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Stakeholders' Knowledge Impacting the Academic and Social-Emotional Needs of Twice-Exceptional Students in Kentucky

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DEDICATION

This dissertation is dedicated to my husband, Brennan Ashley Sexton and our two sons, Barran and Kason for their unending love and support on my path in life, especially during the hardest times. Without the understanding and encouragement of my loved ones, some close friends, and my faith in Christ, I would never have been able to complete this journey. Thank you so very much for everything, each and every day. I love you. I would be lost without you.

~ You are my compass ~

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ABSTRACT

Decades worth of studies have documented the role of teacher training in identifying children with exceptