonal issues as teachers with different philosophies, styles and views of students attempted to work together. The authors concluded that coursework alone is insufficient when teaching future educators how to collaborate and educate students with disabilities. Field-based experiences that are specifically

focused on collaborating and implementing accommodations and differentiation should be a part of the curriculum in order to best prepare future teachers.

Austin (2001) investigated what type of teacher preparation do actual co-teachers recommend for today's preservice teachers. The results indicated that the typical view of special education teachers in the classroom is that of 'visitor' and both special and general education teachers felt that the general educator did more in the classroom. Both groups felt that co-teaching is worthwhile but that more preparation was needed for both general and special educators on how to collaborate effectively.

McHatton and Daniel (2008) conducted a study where preservice general and special education majors were given the opportunity to experience co-teaching at a local school together. After the experience, the interviews of the preservice educators revealed differences in training of special educators versus general educators in that co-teaching was rarely discussed in general education. This revealed the need for teacher educators to engage in early collaboration and modeling of best practices across the disciplines to prepare future educators for roles in co-teaching.

A landmark study in St. Cloud, MN (Bacharach, Heck, & Dahlberg, 2010) addressed a critical question: what are student outcomes at the P-12 level once exposed and taught in a co-teaching situation? The research question asked whether or not the reading and math achievement of elementary students improved due to being taught by co-teachers, specifically a preservice teacher paired with a mentor teacher. The results indicated that students taught in a co-teaching situation had higher mean proficiency levels than did their counterparts who were taught by only one teacher. The pilot was very successful with the mentor teachers and at the

time of publication there was a waiting list for mentors wanting to co-teach with a preservice teacher.

Researchers (Jetton, Cancienne, & Greever, 2008) responded to the need of a local high school to help struggling students in literacy by incorporating the use of PLCs that were composed of university professors, teacher candidates, and teachers at the school. Over a five year period, the PLC established a shared vision of literacy, changed the structure of the high school department to include staff who worked with English Language Learners (ELLs), changed the curriculum with a particular emphasis on meeting the needs of struggling students, coached teachers in new strategies for teaching students, and involved practicum preservice teachers in implementing new strategies as well. Results included the development of an environment that fostered collaboration and a meeting of the needs of all students as well as recognition by university faculty that their presence was needed at the P-12 level in more than just a "visitor" capacity.

In examining the preparation of preservice teachers particularly for collaboration, researchers Rigelman and Ruben (2012) believed that too often teacher candidates experience their student teaching in isolation resulting in entering the teaching field inexperienced in collaboration. They designed a study in which two preservice teachers student taught together with a mentor teacher in addition to being part of a PLC composed of the mentor, university supervisors and faculty, and school administration. There were 23 teacher candidates who participated in the study in either elementary or middle school classrooms. Data were collected through interviews as well as observations of interactions during PLCs. The authors found that candidates exited the program with a view of teaching as a collaborative process rather than an individual one. In addition, candidates shifted analyzing their own performance to that of their

students' learning. Rigelman and Ruben discussed how providing this experience helped teacher candidates understand the value in working with professional peers to gain help and advice, and they concluded that using PLCs can lead to the "development of the norm of collaboration among teacher candidates" (2012, p. 988).

Santagata and Guarino (2012) designed an undergraduate teacher education mathematics course, Learning to Learn from Mathematics Teaching, that combined coursework and paired student teaching with the explicit purpose of providing opportunity for collaboration. Data were collected through videotapes of participants analyzing together artifacts of practice (student sample work, transcripts of teacher-student interaction, and video of classroom lessons) during coursework and through interviews after their experience in fieldwork settings. Interview questions focused on the participants' perceptions of collaboration, the types of collaborative processed used, the frequency of collaboration, and the ways in which collaboration shaped their student teaching. Analysis of the data revealed two themes: the teacher candidates co-constructed their analyses of student thinking and learning, and they also co-constructed ideas for instructional improvements. Santagata and Guarino concluded that providing opportunity for collaboration in fieldwork can help prepare preservice teachers for collaboration skills that will be necessary at the P-12 level.

Teacher preparation program response. If there is a strong research base for UDL, co-teaching, and collaboration at the P-12 level and an increasing push toward implementation, should not the programs that are preparing the teachers to teach in those schools be systematically and deliberately incorporating these practices within the coursework and field experiences of its preservice teachers? The initiatives driven by the call for greater accountability at the P-12 level should wake up teacher preparation institutions to begin purposely instituting

what its preservice teachers are being asked to practice which is collaboration in inclusive environments.

Two overall conclusions can be drawn: how universities have handled the need to prepare preservice teachers for inclusive, collaborative classrooms has been disconnected and there is no universal agreement on how to do this or even on the need to do this. Several of the studies above demonstrate faculty acknowledgement that more should be done to model the practices of co-teaching, collaboration, and best practices for inclusive environments, but there has not been a comprehensive approach in how to accomplish this (Arndt & Liles, 2010; Harvey et al., 2010; McHatton & Daniel, 2008; McKenzie, 2009).

Robinson and Buly (2007) discussed this lack in teacher education programs, recognized that there has long been a divide between special and general education faculty, and attempted to begin conversations within their own department. The authors, faculty members of a northwestern regional university, one from general education and the other from special education, began by making separate lists of wording and phrases used in dealing with literacy. It was quickly apparent that there were indeed misunderstandings regarding terminology and not everyone was speaking the same language. This discovery led to research in the literature from the respective disciplines that confirmed this theory. Robinson and Buly then offered some suggestions as to how to get this conversation started in other departments. One suggestion was to move beyond the old argument about from which paradigm to operate. While general educators might view special educators as rigid and uncompromising, handing out stickers for good behavior based exclusively on scripted programs, special educators tend to view those in general education as lacking focus without enough direct instruction and modeling. Neither is probably actually true but continuing this discussion is getting educators nowhere when it comes

to determining best practices in inclusive classrooms. It was suggested that each discipline choose an article or chapter in a book that best described their philosophy of teaching, all read the chosen materials, and then meet together informally to discuss and attempt to understand each other's views. When these authors did this at their university what was found was that many of those misunderstandings about theory and pedagogy were again simply a misunderstanding about terms and how the terms were being used. It was also suggested to attend conferences together, research together, and co-teach across disciplines as guest speakers.

McKenzie (2009) surveyed teacher educators in special education ($N = 53$) regarding their perception of the effectiveness of preservice training in inclusion and collaboration. Results revealed the belief that preservice special educators are better prepared to engage in collaborative roles than preservice general educators. In addition, the special education faculty reported that the value of collaboration was significantly different between the two disciplines. The "splintered manner in which collaboration is addressed in many pre-service programs not only hinders but also likely precludes the production of skilled collaborators" (McKenzie, p391).

In a study by Harvey, Yssel, Bauserman, and Merbler (2010), 124 teacher educators were surveyed across the country to determine perceptions of the effectiveness of preservice training in inclusion and co-teaching; 70% reported that co-taught classes were not offered at their institution and that more resources, money, time, and co-teaching opportunities would assist efforts to prepare preservice teachers for inclusion and co-teaching. It was concluded that the limited exposure preservice teachers have to collaboration at the preparation level perhaps contributes to the difficulties then encountered at the P-12 level and that teacher educators need to develop a shared vision across disciplines to provide opportunities for co-teaching and collaboration.

Cooper, Kurtts, Baber, and Vallecorsa (2008) responded to a request from superintendents of local schools to have better prepared general education preservice teachers for inclusive classrooms. They developed a survey of faculty that examined to what extent faculty were teaching key inclusion competencies (which they derived beforehand based on an in-depth review of current research) in coursework, how faculty viewed their own knowledge and skills related to these concepts, and what resources faculty thought was needed to be able to more effectively integrate these concepts into the program. Two hundred forty-two faculty members were identified and sent the survey based on the criteria that they had taught one of the core courses of the general education disciplines in the last two years, with a 30% return rate. Approximately 36% of faculty reported their own knowledge and skills in how to prepare preservice teachers to work with students with disabilities was "extremely limited" to "somewhat limited" with 26% reporting "not at all" to "very little" in regard to knowledge and skill base in reflecting best practices for teaching students with disabilities. In response to open-ended questions, several themes emerged. There was overall concern that faculty need to know how to teach students to connect learning objectives to professional standards in meeting diverse learning needs as is required in NCATE. In addition, resources and funding to support faculty development in these areas of best practice are desired along with providing collaborative opportunities across disciplines. Some of the results of this institution's survey have been opportunities for faculty development and for co-teaching, and the creation of a dual major in elementary and special education. In addition, professional development opportunities are being offered at local schools by university faculty.

Grenot-Scheyer, Coots, and Bishop-Smith (2004) examined federal reforms and mandates, three teacher preparation programs and their responses to calls for collaborative,

inclusive teachers, and discussed the lessons learned that could frame teacher preparation responses. The authors stated that efforts to make any changes must be based on the essential reason why making changes is necessary to begin with and that is the students in the classroom. Any student, whether one with a disability or not, should be central in decisions made and it is important that this focus not be lost. Suggestions made were the need to establish connections across disciplines that were meaningful and purposeful, the need to ensure that field experiences were supervised and chosen thoughtfully to provide the best exposure and practice, and that support from the top down was essential. Just as P-12 classrooms are now home to both general and special educators together, so too should classrooms at the university level reflect this.

McCray and McHatton (2011) recognized the need to change curriculum content in education preparation. Preservice general education students took a survey prior to and after a course on integrating students with disabilities into the general education classroom. The students' perceptions of including students with disabilities in the general education classroom showed a positive increase in mean scores from pre to post survey (pre $M = 3.94$, post $M = 4.31$), but concerns were voiced over not having enough training in strategies and accommodations to use for those students once in the classroom. The authors recognized that while the course load is already perhaps too heavy, something needs to be changed to better prepare preservice educators for the needs of diverse classrooms. "Teacher educators can only strengthen programs by building relationships across disciplines. Instructional strategies and accommodations that seamlessly grant students with disabilities maximum access to the general education curriculum should naturally be infused in methods courses" (2011, p. 151).

Allday, Neilsen-Gatti, and Hudson (2013) reviewed coursework for elementary teacher education programs for four identified competencies they identified as necessary for general

educators to successfully teach in inclusive classrooms. The four competencies were a basic knowledge of characteristics and needs of students with disabilities, the ability to differentiate instruction, classroom and behavior management skills, and the ability to collaborate effectively with special educators. There were 109 universities included in the study and these were representative of the four geographic regions in the country. The coursework that was examined was only that listed as explicitly teaching to these competencies. If one of the four competencies was listed within other multiple objectives of the course it was not included. Overall, between 7-10% of coursework was specifically dedicated to educating students with disabilities in inclusive settings. The authors stated that "it is evident that many university teacher preparation programs in elementary education are allocating minimal coursework to issues related to disabilities and may not be adequately preparing their graduates for entry into today's inclusive schools" (2013, p. 306). When examining each competency separately, one-third of programs did not require a course on characteristics of disabilities; only 27% of universities offered at least 3 hours on differentiating instruction; only 41% required a course in classroom management; and a sparse 6% required a course in collaboration. Their findings suggested that teacher reports of inadequacy in inclusive settings might indicate lack of preparation for these settings in their teacher preparation programs and suggest a "possible disconnect between what preservice teachers are taught and what they face as practicing teachers" (2013, p. 308).

Pugach and Blanton (2012) addressed the need to more adequately explore exactly what is within teacher education program curricula concerning diversity in the classroom. While many teacher education programs have responded to the call to produce teachers educated in both general and special education, what this exactly means for these programs has not been systematically analyzed. To begin this examination, these authors examined the syllabi and

curricula of three schools which have merged programs resulting in teacher candidates with both general and special education licensure upon graduation. Pugach and Blanton specifically addressed the question as to how the issue of diversity, not just disability but also class, culture, race, and language, is addressed. While the findings were encouraging, it was concluded that the integration of content concerning inclusion and diversity is in more of a "transitional rather than transformational" process (2012, p. 265).

Education legislation and policy and professional teacher education standards are in agreement that schools must effectively educate all students, a responsibility shared by general and special educators. Growing research evidence identifies collaboration, co-teaching, and UDL as effective, i.e. best practices, for achieving the goal of educating all students. However, research is mixed and limited on how teacher preparation programs are responding to this need.

Need for the Study

The above review of literature demonstrates that the practices of collaboration, co-teaching, and UDL are supported through legislation and policy, professional teaching standards, and research in preservice teacher preparation. The research in teacher preparation programs, however, has not systematically examined how and if programs have changed in response to changing legal requirements, professional standards, and realities of the P-12 environment. The review reveals a gap in the research of teacher educators' use of these best practices for preparing preservice teachers for inclusive classrooms. Studies show that there is a disconnect between what is taught in preparation programs and what new teachers encounter at the P-12 level, and that viewpoints of general and special education faculty are not always the same as to what preservice teachers even need in their preparation. While some universities do have a partnership between general and special education faculty, collaboration within others can be

minimal at best. This study was designed to determine the extent to which teacher educators practice/use, teach, and are confident about the practices of co-teaching, collaboration, and Universal Design for Learning (UDL). The results of this study can help define more specifically current practices in teacher preparation programs and changes needed to further the preparation of all teachers for today's inclusive, collaborative classrooms.

Substantive Framework

Transformative learning theory is a framework for how we as humans understand and apply meaning to our experiences, and in the correct circumstances, change and reframe our thinking and understanding (Mezirow, 1997). Our frames of reference are the assumptions we have about our world which determine how we think and act and are based on two elements, habits of mind and points of view. Habits of mind are more deeply ingrained and less subject to change and are based on broad, overall ways of thinking that reflect cultural, social, educational, economic, political, or psychological beliefs. Points of view are determined by habits of mind and affect how an individual interprets an experience. Mezirow discusses transformative learning as occurring in four ways. The first is simply an elaboration of one's own point of view by finding more evidence to support it. The second is establishing a new point of view whereby one creates a negative meaning for a new concept or idea. The third is transforming one's point of view by identifying inaccurate assumptions and modifying or changing those assumptions. And the fourth is transforming one's habit of mind which means becoming aware of one's own bias and actively changing that ingrained way of thinking. A typical response to the encounter of a new idea is to first reject it. But "when circumstances permit, transformative learning moves toward a frame of reference that is more inclusive, discriminating, self-reflective, and integrative of experience" (1997, p. 5). The circumstances that permit such transformative change are the

ability to critically evaluate our own assumptions and also the assumptions of those we engage in discourse with, the creation of an environment that values such discourse and encourages it, and the realization that there should be active resistance against forces that would distort learning.

The transformative learning theory is an appropriate framework for examining teacher education faculty as they face the challenge of preparing preservice teachers for inclusive classrooms. As classroom environments have changed at the P-12 level, have the faculty preparing the teachers who teach at this level also changed? In response to federal mandates and initiatives, teacher preparation standards, and the research so far on these issues, widespread revamping of teacher preparation programs is not necessarily the answer. As teacher educators, I believe it is critical that we continually engage in transformative learning in order to best serve those we teach. Examining the principles and practices of inclusive, collaborative classrooms that are taught to our preservice teachers in education coursework as well as their value to education faculty serves as a good starting point for conversation that can lead to transformative learning at the faculty level.

Purpose of the Study

The purpose of the study is to determine the extent to which teacher education faculty teaching across the range of disciplines and populations in approved Education Preparation Provider Programs (EPPs) in Tennessee prepare their teacher education candidates to meet the needs of all students, including those with disabilities.

Research Questions

1. To what extent do faculty in teacher education programs report that they practice collaboration, co-teaching, and principles of UDL (through multiple methods of presentation, engagement, and assessment)?

2. To what extent do faculty in teacher education programs report that they teach collaboration, co-teaching, and principles of UDL (through multiple methods of presentation, engagement, and assessment)?

3. To what extent do faculty in teacher education programs express confidence in their ability to incorporate collaboration, co-teaching, and principles of UDL (through multiple methods of presentation, engagement, and assessment) in their coursework?

4. To what extent do faculty in teacher education programs report:

(a) department support for collaboration practices?

(b) use of co-teaching models?

5. To what extent are education faculty's self-reported practice, teaching, and confidence in the following related?:

(a) collaboration

(b) co-teaching

(c) UDL

6. Are there significant differences between general and special education faculty in reported

(a) practice of principles of collaboration, co-teaching, and UDL?

(b) teaching of principles of collaboration, co-teaching, and UDL?

(c) confidence in principles of collaboration, co-teaching, and UDL?

(d) department support?

(e) use of specific co-teaching models?

7. Do education faculty who strongly indicate they practice collaboration report significantly different levels of departmental support than those who less strongly indicate they practice collaboration?

8. Do education faculty who strongly indicate they practice co-teaching report significantly different use of co-teaching models than those who less strongly indicate they practice co-teaching?

9. What themes emerge when faculty are asked to describe obstacles to:

    (a) collaboration?

    (b) co-teaching?

    (c) UDL?

10. Are faculty able to provide acceptable examples of:

    (a) co-teaching?

    (b) UDL?

CHAPTER II: METHOD

I conducted a descriptive research study using an online survey instrument administered state-wide to faculty in teacher education programs (general education and special education) to assess the extent to which they report their practice of, teaching about, and confidence in co-teaching, collaboration, and implementation of universal design for learning (UDL).

Participants

The target population of the survey was faculty, both special and general education, of teacher education departments in the state of Tennessee. I sought to obtain participation from all members of the population.

According to the 2012 Report Card for teacher training programs in the state of Tennessee, there are 44 approved Education Preparation Providers (EPPs) with five different institution types (Tennessee Higher Education Commission, 2012): Tennessee Board of Regents (TBR), University of Tennessee (UT), Tennessee Independent Colleges and Universities Association (TICUA), alternative provider, and private for profit. Of these, six are within the TBR, 27 are within TICUA, three are within UT, six are alternative providers, and two are private for profit entities. At the time of survey distribution, two EPPs no longer had teacher education programs, three EPPs were alternative providers who partner with other institutions for education coursework, and three EPPs were alternative providers who do not require education coursework and have no teaching faculty. This reduced the number of institutions with potential participants to 36. Of the deans/directors at the 36 institutions, one declined to participate, seven failed to respond to emailed invitations, and three initially said they would participate but did not send the link to their faculty. This resulted in 25 participating institutions.

The demographics of the participating institutions was wide and varied with some institutions having departments as small as one faculty member to the largest with 49 faculty members. To gain a better understanding of the target population, the Carnegie Foundation's classification of institutions (2010) based on size was used to separate the institutions into five categories: very small (0 to 499), small (500-1999), medium (2000-4999), large (5000-9999), and very large (10,000 or more). For each size institution, two were randomly chosen as representatives to describe the number of general teacher education faculty members and the number of special education teacher education faculty members. For the category of very small, it is important to note that there were no special education faculty. For the remainders of the categories, the average ratio of general education faculty to special education faculty was 18 to 3 which results in a percentage of 86% general education faculty to 14% special education faculty. In addition, the average gender ratio of female to male faculty for these institutions was 10 to 5 which results in a percentage of 66% female to 34% male faculty.

Of the 219 participants from the 25 participating institutions, 49 were excluded. These participants opened the survey and exited, apparently choosing not to participate. In addition, ten adjunct participants were removed from the resulting survey data. The resulting number of participants was 154. See Table 1 for a summary.

Table 1

Demographic Characteristics of Survey Participants

Demographic category	Number of participants
Gender	
Female	118
Male	36
Race	
African American	5
Asian	1
Caucasian	143
Hispanic	2
Other	3
Setting	
Rural	40
Suburban	45
Urban	63
Type of institution	
Private	72
Public	76
Size	
Very small (0-499)	1
Small (500-1999)	31
Medium (2000-4999)	34
Large (5000-9999)	20
Very large (10,000 or more)	62
Teacher Education Faculty	
General Education	110
Special Education/Both	38
Did not specify discipline	6

Instrument

In determining which type of item format to use, closed- or open-ended, several things were considered (Colton & Covert, 2007, pp. 174-200, 228-241). With closed-ended items, data are easily accessible and quickly analyzed, participants are more likely to respond, and there is less chance of violating anonymity. For open-ended items, the potential for a greater depth in responses from the participant is possible in spite of more time and resources needed for

analysis. To maximize the amount and type of information gained, I included both closed- and open-ended questions in the survey.

When considering the target population in the study an online survey seemed particularly appropriate. Faculty at a university are usually comfortable working online, an online survey can be taken fairly quickly, the administration of the survey and the storing and analyzing of data are efficient, and the anonymous format gives freedom to respond honestly.

The method used to create the survey in this study involved the following steps: a) review of literature and professional teaching standards, as well as informal discussions with faculty with expertise in special education, general education, and survey research; b) development of pilot survey that was administered to the faculty at the institution where I am a doctoral student; c) interviews of four faculty with expertise in reading education, science education, and special education who had participated in the pilot; d) refinement and restructuring of the initial pilot survey into a second pilot survey; e) administration of the second pilot survey to faculty at an academic conference I attended; and f) analysis of the results of the second pilot survey that resulted in the instrument used for the study.

First, I reviewed the literature regarding the practices to be studied to see if other researchers had previously assessed these practices and created instruments for this purpose. Because relatively little research has been conducted to evaluate these practices in education departments, there is not a wide range of established instruments or tools available but a few articles were helpful in addressing how to frame items. Frey et al. (2012) surveyed a university's faculty in teacher education regarding key competencies of inclusion; this is a valuable resource. I contacted Kurtts, one of the principle researchers and received permission to utilize the Frey, et.al. survey in any way in order to advance the research.

The review of current professional standards by the Interstate Teacher Assessment and Support Consortium (Council of Chief State School Officer's Interstate Teacher Assessment and Support Consortium, 2011) also directly contributed to the creation of the instrument. As noted before, these standards have been adopted by the following associations: International Reading Association, National Council for Teachers of English, National Council for Teachers of Mathematics, National Science Teachers Association, National Council for the Social Studies, and Council for Exceptional Children. Two other important sources were used in the development and refinement of the survey instrument. First, a highly valuable resource is the National Center on UDL (2011). As mentioned previously, the CAST website is a vast resource of all the research that provides empirical evidence of the checkpoints within the UDL framework. Second, input from experts in special education, general education, and survey research contributed to the development of items.

I pretested the first pilot survey in a survey research class I was enrolled in during the fall of 2012. Feedback from participants in a small group setting was used to refine the survey. I analyzed the overall structure of the survey in addition to the stem and response sets. Specific things analyzed were assurance that the stems were clearly worded with exhaustive choices given, checking that there were no double-barreled items, and that the instructions given were clear and easily understood. There were 46 items (43 closed-ended, 3 open-ended) in this pilot survey. I administered the survey to faculty in the education department in spring of 2013. It then underwent another extensive revision based on feedback from informal interviews of four faculty members (in the disciplines of special education, reading education, and science education) who were participants in the pilot survey this past spring, as well as suggestions from my committee members. This revision resulted in a streamlined instrument of 29 items (24 closed-ended, 5

open-ended) that more directly addressed the research questions. Originally, in the first pilot survey faculty responded to items about the type of knowledge or skill a preservice teacher should have; in contrast, in the resulting instrument faculty were asked to respond to items about their own knowledge or skill.

I administered the second pilot instrument to faculty at a conference I attended in fall of 2013. I sent an email requesting permission to pilot the second survey to CEC's Teacher Education Division (TED) president and the conference co-chairs at the November 2013 conference. I was given permission to request conference attendees to participate after my presentation as well as through any social gatherings at the conference. I offered incentives of five random drawings for $10 Starbucks gift cards. Thirty-one participants completed the survey, some in paper/pencil format and others in an online format created on UTK's Qualtrics system. For those who completed the paper/pencil format, I entered the resulting data into the online database.

Evidence of psychometric adequacy of the second pilot instrument was established. To determine internal consistency reliability, Chronbach's alpha was calculated for the 24 closed-ended items ($\alpha = .89$). Correlations of items assessing similar constructs (practice, teaching, and confidence; department support; and use of co-teaching models) were calculated and showed consistency in an expected manner (range of correlations: $\alpha = .70$ to .92). Further, two sources of evidence for validity of the survey include review and feedback from experts; and content validity, i.e., content of items was drawn from professional literature. Analyses provided preliminary evidence of psychometric adequacy of the second pilot instrument, which was then used in this study (see Appendix D). The 24 closed-ended items comprise scales and subscales: a) Practice, Teaching, and Confidence in Collaboration, Co-teaching, and UDL (PTC scale) (15

items); b) Practice Subscale (five of the 15 items from scale PTC); c) Teaching Subscale (five of the 15 items from scale PTC); d) Confidence Subscale (five of the 15 items from scale PTC); e) Department Support for Collaboration Subscale (three items); and f) Use of Co-Teaching Models Subscale (six items). All 24 closed-ended items were forced response but participants could opt not to respond to the 11 demographic questions (e.g. discipline taught, size and type of institution, years teaching, age, gender). Of the five open-ended items: a) three asked participants to report obstacles to implementing the principles and practices in question (collaboration, co-teaching, and UDL); and b) two asked participants to provide examples they used in their coursework of the principles of co-teaching and UDL. Participants could opt not to answer open-ended items.

Response rates for online surveys are generally lower than paper-based surveys with one study finding that the average response return rate for paper-based is 56% and 33% for online (Nulty, 2008). Archer discussed that it is also important to consider the purpose of a survey (2008). If the goal is for suggestions and direction in improvement of a program, then lower response rates can be meaningful. He stated that rates even lower than 40% can generate much data that can be used for a program's benefit. Based on this information, no expected response rate was set. The 25 EPPs within the state who chose to participate are varied from large, public, research universities to small, private, liberal arts colleges. Of the potential 481 participants, 154 completed the survey (a 32% response rate) with a ratio of 110 general education faculty to 38 special education faculty (six chose not to specify discipline) and 118 female to 36 male faculty. Thus, the participating sample was comprised of the following ratios: 74% general education faculty, 26% special education faculty, and 77% female, 23% male faculty. The participating population was comprised of the following ratios: 86% general education, 14% special

education, and 66% female, 34% male. Consequently, the return rate and the demographics of the participating sample appear to be adequately representative of faculty in the institutions surveyed.

Procedure

I submitted a proposal to the University of Tennessee's Institutional Review Board and received approval in early November 2013 with the second pilot survey included as the first step as discussed above in the Instruments section. I obtained permission by email (Appendix A) to utilize the email list of the Tennessee Association of Colleges for Teacher Education (TACTE) from TACTE's president in order to access deans/department heads of the institutions of higher education that are state approved teacher education programs. In addition, I contacted the deans/department heads of the EPPs who are not members of TACTE (e.g., TICUA, TBR) via email to access the remaining potential participants. I then sent all deans/department heads an email (Appendix B) explaining the study and requesting permission to send them a survey link to be distributed to their teacher education faculty.

For those institutions who had agreed to participate, I sent an email to the deans/department heads containing the link to the online survey for them to distribute to all potential participants (Appendix C) in early December 2013. I requested that the potential number of participants be reported and all 25 institutions reported with the total number being 481.

I followed all ethical guidelines as outlined by the University of Tennessee's Institutional Review Board. The introduction page of the survey was an informed consent letter that explained the study's purpose and asked for their permission to use data collected. Participation was voluntary and participants were informed that their responses would be

anonymous. Participants were given the opportunity to select "agree to participate" or "prefer not to participate." If they chose to participate they were directed to the main body of the survey, and if they chose not to participate they were directed to an exit page. The surveys were coded so that participants' identities remain unknown. In addition to collecting information on the use of the principles, demographic data were gathered of the faculty. The demographics focused on the type of coursework taught as well as the type of institution at which they taught. The data collected from survey responses were automatically entered into the UTK Qualtrics survey database which is made available for use by UTK students for research.

Data Analysis

In order to assure that the data collected met the requirements and assumptions of the statistical techniques to be used, data were cleaned by removing participants who did not complete the survey in addition to those who identified themselves as adjunct. Tests for linearity and normality of the data were conducted on all quantitative items. Histograms were used to aid in visualizing the normality of the data. Cronbach's alpha coefficients were calculated (all 24 closed-ended items and each subscale within: Practice, Teaching, and Confidence in Collaboration, Co-teaching, and UDL (PTC Scale), Practice Subscale, Teaching Subscale, Confidence Subscale, Department Support for Collaboration Subscale, and Use of Co-Teaching Models Subscale). Descriptive statistics of individual items were calculated, i.e., frequencies, means, and standard deviations. Correlations between all of the subscales were calculated.

Once this initial analysis was complete, the demographics of the respondents were analyzed and categories were created. Faculty could choose general education, special education, or both, as their area of instruction in education coursework. All those who chose special education, whether as a single area of instruction (n = 24) or as both general and special

education (n = 14), were grouped in one group with those choosing only general education (n = 110) into another. I initially planned to use a category of level of instruction taught (i.e. birth to kindergarten, elementary, middle, secondary). Initial analyses revealed many faculty teaching multiple levels (1 level 18%, 2 levels 29%, 3 levels 37%, and 4 levels 16%) making this category not meaningful. I also initially planned to use a category of discipline of instruction taught (i.e. English/Language Arts, Mathematics, Science, Social Studies, Special Education) but this also revealed faculty teaching multiple disciplines (1 discipline 58%, 2 disciplines 16%, 3 disciplines 15%, 4 disciplines 5%, and 5 disciplines 6%) making this category not meaningful as well.

I originally intended to analyze responses of participants to the single item "I collaborate with colleagues" by dividing these into two categories: those who chose "strongly disagree" and "disagree" as the first and those who chose "agree" to "strongly agree" as the second (the participants who chose "neutral" were removed from this computation). A *t*-test was then to be used to calculate significant differences between these two groups in responses to the Department Support Subscale. This analysis was not possible due to the skewed participant response with 141 of the 154 participants either choosing "agree" or "strongly agree" and only nine participants choosing "disagree" or "strongly disagree."

The responses of participants to the single item "I model co-teaching" were divided into two categories: those who chose "strongly disagree" and "disagree" as the first and those who chose "agree" to "strongly agree" as the second (the participants who chose "neutral" were removed from this computation). A *t*-test was used to calculate significant differences between these two groups in responses to the Use of Co-teaching Models Subscale.

Five open-ended items were analyzed qualitatively. For the first three qualitative questions concerning obstacles to the principles studied, I analyzed the responses given using the

constant comparison method (Glaser & Strauss, 1967) to identify main themes present. As I read the responses, the frequency of occurrences of themes was recorded. In addition, a description of the emerging themes was given as well as samples of respondents' answers. For the two qualitative questions that asked participants to give examples of co-teaching and UDL, the definitions of each were used to determine if responses were acceptable.

In order to ensure reliability of data analysis of the responses, two graduate students in education were trained in identifying the themes of the first three questions and in identifying acceptable responses for the last two questions. Using the table created from the open-ended response data, I added the identified themes/definitions at the top of the data sheet with each theme/definition color-coded. I then constructed sample responses and showed the graduate students how to color-code each appropriate response. Each student was given his/her own un-coded data sheet in order to analyze the data, which they did during their graduate assistantship hours. Inter-rater reliability was determined by calculating the mean of the three raters for all coded responses and was 91.6%.

CHAPTER III: RESULTS

The linearity and normality of the individual items (N = 154) of the Practice, Teaching, and Confidence in Collaboration, Co-teaching, and UDL (PTC Scale) were determined and, with the exception of two ("I model co-teaching" and "I teach the principle of co-teaching in my coursework"), data distribution was non-normal. Values were negatively skewed (skewness range = -1.0 to -2.3) with a positive kurtosis (kurtosis range = 1.2 to 7.6). Internal consistency as measured by Cronbach's alpha was .93 for the PTC Scale, and for each of the five-item subscales as follows: .76 for the Practice Subscale, .88 for the Teaching Subscale, and .91 for the Confidence Subscale. The means and standard deviations of the PTC Scale (15 items) were obtained. These range from 3.22 to 4.55 with five representing strongly agree to one representing strongly disagree. The responses are reported by Subscale to answer research questions 1, 2, and 3 below. See Table 2 for a summary of frequencies, skewness, and kurtosis.

1. To what extent do faculty in teacher education programs report that they practice collaboration, co-teaching, and principles of UDL (through multiple methods of presentation, engagement, and assessment)?

In general, for the Practice Subscale (items 1 to 5), faculty reported high levels of agreement (M = 4.22, SD = .64) about their practices with the exception of "I model co-teaching" (M = 3.22, SD = 1.16); means, standard deviations, frequencies, and percentages are reported in Table 2.

Table 2

Summary of Descriptive Statistics for the Practice in Collaboration, Co-Teaching, and UDL Scale (Practice Subscale)

Practice Subscale	Mean	Standard Deviation	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
			Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)
1.I collaborate with colleagues	4.42	0.92	5 (3.2%)	4 (2.6%)	4 (2.6%)	49 (31.8%)	92 (59.7%)
2.I model co-teaching	3.22	1.16	12 (7.8%)	34 (22.1%)	36 (23.4%)	52 (33.8%)	20 (13%)
3.I use multiple methods of presentation when planning and implementing my own lessons	4.49	.86	4 (2.6%)	4 (2.6%)	1 (0.6%)	48 (31.2%)	97 (63%)
4.I use multiple methods of engagement when planning and implementing my own lessons	4.55	.71	2 (1.3%)	2 (1.3%)	1 (0.6%)	53 (34.4%)	96 (62.3%)
5.I use multiple methods of assessment when planning and implementing my own lessons	4.44	.75	2 (1.3%)	2 (1.3%)	6 (3.9%)	61 (39.6%)	83 (53.9%)
Overall	4.22	.64	5 (3.24%)	9.2 (5.98%)	9.6 (6.22)	52.6 (34.16%)	77.6 (50.38%)

Note. $N = 154$

2. To what extent do faculty in teacher education programs report that they teach collaboration, co-teaching, and principles of UDL (through multiple methods of presentation, engagement, and assessment)?

In general, for the Teaching Subscale (items 6 to 10), faculty reported high levels of agreement about their teaching ($M = 4.23$, $SD = .78$) with the exception of "I teach the principle of co-teaching" ($M = 3.68$, SD = 1.17); means, standard deviations, frequencies, and percentages are reported in Table 3.

Table 3

Summary of Descriptive Statistics for the Teaching of Collaboration, Co-Teaching, and UDL Scale (Teach Subscale)

Teach Subscale	Mean	Standard Deviation	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
			Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)
6.I teach the principle of collaboration in my coursework	4.28	.95	4 (2.6%)	6 (3.9%)	11 (7.1%)	55 (35.7%)	78 (50.6%)
7.I teach the principle of co-teaching in my coursework	3.68	1.17	9 (5.8%)	19 (12.3%)	26 (16.9%)	58 (37.7%)	42 (27.3%)
8.I teach my preservice education students how to use multiple methods of presentation in their lessons	4.42	.84	3 (1.9%)	2 (1.3%)	11 (7.1%)	49 (31.8%)	89 (57.8%)
9.I teach my preservice education students how to use multiple methods of engagement in their lessons	4.42	.85	3 (1.9%)	2 (1.3%)	12 (7.8%)	47 (30.5%)	90 (58.4%)
10.I teach my preservice education students how to use multiple methods of assessment in their lessons	4.33	.91	3 (1.9%)	5 (3.2%)	13 (8.4%)	50 (32.5%)	83 (53.9%)
Overall	4.23	.78	4.4 (2.82%)	6.8 (4.4%)	14.6 (9.46%)	51.8 (33.64%)	76.4 (49.6%)

Note. $N = 154$

3. To what extent do faculty in teacher education programs express confidence in their ability to incorporate collaboration, co-teaching, and principles of UDL (through multiple methods of presentation, engagement, and assessment) in their coursework?

For all of the items in the Confidence Subscale (items 11-15), faculty reported high levels of agreement about their confidence ($M = 4.37$, $SD = .69$); means, standard deviations, frequencies, and percentages are reported in Table 4.

Table 4

Summary of Descriptive Statistics for the Confidence in Collaboration, Co-Teaching, and UDL Scale (Confidence Subscale)

Confidence Subscale	Mean	Standard Deviation	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
			Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)
11.I am confident in my ability to incorporate the principle of collaboration in my coursework	4.42	.77	2 (1.3%)	2 (1.3%)	9 (5.8%)	58 (37.7%)	83 (53.9%)
12.I am confident in my ability to incorporate the principle of co-teaching in my coursework	4.02	.95	4 (2.6%)	7 (4.5%)	23 (14.9%)	68 (44.2%)	52 (33.8%)
13.I am confident in my ability to teach my preservice education students how to use multiple methods of presentation in their lessons	4.49	.79	3 (1.9%)	2 (1.3%)	5 (3.2%)	51 (33.1%)	93 (60.4%)
14.I am confident in my ability to teach my preservice education students how to use multiple methods of engagement in their lessons	4.53	.75	3 (1.9%)	0 (0%)	6 (3.9%)	48 (31.2%)	97 (63%)
15.I am confident in my ability to teach my preservice education students how to use multiple methods of assessment in their lessons	4.40	.80	2 (1.3%)	2 (1.3%)	12 (7.8%)	54 (35.1%)	84 (54.5%)
Overall	4.37	.69	2.8 (1.8%)	2.6 (1.68%)	11 (7.12%)	55.8 (36.26%)	81.8 (53.12%)

Note. $N = 154$

4. To what extent do faculty in teacher education programs report:

(a) department support for collaboration practices?

(b) use of co-teaching models?

Analyses of linearity and normality on the three item Department Support Subscale indicated non-normal distribution. Values were negatively skewed (skewness range = -1.2 to -1.7) with a positive kurtosis (kurtosis range = 0.8 to 3.0). Internal consistency as measured by Cronbach's alpha was .86. The potential responses of participants (N=154) to survey items were from one to five as follows: strongly disagree, disagree, neutral, agree, and strongly agree. The means and standard deviations were calculated with faculty reporting high levels of agreement on department support with an overall $M = 4.18$, $SD = .91$. See Table 5 for a summary of all items including means, standard deviations, frequencies, and percentages.

Table 5

Summary of Descriptive Statistics for Department Support Subscale

Department Support Subscale	Mean	Standard Deviation	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
			Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)
1.My department/program values collaboration between colleagues on how to best prepare teacher candidates to meet the needs of all students	4.31	.97	5 (3.2%)	6 (3.9%)	7 (4.5%)	54 (35.1%)	82 (53.2%)
2.My department/program provides or encourages formal professional development opportunities (e.g. workshops, conferences) on how to best prepare teacher candidates to meet the needs of all students	4.13	1.07	5 (3.2%)	10 (6.5%)	18 (11.7%)	48 (31.2%)	73 (47.4)
3.My department/program provides or encourages informal professional development opportunities (e.g., faculty meetings, sessions led by colleagues) on how to best prepare teacher candidates to meet the needs of all students.	4.10	1.07	6 (3.9%)	9 (5.8%)	18 (11.7%)	52 (33.8%)	69 (44.8%)
Overall	4.18	.91	11 (3.43%)	8.33 (5.4%)	14.3 (9.3%)	51.3 (33.37%)	74.7 (48.47%)

Note. $N = 154$

The linearity and normality of the six item Use of Co-Teaching Models Subscale were determined with a mix of normal and non-normal distribution. Internal consistency as measured by Cronbach's alpha was .85. The potential responses of participants ($N = 154$) to survey items were from 1 to 5 as follows: never, one class per semester, several classes in a semester, one class every week, every class. The means and standard deviations were calculated with faculty reporting low levels of use of co-teaching models with an overall $M = 1.68$, $SD = .70$. See Table 6 for a summary of all items including means, standard deviations, frequencies, and percentages.

Table 6

Summary of Descriptive Statistics for Use of Co-Teaching Models Subscale

Use of Co-Teaching Models Subscale	Mean	Standard Deviation	1 Never	2 One class per semester	3 Several classes in a semester	4 One class every week	5 Every class
Identify how often you use the following models of co-teaching:			Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)
1.One teach, one observe (one teacher leads large-group instruction while the other gathers data on specific students or the class group)	1.73	.96	88 (57.1%)	26 (16.9%)	34 (22.1%)	5 (3.2%)	1 (0.6%)
2.One teach, one assist (one teacher leads instruction while the other circulates among the students offering individual assistance)	1.92	1.03	76 (49.4%)	24 (15.6%)	46 (29.9%)	6 (3.9%)	2 (1.3%)
3.Parallel teaching (each teacher has half the class, present the same material for the primary purpose of fostering instructional differentiation and increasing student participation)	1.51	.86	106 (68.8%)	22 (14.3%)	22 (14.3%)	3 (1.9%)	1 (0.6%)
4.Station teaching (students rotate between three stations with the teachers at two stations while the third is an independent work station)	1.49	.86	107 (69.5%)	26 (16.9%)	16 (10.4%)	3 (1.9%)	2 (1.3%)
5.Alternative teaching (one teacher works with most students while the other works with a small group for remediation, enrichment, assessment, preteaching, or another purpose)	1.48	.79	106 (68.8%)	25 (16.2%)	20 (13.0%)	3 (1.9%)	0 (0%)
6.Team teaching (both teachers lead large-group instruction by both lecturing, illustrating two ways to solve a problem, etc.)	1.94	1.06	74 (48.1%)	28 (18.2%)	43 (27.9%)	5 (3.2%)	4 (2.6%)
Overall	1.68	.70	92.8 (60.28%)	25.2 (16.36%)	30.2 (19.6%)	5 (2.67%)	10 (1.07%)

Note. $N = 154$

5. To what extent are education faculty's self-reported practice, teaching, and confidence in the following related?:

(a) collaboration

(b) co-teaching

(c) UDL

Because assumptions of normality generally were not met, correlations between the PTC subscale and the three subscales, Practice, Teaching, and Confidence within, were calculated

using the nonparametric measure Spearman's rho. The following ranges were used in interpreting the correlations: small positive = .1 to .3; medium positive = .3 to .5; large positive = .5 to 1.0; small negative = -.1 to -.3; medium negative = -.3 to -.5; and large negative = -.5 to -1.0. (Gravetter and Walnau, 2008). The relations between all the subscales were large and positive. See Table 7 for a summary.

Table 7

Spearman's Rho Correlations Between Practice, Teaching, and Confidence in Collaboration, Co-Teaching, and UDL Scale (PTC Scale), Practice Subscale, Teaching Subscale, and Confidence Subscale

	PTC	Practice	Teach	Confidence
PTC	--	.79**	.93**	.86**
Practice		--	.59**	.53**
Teach			--	.78**
Confidence				--

Note. **Correlation is significant at $p < 0.01$ (2-tailed).

6. Are there significant differences between general and special education faculty in reported:

(a) practice of the principles of collaboration, co-teaching, and UDL?

(b) teaching of the principles of collaboration, co-teaching, and UDL?

(c) confidence in the principles of collaboration, co-teaching, and UDL?

(d) department support?

(e) use of specific co-teaching models?

When responses of general education faculty ($n = 110$) were compared to those of faculty who taught both (general education and special education) ($n = 38$), the Mann-Whitney nonparametric *t*-test indicated significant differences with general education faculty scoring lower in two items, "I teach the principle of co-teaching in my coursework" ($p < .01$) and "I am

confident in my ability to incorporate the principle of co-teaching in my coursework" ($p < .01$). As expected due to the differences in the co-teaching items within the Teaching and Confidence Subscales, responses to the two subscales Teaching and Confidence were significantly different with general teacher education faculty scoring lower in both teaching ($p = .02$) and confidence ($p = .01$). See Tables 8 through 12 for means and *t*-test results and Table 13 for *t*-test results of subscales.

Table 8

Summary of Means and Mann-Whitney t-tests of Practice in Collaboration, Co-Teaching, and UDL Scale (PTC Scale) by General Education and Special Education/Both Faculty

Practice Subscale	General Education Faculty (n = 110)		Special Education Faculty (n = 38)		Mann-Whitney *t*-test
	Mean	Standard Deviation	Mean	Standard Deviation	*p*-value
Practice Subscale					
1.I collaborate with colleagues	4.39	0.90	4.53	1.03	.09
2.I model co-teaching	3.29	1.18	3.03	1.13	.24
3.I use multiple methods of presentation when planning and implementing my own lessons	4.54	.84	4.45	.95	.67
4.I use multiple methods of engagement when planning and implementing my own lessons	4.64	.63	4.37	.88	.06
5.I use multiple methods of assessment when planning and implementing my own lessons	4.47	.69	4.39	.92	.96
Overall	4.27	.58	4.15	.80	

Note. Significant at $p < .05$.

Table 9

Summary of Means and Mann-Whitney t-tests of Teaching of Collaboration, Co-Teaching, and UDL Scale (Teaching Subscale) by General Education and Special Education/Both Faculty

Teaching Subscale	General Education Faculty (n = 110)		Special Education Faculty (n = 38)		Mann-Whitney t-test
	Mean	Standard Deviation	Mean	Standard Deviation	p-value
6.I teach the principle of collaboration in my coursework	4.28	.90	4.37	1.08	.23
7.I teach the principle of co-teaching in my coursework	3.60	1.15	4.08	1.15	.01
8.I teach my preservice education students how to use multiple methods of presentation in their lessons	4.45	.81	4.50	.89	.45
9.I teach my preservice education students how to use multiple methods of engagement in their lessons	4.44	.82	4.53	.89	.30
10.I teach my preservice education students how to use multiple methods of assessment in their lessons	4.32	.89	4.53	.89	.09
Overall Means	4.22	.73	4.40	.87	

Note. Significant at $p < .05$.

Table 10

Summary of Means and Mann-Whitney t-tests of Confidence in Collaboration, Co-Teaching, and UDL Scale (Teaching Subscale) by General Education and Special Education/Both Faculty

Confidence Subscale	General Education Faculty (n = 110)		Special Education Faculty (n = 38)		Mann-Whitney t-test
	Mean	Standard Deviation	Mean	Standard Deviation	p-value
11.I am confident in my ability to incorporate the principle of collaboration in my coursework	4.45	.70	4.47	.89	.39
12.I am confident in my ability to incorporate the principle of co-teaching in my coursework	4.00	.94	4.34	.91	.01
13.I am confident in my ability to teach my preservice education students how to use multiple methods of presentation in their lessons	4.48	.74	4.61	.95	.06
14.I am confident in my ability to teach my preservice education students how to use multiple methods of engagement in their lessons	4.55	.66	4.63	.94	.07
15.I am confident in my ability to teach my preservice education students how to use multiple methods of assessment in their lessons	4.41	.76	4.53	.86	.19
Overall	4.37	.61	4.52	.87	

Note. Significant at $p < .05$.

Table 11

Summary of Means and Mann-Whitney t-tests of Department Support Subscale by General Education and Special Education/Both Faculty

Department Support Subscale	General Education Faculty (n = 110)		Special Education Faculty (n = 38)		Mann-Whitney t-test
	Mean	Standard Deviation	Mean	Standard Deviation	p-value
1.My department/program values collaboration between colleagues on how to best prepare teacher candidates to meet the needs of all students	4.33	.99	4.29	.98	.63
2.My department/program provides or encourages formal professional development opportunities (e.g. workshops, conferences) on how to best prepare teacher candidates to meet the needs of all students	4.14	1.03	4.11	1.25	.73
3.My department/program provides or encourages informal professional development opportunities (e.g., faculty meetings, sessions led by colleagues) on how to best prepare teacher candidates to meet the needs of all students.	4.10	1.05	4.16	1.18	.52
Overall	4.19	.91	4.18	1.01	

Note. Significant at $p < .05$.

Table 12

Summary of Means and Mann-Whitney t-tests of Use of Co-Teaching Models Subscale by General Education and Special Education/Both Faculty

Use of Co-Teaching Models Subscale	General Education Faculty (n = 110)		Special Education Faculty (n = 38)		Mann-Whitney t-test
Identify how often you use the following models of co-teaching:	Mean	Standard Deviation	Mean	Standard Deviation	p-value
1.One teach, one observe (one teacher leads large-group instruction while the other gathers data on specific students or the class group)	1.76	.98	1.63	.85	.59
2.One teach, one assist (one teacher leads instruction while the other circulates among the students offering individual assistance)	1.95	1.07	1.82	.90	.63
3.Parallel teaching (each teacher has half the class, present the same material for the primary purpose of fostering instructional differentiation and increasing student participation)	1.55	.88	1.39	.72	.37
4.Station teaching (students rotate between three stations with the teachers at two stations while the third is an independent work station)	1.48	.85	1.50	.83	.88
5.Alternative teaching (one teacher works with most students while the other works with a small group for remediation, enrichment, assessment, preteaching, or another purpose)	1.49	.79	1.45	.76	.85
6.Team teaching (both teachers lead large-group instruction by both lecturing, illustrating two ways to solve a problem, etc.)	1.87	1.05	2.13	1.07	.16
Overall	1.69	.69	1.65	.64	

Note. Significant at $p < .05$.

Table 13

Mann-Whitney t-test Comparing Categories of General Education and Special Education/Both on the Practice, Teaching, and Confidence in Collaboration, Co-Teaching, and UDL Scale (PTC Scale), Practice Subscale, Teaching Subscale, Confidence Subscale, Department Support Subscale, and Use of Co-Teaching Models Subscale

	PTC	Practice	Teaching	Confidence	Department Support	Use of Co-teaching Models
Mann-Whitney U	1693.50	2013.00	1568.00	1482.50	2061.50	2055.50
Wilcoxon W	7798.50	2754.00	7673.00	7587.50	8166.50	2796.50
Z	-1.74	-.34	-2.31	-2.71	-.13	-.16
Asymptote Significance (2-tailed)	.08	.73	.02	.01	.90	.88

Note. Significant at $p < .05$.

7. Do education faculty who strongly indicate they practice collaboration report significantly different levels of departmental support than those who less strongly indicate they practice collaboration?

As explained in the data analysis section, responses to these questions were overwhelmingly homogeneous ("strongly agree" and "agree" responses combined $n = 141$), indicating a high level of agreement of department support for the majority of respondents. Consequently, this question could not be addressed.

8. Do education faculty who strongly indicate they practice co-teaching report significantly different use of co-teaching models than those who less strongly indicate they practice co-teaching?

The responses of participants to the single item "I model co-teaching" were divided into two categories: those who chose "strongly disagree" and "disagree" as the first ($n = 46$), and those who chose "agree" to "strongly agree" as the second ($n = 72$); the participants who chose

"neutral" were removed from this computation. A Mann-Whitney non-parametric *t*-test indicated significant differences ($p = .00$) between the two groups on all items of the subscale Use of Co-teaching Models (see Table 14). Participants who agreed with the statement "I model co-teaching" consistently significantly endorsed use of six types of co-teaching more than those who disagreed with the statement.

Table 14

Mann-Whitney t-test on the Use of Co-Teaching Models Subscale with Two Groups, Disagree and Agree

Identify how often you use the following models of co-teaching:	One teach, one observe (one teacher leads large-group instruction while the other gathers data on specific students or the class group)	One teach, one assist (one teacher leads instruction while the other circulates among the students offering individual assistance)	Parallel teaching (each teacher has half the class, present the same material for the primary purpose of fostering instructional differentiation and increasing student participation)	Station teaching (students rotate between three stations with the teachers at two stations while the third is an independent work station	Alternative teaching (one teacher works with most students while the other works with a small group for remediation, enrichment, assessment, preteaching, or another purpose)	Team teaching (both teachers lead large-group instruction by both lecturing, illustrating two ways to solve a problem, etc.)
Mann-Whitney	757.00	715.00	994.50	1065.00	925.50	672.50
Wilcoxon W	1838.00	1796.00	2075.50	2146.00	2006.50	1753.50
Z	-5.48	-5.60	-4.35	-3.98	-4.84	-5.84
Asymptote Significance (2-tailed)	.00	.00	.00	.00	.00	.00

Note. Significant at p □ .05.

9. What themes emerge when faculty are asked to describe obstacles to:

(a) collaboration?

(b) co-teaching?

(c) UDL?

For the first question about obstacles to collaboration, 93 of 110 general education and 29 of 38 special education faculty responded with a ratio of 76% to 24% respectively, the same as their ratio in the overall sample. Five themes emerged: lack of time, separation of

classes/departments/schedules of general and special education faculty members, no obstacles, "buy-in" to the idea of collaboration, and lack of skill/knowledge in collaboration. To yield a sense of perceived obstacles based on discipline (general versus special education), percentages were calculated for each of the themes. Table 15 contains a summary of the number and percentages of general education and special education faculty responses by theme. Almost 30% of general and special education faculty indicated lack of time as an obstacle to collaboration. Other identified obstacles were not as similarly endorsed. For example, 38% of special educators indicated separate departments as an obstacle compared to only 16% of general education faculty.

Table 15

Summary of Obstacles to Collaboration

What do you believe are the greatest obstacles, if any, in incorporating the principle of collaboration within your education preparation program?	General Education Faculty *n* = 93	Special Education/Both Faculty *n* = 29	Percentage Endorsed by General Education versus Special Education/Both
Lack of time	27	8	29%/28%
Separation of classes/departments/schedules of general and special education faculty	15	11	16%/38%
No obstacles	13	6	14%/21%
"Buy-in" to the idea of collaboration	15	3	16%/10%
Lack of skill/knowledge in collaboration	6	4	6%/14%

Note. Percentages of responses by general educators do not add up to 100% due to some participants including more than one theme in an answer and/or some answers not occurring frequently enough to be placed into a theme; same for responses by special education faculty.

For the second open-ended question about obstacles to co-teaching, 98 of 110 general education and 29 of 38 special education faculty responded with a ratio of 77% to 23% respectively, again consistent with the ratio in the overall sample. Five themes emerged: separation of classes/departments/field placements in general and special education, lack of time, lack of skill/knowledge in co-teaching, "buy-in" to the idea of co-teaching, and no obstacles. Table 16 contains a summary of the number and percentages of general education and to special education faculty responses by theme. About 40% of general and special education faculty cited separate departments as an obstacle to co-teaching. Lack of time, the second most commonly cited obstacle to co-teaching, was endorsed somewhat more highly by special educators than general educators. These two obstacles were also the most commonly cited across both groups as obstacles to collaboration. Interestingly, general and special educators differed on lack of knowledge/skill and differed substantially on "buy in" to co-teaching with special educators citing these obstacles more.

Table 16

Summary of Obstacles in Incorporating the Principle of Co-Teaching

What do you believe are the greatest obstacles, if any, in incorporating the principle of co-teaching within your education preparation program?	General Education Faculty *n* = 98	Special Education/Both Faculty *n* = 29	Percentage Endorsed by General Education versus Special Education/Both
Separation of classes/departments/schedules of general and special education faculty	38	12	39%/41%
Lack of time	15	6	15%/ 21%
Lack of skill/knowledge in co-teaching	12	6	12%/ 21%
"Buy-in" to the idea of co-teaching	7	6	.07%/21%
No obstacles	5	2	.05%/.07%

Note. Percentages of responses by general educators do not add up to 100% due to some participants including more than one theme in an answer and/or some answers not occurring frequently enough to be placed into a theme; same for responses by special education faculty.

For the third open-ended question about obstacles to incorporating UDL, 92 of 110 general education and 23 of 38 special education faculty responded with a ratio of 80% to 20% respectively, again similar to the sample demographics. Five themes emerged: no obstacles, lack of time, lack of skill/knowledge in using UDL, lack of technology access/materials, and "buy-in" to the idea of using UDL. Table 17 contains a summary of the number and percentages of general education and special education faculty responses by theme. Interestingly, a significant percentage of general educators (just over one-third) and almost one-half of the special educators cited no obstacles to implementing UDL and about a quarter in both groups cited lack of time. General and special educators differed on lack of knowledge/skill of UDL and substantially on lack of technology/access with special educators endorsing these more highly.

Table 17

Summary of Obstacles in Using UDL

What do you believe are the greatest obstacles, if any, in using multiple methods of presentation, engagement, and assessment within your education preparation program?	General Education Faculty *n* = 92	Special Education/Both Faculty *n* = 23	Percentage Endorsed by General Education versus Special Education/Both
No obstacles	33	11	36%/48%
Lack of time	25	6	27%/26%
Lack of skill/knowledge in using UDL	12	5	13%/22%
Lack of technology access/materials	7	4	.08%/17%
"Buy-in" to the idea of using UDL	7	1	.08%/.04%

Note. Percentages of responses by general educators do not add up to 100% due to some participants including more than one theme in an answer and/or some answers not occurring frequently enough to be placed into a theme; same for responses by special education faculty.

10. Are faculty able to provide acceptable examples of:

(a) co-teaching?

(b) UDL?

For the fourth open-ended question asking for examples of co-teaching used by participants, 74 of 110 general education and 23 of 38 special education faculty responded with a ratio of 74% to 26% respectively, consistent with their ratio in the overall sample. A count of both valid and invalid examples of all types of co-teaching as defined by Friend, et.al., (2010) was made. Of the responses, 34 of the 74 (46%) general education faculty provided acceptable examples of how co-teaching was used in their coursework and 13 of the 23 (57%) special education/both faculty provided acceptable examples. Twenty-six general education faculty

(35%) and six special education/both faculty (26%) stated they did not practice co-teaching. Four faculty from each discipline (12% of general educators and 31% of special educators) provided unacceptable examples of co-teaching as defined by Friend, et.al. (2010). Table 18 contains examples of statements made by participants.

Table 18

Sample Participant Responses to Survey Question About Co-Teaching Examples

Provide an example of how you incorporate co-teaching in your coursework.	
General Education Faculty	I have never co-taught with a special education professor… Note: I answered ALL of the questions according to the provided definition of collaboration/co-teaching between general education and special education instructors. The answers would be different if I answered based on my relationships with instructors within my own program.
	In this department, there is not a culture conducive to co-teaching except when the course is cross-listed, or necessary for both elementary and secondary students.
	I was blessed to work on a team where the students signed up for different course numbers which were assigned to an individual professor but each one was assigned to the same classroom and time.
	I would LOVE to co-teach, but cannot get any other faculty member to agree to co-teach. Schedules, planning time, and faculty knowledge of co-teaching are obstacles.
	My department does not support co-teaching with other faculty.
Special Education Faculty	Although I am a co-instructor on one course, I rarely have the opportunity to teach alongside my colleagues. Generally, only one of us is present during class at any one time.
	I plan collaboratively but typically do not teach at the same time as another colleague.

For the fifth open-ended question asking for examples of UDL used by participants, 74 of 110 general education and 23 of 38 special education faculty responded with a ratio of 76% to 24% respectively, consistent with the overall sample. From the CAST website, a general definition was generated to use as a guide in determining if examples given of UDL were valid. The definition was as follows: present information and content in different ways (the "what" of learning); differentiate the ways that students can express what they know (the "how" of learning); stimulate interest and motivation for learning (the "why" of learning). Of the responses, 73 general education faculty provided acceptable examples of how UDL was used in their coursework and 23 special education/both faculty provided acceptable examples. The single unacceptable response was simply “none.” In effect, all general and special educators who responded to this question gave acceptable examples (proportions determined in same manner as question about collaboration). Table 19 provides examples of UDL given by participants.

Table 19

Sample Participant Responses to Survey Question About UDL Examples

Provide an example of how you incorporate UDL in your coursework.	
General Education Faculty	Links to outside resources, audio, choices for assessment, partner work, field trips, singing, drawing, acting, writing, video clips, limited lecture, jigsaw group work, MovieMaker, SMART boards, graphic organizers, Smart Art, e-Portfolios, LiveText, technology, discussion board, collaborative learning teams, online learning activities, case studies, map reading, integrated text exploration, pointing with a laser, post-it notes on screen, vocabulary with graphics, wikis, iPads, think-pair-share, world café, carousel, Prezis, reader’s theatre, foldables,
Special Education Faculty	differentiated practices, role play, small group activities, choices for assessment, hands-on modeling, discussion board, blogs, student products, student presentations, journal keeping, pecha kucha, wikis, centers, video reflections, simulations, brain-based teaching practices, Smartboards

CHAPTER IV: DISCUSSION

Students with disabilities are included more frequently in general education classrooms. Teachers are required to possess not only the skills to teach those students as well as any others that struggle but also the skills to collaborate with other professionals in order to determine best practices for teaching those students. Teacher educators are responsible for the preparation of those teachers. Have education preparation programs adequately responded to this need? The purpose of this study was to assess faculty of teacher education programs at universities and colleges across the state of Tennessee to determine the use of specific practices, co-teaching, collaboration, and Universal Design for Learning, in preservice teacher preparation.

The theoretical framework of this study is based on Mezirow's (1997) transformative learning theory which asks a learner to actively modify and change one's theories about how one approaches life as one engages in discourse and applies meaning and understanding to new circumstances. This is particularly appropriate as a context within which to address faculty response within teacher education programs in relation to changes at the P-12 level. The participants of this study were teacher education faculty from teacher preparation programs. Results are based on participant responses to an online survey that consisted of both closed- and open-ended questions. In this chapter, the findings of the research questions are presented in relation to previous literature and the context of Mezirow's transformative learning theory. Implications for transforming teacher education programs and future research are discussed as well as limitations to the study.

Findings

Studies on the training preservice teachers receive on the principles of collaboration, co-teaching, and UDL reveal that when explicitly incorporated into teacher education programs, attitudes and ability increase (Bacharach et al., 2010; Laarhoven et al., 2006; Shippen, Crites, Houchins, Ramsey, & Simon, 2005; Spooner et al., 2003). However, researchers have also shown that inaccurate expectations of competencies needed in classrooms exist in preservice teacher candidates based on differing experiences in coursework and/or fieldwork (Arndt & Liles, 2010; Gardiner & Robinson, 2009; Gehrke & Cocchiarella, 2013; Wasburn-Moses, 2009). Differences in general and special education faculty approaches have contributed to this confusion and lack of commonalities between the two disciplines (Cooper et al., 2008; Harvey et al., 2010; McHatton & Daniel, 2008; McKenzie, 2009).

One of the goals of this study was to determine the extent to which faculty practice collaboration, co-teaching, and implement UDL, and then to determine if there were significant differences when faculty were divided into separate categories of general and special education faculty. Results indicate that most faculty report they practice collaboration and UDL, but report less that they co-teach. General and special education faculty responded similarly to questions about these practices, that is, there were no significant differences between the two groups. I believe this finding is to be expected. In general, collaboration at the university level is a professional expectation. UDL is still a relatively new concept but it is gaining in use and is seen more and more frequently from the arenas of legislation (National UDL Task Force, 2012) to that of standardized testing (Partnership for Assessment of Readiness for College and Careers, 2013). Collaboration and UDL are relatively easy to include in typical coursework for the preservice teacher. The finding on co-teaching also is not surprising. Co-teaching at the

university level is not unheard-of (Bacharach et al., 2008), but it is certainly not the norm as Harvey (2010) found in a survey where 70% of faculty report that their institutions do not offer co-taught classes, as well as the results of Arndt and Liles' (2010) study that revealed the need for teacher educators to more closely model concepts such as co-teaching.

Another goal was to determine the extent to which faculty report they teach about collaboration, co-teaching, and UDL, and then determine if there were significant differences when comparing the two groups of general and special education faculty. Mean scores indicated similar results as above with most faculty reporting they teach about collaboration and UDL and fewer saying they teach about co-teaching. Those who teach special education more strongly agreed than general education faculty when asked if they teach co-teaching. The third goal was to determine the extent to which faculty report confidence in their knowledge of and skills in collaboration, co-teaching, and UDL, and then if there were any significant differences between general and special education faculty. Mean scores indicated most faculty report confidence in all three; however, special education faculty expressed stronger confidence in co-teaching.

Results can be linked to Harvey's survey results (2010) which revealed a difference in general and special education faculty's perception of the importance of coursework on collaboration for preservice teachers with general education faculty reporting that this was not necessarily an expected part of preservice study. A similar result was also found by McKenzie (2009) with 95% of surveyed institutions requiring a collaborative course for special education preservice teachers but only 16% requiring the same for general education preservice teachers. Results of Cooper's (2008) survey, while it did not separate general and special education faculty responses, revealed that approximately 36% of faculty describe their knowledge and skill level in preparing teacher candidates to teach students with disabilities as "extremely limited" to

"somewhat limited," and approximately 45% describe their own knowledge and skill level as reflecting current best practices for teaching students with disabilities as "not at all" to "somewhat." In a survey of preservice teachers, Arndt and Liles (2010) found the perception of preservice teachers revealed a dividing line between general and special education teacher candidates, with a need for more explicit modeling of co-teaching by faculty as well as a wider base of knowledge acquired in teacher education programs for general educators to teach students with disabilities and for special educators to teach content knowledge.

As might be expected, relations between reported practice, teaching, and confidence of collaboration, co-teaching, and UDL were strongly related; similarly, these findings support other studies (Arndt & Liles, 2010; Harvey et al., 2010) regarding co-teaching and collaboration practices. The relation between teaching and confidence across the three practices was stronger than in the relation between practice and teaching or practice and confidence, which could indicate that confidence may have more of an impact on what they teach about than what they actually implement in practice.

Both closed and open ended items were used to assess collaborative practices among the surveyed faculty. Most faculty agreed or strongly agreed that their department provides support and level of support does not vary based on general versus special education status. This finding is interesting when compared to findings by Harvey (2010), McKenzie (2009), and Cooper (2008), who all concluded that a more collaborative culture with more opportunities for faculty collaboration needs to be incorporated at the university level. Grenot-Scheyer and Coots (2004) concluded that collaborative efforts must become a new habit of mind at the university level in order to best prepare preservice teachers to meet the needs of all students. They emphasized that establishing linkages across disciplines was essential and would only happen through

collaboration of faculty where each brought to the table their expertise and where meaningful experiences were established so preservice teachers were prepared for the P-12 environment of teaching to all. Despite acknowledgement of strong departmental support for collaboration, open-ended responses by participants in this study identified time as an obstacle to collaboration (30% by both general and special education faculty); in addition, 38% of special education faculty cited separate departments as another obstacle. These findings again echo those of other researchers' (Arndt & Liles, 2010; Gehrke & Cocchiarella, 2013; Grenot-Scheyer et al., 2004; Harvey et al., 2010; McHatton & Daniel, 2008; McKenzie, 2009) whose findings revealed that collaboration through things such as aligned coursework, paired fieldwork, and faculty professional development is needed across disciplines in order to effectively prepare preservice educators to teach all students.

As with collaborative practices, both closed and open ended items were used to assess co-teaching practices of surveyed faculty. Not surprisingly, there was a significant difference with those who more strongly indicate practicing co-teaching also more likely to indicate the use of co-teaching models. In describing obstacles to incorporating co-teaching within education coursework, similar responses were obtained from faculty with the largest reported theme again separation of disciplines (39% general education to 41% special education) and the second lack of time. This finding reiterates those of studies above: the separation of disciplines and the lack of time available to incorporate these principles are major contributing factors in implementing either collaboration or co-teaching. In addition, it is interesting to note that special educators indicated more frequently than general educators a lack of knowledge/skill in co-teaching (21% special educators, 12% general educators) as well as a lack of "buy in" to the idea of co-teaching (21% special educators, .07% general educators) as obstacles. Authors of other studies have also

demonstrated these differences in levels of knowledge/skill as well as importance, or lack of, placed on best practices for inclusive classrooms in teacher education programs (McCray & McHatton, 2011; McHatton & Daniel, 2008; McKenzie, 2009). Participants were also asked to give examples of how they incorporate co-teaching within their coursework. Of the responses given, 46% of general educators and 57% of special educators provided acceptable examples. However, the majority of remaining answers were not unacceptable but rather participants stated they did not practice it (35% to 26% respectively), which again echoes findings of other studies (Arndt & Liles, 2010; Harvey et al., 2010) where co-teaching is simply not a common practice.

When asked to describe obstacles to incorporating the principle of UDL in education coursework, the number one response faculty gave was that there were no obstacles (36% general educators to 48% special educators). The second themed response was lack of time and the third was lack of skill and/or knowledge. Participants were also asked to give examples of how they incorporate UDL principles in their coursework. Of the participants who chose to answer this question, 99% of general educators and 100% of special educators provided acceptable examples of UDL. These responses validate the findings in research questions above that determine extent of the practice and teaching of UDL. It would appear that this principle is being incorporated in education coursework for both general and special education preservice teachers and that, at least for this sample of the population, it is understood and correct examples are utilized.

Implications

What do these results mean for teacher educator preparation programs? If one operates from the premise that the goal of preparing teacher candidates is to ensure they are ready for differing needs at the P-12 level, then modeling educator preparation as closely to what the P-12

schools look like seems an obvious response. The practices of collaboration and co-teaching, and the principles of UDL are now a part of the vocabulary and practice of our P-12 schools and teacher preparation institutions need to follow.

Results suggest that faculty are more familiar with and better prepared to practice and teach collaboration and UDL than they are to co-teach. However, special education faculty report they teach more and are more confident about co-teaching than general education faculty. In addition, because one of the most frequent responses to obstacles to collaboration and co-teaching is time and separation of disciplines, results seem to indicate that faculty from the two disciplines need to spend more time deliberately collaborating with one another in order to better incorporate these practices in teacher education programs. These results indicate that the practice of co-teaching needs to increase at the university level, specifically with faculty from both general and special education together. In order for cross-discipline co-teaching to occur, support needs to come from within the department (or departments). Paradoxically, though responses indicate that most faculty surveyed believe that their department supports efforts to collaborate, one of the most reported obstacles to collaboration and co-teaching is separate departments/classes/schedules.

It seems that one of the single most important obstacles that need to be hurdled is overcoming the limitations placed on departments when general and special education faculty operate as separate entities. Instead, in spite of time constraints, faculty from both disciplines need to deliberately come together and create PLCs as modeled at the P-12 level. I firmly believe that this would be the perfect starting point in which to determine how best to educate our preservice teachers to teach to all. Once these are formed, how to better practice and model collaboration, co-teaching, and UDL as teacher educators could be addressed. I do not think it

would necessarily need to be an overhaul of current teacher education programs, but instead the intertwining of these principles within already existing coursework and field experiences. Creatively increasing time within coursework and fieldwork experiences where general and special education departments can work together to give teacher candidates exposure and experience in these principles seems to be a necessary component in order to effectively model environments seen at the P-12 level. Perhaps scheduling methods courses at the same time so that classes could be co-taught would be one answer. Based on results of this study, it is interesting to note the overlap of faculty who teach in multiple disciplines including those who teach both special and general education coursework (one-third of special education faculty in this study taught both general and special education). This already-established reality in institutions could provide a natural bridge to pooling efforts across disciplines. Practicums could also be scheduled to include pairs of teacher candidates in the same placement in schools where co-teaching practices are modeled effectively.

The results of this study can be considered in the context of Mezirow's transformational learning (1997) as I sought to determine if indeed faculty are transforming their habits of mind and points of view. The fact that faculty were able to provide examples of incorporation of UDL principles and show confidence in UDL show evidence of some transformation regarding this practice. On the other hand, while there is collaboration at some level within teacher preparation programs, the structure of the programs themselves serves as a roadblock that perhaps prevents co-teaching across disciplines from happening. The high percentage of faculty who do not practice and are not confident in co-teaching suggests that opportunities to practice co-teaching is needed at the university level. Applying Mezirow's transformational learning would require faculty to change old habits of mind and points of view and transform anew in order to serve the

needs of the environment for which we are preparing our teacher candidates. I believe the results of this study show that while transformation is occurring, it is by no means complete.

Limitations

One of the limitations of this study is that responses were self-reported by faculty. In addition, while leaders from all institutions across the state were invited to participate, only those whose department heads/chairs chose to accept my invitation on their behalf participated. These factors somewhat limit the generalizability of the findings to all teacher education institutions.

While wording on the survey indicated that any question about collaboration or co-teaching was in reference to that between general and special educators on how to best serve students with disabilities, it is possible that participants did not answer this question based on that provision but instead were referring to any type of collaboration or co-teaching.

Future Research

Studies on teacher preparation practices are scattered. There has not been a widespread, deliberately planned effort to evaluate institutions and their effectiveness particularly for preparing candidates to teach students with disabilities. With current legislative reforms, this should change as more states are requiring standardized measures of teacher educator program effectiveness (Tennessee State Board of Education, 2012). It would be worthwhile to include in these evaluations processes that assess the effectiveness of teacher candidate preparation to implement collaboration, co-teaching, and UDL.

It is also important for teacher preparation institutions to take deliberate measures to include these practices within their programs and then to assess the effectiveness of these measures, both in faculty perception of effectiveness but also teacher candidate's perception of their preparation for the P-12 environment. I would like to further my own research by assessing

preservice teachers' perceptions, as well as faculty's, before and after deliberately incorporating co-teaching and collaboration across general and special education disciplines in a small institution where this is currently not a part of the program. In addition, I believe it would be valuable to assess these same practices again in five years to see if any changes have occurred within the target population. . Post hoc analyses of the data according to size of institution (i.e., small, medium, large, and very large) revealed no differences on any of the dependent variables. Nonetheless, further study of the structure of institutions, perhaps in the form of case studies, would be interesting to see if any significant differences might be found in practices of faculty depending on the size of the institution and/or department and on whether practices differ in institutions where general and special education are in the same versus different departments.

Conclusions

I would like to propose that rather than incorporate some large-scale redrawing of the blueprint of teacher education programs, instead simply building shared goals through the use of something akin to PLCs as a tool for collaboration within and across departments at the university level might go far in better preparing preservice educators for the climate of today's schools. While some at the P-12 level are dually certified, for the most part teachers are certified in specific disciplines and are being asked to collaborate to create the best possible learning environment for their students. Is it too much to ask faculty to do the same thing?

"It is imperative that all teacher educators assess their individual and collective teacher education practice, recognize where they can improve, and actively and intentionally do something about it." (Cooper et al., 2008, p. 158). This should be teacher educators' simple goal: to prepare teachers who are able to effectively educate all students in the classroom regardless of disability. In order to accomplish this, the collaborative culture within teacher educator programs

must improve with faculty modeling this first in order to produce teacher candidates who are effective collaborators (McKenzie, 2009). We must get creative in our approaches to this problem and be willing to change our point of view. Mezirow's (1997) description of transformational learning should be what all faculty wish for their professional environments, modifying and adapting to the ever-changing environment of P-12 schools for which we prepare our teacher candidates.

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Appendices

Appendix A *(Email to TACTE president)*

Dear _____,

I am a doctoral candidate at the University of Tennessee in the Theory and Practice in Teacher Education (TPTE) department with a concentration in Special Education.

The focus of my dissertation is to assess faculty knowledge and practices in preparing preservice teachers for inclusive classrooms. I plan to survey teacher education faculty in Tennessee about their confidence in, and use of, certain constructs that prepare preservice teachers for teaching in an inclusive classroom as well as coteaching and collaboration. I have attached a brief abstract of my study. In a pilot study, I surveyed UT's TPTE faculty this past spring, with some interesting results; that pilot study is the basis for my dissertation. I am in the final stages of refining the survey and obtaining IRB approval.

I am writing to you, as the president of TACTE, at the suggestion of Dr. Susan Benner and Dr. Sherry Bell. I would like to access the TACTE email list of deans/department heads of teacher education departments in order to facilitate sending out my survey statewide. I know that TACTE meets at the end of this September and believe this might be a good time to announce the upcoming survey that I hope to administer in mid to late October.

Upon reading the abstract, please let me know if you are willing to make an announcement at TACTE to anticipate an invitation to respond to the survey and to disseminate it to faculty within their institutions and, assuming IRB approval, to provide me access to the TACTE email list. I understand that you may need to discuss this with TACTE board members. If so, feel free to share the abstract as needed.

I appreciate your time and consideration.

Sincerely,

Lucinda Lang
Graduate Teaching Associate, Doctoral Candidate
Theory and Practice in Teacher Education
The University of Tennessee, Knoxville

Abstract attached to emails to TED, TACTE and deans of education departments

The purpose of the study is to determine, via an online survey, practices of teacher education faculty, teaching across the range of disciplines and populations in approved Education Preparation Provider Programs (EPPs) in Tennessee, in preparing teacher candidates to effectively teach students with disabilities across educational settings. The study is designed to determine the extent to which teacher educators practice/use, teach, and are confident about the principles of co-teaching, collaboration and UDL. Teacher educators will be contacted via email and invited to respond to an approximately 15 minute survey consisting of approximately 25 closed and open-ended items.

Many studies have focused on assessing preservice teacher knowledge, confidence, and/or ability to educate all students in collaborative, inclusive classrooms (Laarhoven et al., 2006; Erica D. McCray & Patricia Alvarez McHatton, 2011; 2005, p. 581). In general, these studies have shown that both general and special preservice educators have positive gains in attitude toward students with disabilities and toward collaboration. However, a lack of commonality in how education programs are addressing these constructs is apparent (e.g.,(McHatton & Daniel, 2008; McKenzie, 2009). With a push for all students to achieve common standards across the nation (Common Core State Standards Initiative, 2012), teacher education programs must respond. It is imperative that faculty within education schools are cognizant of the requirements facing current and future teachers and are addressing needs appropriately within coursework and field experiences.

Research that has focused on education faculty's knowledge and practices in preparing teachers across disciplines and grade levels to teach in inclusive settings have revealed inconsistent approaches from education programs (Gehrke & Cocchiarella, 2013; Harvey et al., 2010; Voltz & Raymond N. Elliott, 1997). Some education institutions responded years ago without policy-driven initiatives and developed programs that blend the disciplines of general and special education together. Brownell, Griffin, Leko and Stephens (2011) assert there is little evidence that gives credence to the validity of collaborative programs and to the justification of such programs. Pugach and Blanton (2009) introduced a framework for identifying collaborative education programs due to the varied terminology and different approaches within programs across the nation. They ask the question "are collaborative structures of teacher education transforming the preservice curriculum and how faculty conceptualize teaching the full range of students, or do they instead function to maintain traditional views of teacher education with merely some tinkering around the edges?" (2009, p. 581).

Results of this study will identify commonalities and differences between general and special education faculty's use of and confidence in principles that prepare preservice teachers for today's classrooms. The results can help determine if faculty from certain disciplines are more successfully incorporating pedagogical experiences needed for effective inclusive instruction and which might need to address these more adequately. In addition, while some universities do have a partnership between general and special education faculty, collaboration within others can be minimal at best; this study will yield data on patterns of collaboration across general and special education faculty. All teachers, whether at the K-12 or university level,

should be life-long learners with a desire to change as needed in order to better serve our students. The results of this study will help define more specifically what changes are needed in teacher education programs concerning preparation of teachers for today's inclusive, collaborative classroom.

Appendix B *(email to other department heads/deans)*

Dear (*dean or director of education department's/program's name will be inserted here*),

I am a doctoral candidate at the University of Tennessee in the Theory and Practice in Teacher Education (TPTE) department with a concentration in Special Education.

The focus of my dissertation is to assess faculty practices and confidence in preparing preservice teachers for inclusive classrooms. I plan to survey teacher education faculty in Tennessee about their confidence in, and use of, certain principles that prepare preservice teachers for teaching in an inclusive classroom. I have attached a brief abstract of my study. In a pilot study, I surveyed UT's TPTE faculty this past spring, with some interesting results; that pilot study is the basis for my dissertation.

I am writing to you to request permission to send an email to you with a survey link for distribution to the faculty in your education department or program. Upon reading the attached abstract, please let me know if you are willing to disseminate the survey link to your faculty. Once I receive your permission I will send you the link.

I appreciate your time and consideration.

Sincerely,

Lucinda Lang
Graduate Teaching Associate, Doctoral Candidate
Theory and Practice in Teacher Education
The University of Tennessee, Knoxville

Appendix C *(email to all deans/departments heads with live survey link)*

Dear (*dean or director of education department's/programs' name will be inserted here*),

In my previous email to you, I asked for your permission to send a survey link to you to disseminate to your faculty in your education department. Thank you for your willingness to allow me to do this. Below you will find the survey link that is now 'live' and ready for your faculty's wisdom and input.

Survey link:_____

Again, I appreciate your willingness to help me in my study. I hope the results will help us all better serve our preservice teachers.

Sincerely,

Lucinda Lang
Graduate Teaching Associate, Doctoral Candidate
Theory and Practice in Teacher Education
The University of Tennessee, Knoxville

Appendix D *(welcome page for participants who click on live link with survey following)*

Dear Participant,

Welcome! I am a doctoral candidate at the University of Tennessee. I am conducting a research study regarding teacher education programs. This study is in partial fulfillment of requirements for my dissertation. You have been selected as a participant because you are a faculty member at an institution that is an Education Preparation Provider (EPP). For this study, you will be asked to respond to a survey which should take approximately 15-20 minutes to complete. Your participation is voluntary and all responses will remain anonymous. Your identity will not be specifically indicated on any of the questions you are asked. There will be an optional opportunity to identify your program area. The data generated from the study will be analyzed and used to write my dissertation in addition to a possible publication.

Clicking 'I agree' constitutes your consent to participate. If you have any questions about the study or the procedures, you may contact me, Lucinda Lang, at llang3@utk.edu or (865) 974-3435. If you have questions about your rights as a participant, contact Research Compliance Services of the Office of Research at the University of Tennessee at (865) 974-3466. Thank you for your assistance in this study.

☑ I agree to participate

☐ I prefer not to participate

(if participant chooses "I agree to participate")

I appreciate you taking the time to complete this survey. Your identity will remain anonymous. Please answer honestly and reflectively on the scale provided. Many of the questions are about collaboration and co-teaching. In order to be clear on these terms, the following are definitions of both:

Collaboration: Collaboration is communication between special educators and non-special educators on how to best serve the needs of a diverse group of students, including but not limited to, those with disabilities.

Co-teaching: Co-teaching can be defined as two teachers, usually a general educator and a special educator, sharing 'instructional responsibility for a diverse group of students that usually includes several with disabilities or other special educational needs.'

Collaboration and co-teaching can take place in a variety of ways and across a range of disciplines/expertise. For the purposes of this survey, questions address collaboration and co-teaching between special education and non-special education faculty in how to best meet the needs of all students in classrooms including those with disabilities.

Survey Items and Response Sets

Rate your level of agreement/disagreement with each statement below.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
[1]I collaborate with colleagues.					
[2]I model co-teaching.					
[3]I use multiple methods of presentation when planning and implementing my own lessons.					
[4]I use multiple methods of engagement when planning and implementing my own lessons.					
[5]I use multiple methods of assessment when planning and implementing my own lessons.					
[6]I teach the principle of collaboration in my coursework.					
[7]I teach the principle of co-teaching in my coursework.					
[8]I teach my preservice education students how to use multiple methods of presentation in their lessons.					
[9]I teach my preservice education students how to use multiple methods of engagement in their lessons.					
[10]I teach my preservice education students how to use multiple methods of assessment in their lessons.					
[11] I am confident in my ability to incorporate the principle of collaboration in my coursework.					
[12] I am confident in my ability to incorporate the principle of co-teaching in my coursework.					
[13] I am confident in my ability to teach my preservice education students how to use multiple methods of presentation in their					

lessons.					
[14] I am confident in my ability to teach my preservice education students how to use multiple methods of engagement in their lessons.					
[15]I am confident in my ability to teach my preservice education students how to use multiple methods of assessment in their lessons.					

Please comment on the following:

[16] What do you believe are the greatest obstacles, if any, in incorporating the principle of collaboration within your education preparation program?

[17] What do you believe are the greatest obstacles, if any, in incorporating the principle of co-teaching within your education preparation program?

[18] What do you believe are the greatest obstacles, if any, in using multiple methods of presentation, engagement and assessment within your education preparation program?

Demographic Items

As a reminder, your identity will remain anonymous.

1. Age: _____
2. Sex: Female_____ Male_____
3. Race:
   - African American_____
   - Asian_____
   - Caucasian_____
   - Hispanic_____
   - Native Indian_____
   - Other (please specify) _____
   - -decline to specify_____

Rate your level of agreement/disagreement with each statement below.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
4. My department/program values collaboration between colleagues on how to best prepare teacher candidates to meet the needs of all students in classrooms including those with disabilities.					
5. My department/program provides or encourages formal professional development opportunities (e.g. workshops, conferences) on how to best prepare teacher candidates to meet the needs of all students.					
6. My department/program provides or encourages informal professional development opportunities (e.g., faculty meetings, sessions led by colleagues) on how to best prepare teacher candidates to meet the needs of all students.					

7. Identify how often you use the following models of co-teaching (Friend et al., 2010):	Never	1 class per semester	Several classes in a semester	1 class every week	Every class
One teach, one observe (one teacher leads large-group instruction while the other gathers data on specific students or the class group)					
One teach, one assist (one teacher leads instruction while the other circulates among the students offering individual assistance)					
Parallel teaching (each teacher has half the class, present the same material for the primary purpose of fostering instructional differentiation and increasing student participation)					
Station teaching (students rotate between three stations with the teachers at two stations while the third is an independent work station)					
Alternative teaching (one teacher works with most students while the other works with a small group for remediation, enrichment, assessment, preteaching, or another purpose)					
Team teaching (both teachers lead large-group instruction by both lecturing, illustrating two ways to solve a problem, etc.)					

8. Identify your role(s) within your education department or program (please check all that apply):

_____Dean/department head
_____Tenured or tenure seeking faculty
_____Instructor or lecturer
_____Supervisor of teacher candidates
_____Part-time/Adjunct faculty
_____Other_____

9. Number of years teaching/supervising at the university level: _____

10. Describe your area(s) of instruction in education coursework from the choices listed below. You may choose more than one.

____General Education
____Special Education

11. Describe your level(s) of instruction in education coursework from the choices listed below. You may choose more than one.

____Birth to Kindergarten
____Elementary (grades 1-5)
____Middle (grades 6-8)
____Secondary (grades 9-12)

12. Describe your area(s) of instruction in education coursework from the choices listed below. You may choose more than one.

____English/Language Arts
____Mathematics
____Science
____Social Studies
____Special Education
____Other (please specify)
_____

13. Choose what best describes the institution where you are a faculty member.

____public
____private

14. Choose what best describes the institution where you are a faculty member.

____rural
____urban
____suburban

15. Choose what best describes the institution where you are a faculty member.

_____very small 0-499
_____small 500-1999
_____medium 2000-4999
_____large 5000-9999
_____very large 10000 and above

I appreciate your diligence in completing this survey. There are only two more questions left which are optional.

16. Provide an example of how you use multiple methods of presentation, engagement, and/or assessment in your coursework.

17. Provide an example of how you incorporate co-teaching in your coursework.

Closing section

Thank you for your time and participation.

Vita

Lucinda “Cindy” Anne Ellenburg Lang was born in Nashville, Tennessee and raised in Knoxville, Tennessee. She is a graduate of Wheaton College, Wheaton, Illinois, where she earned a Bachelor of Arts degree in Psychology. She later earned a Master of Education degree in Learning Disabilities and Behavior Disorders. She taught for several years in an alternative school setting and then stayed home to raise three children. She worked part-time as a student teacher supervisor until going back to earn her Doctor of Philosophy in Education at the University of Tennessee. She taught undergraduate courses in special education and supervised interns as a graduate teaching assistant while at the university. She is now an assistant professor of education at Carson-Newman University. Her particular areas of research interest include teacher preparation, particularly in preparing both general and special education preservice teachers for inclusive, collaborative classrooms, and fostering cross-departmental collaboration at the university level to better prepare preservice teachers.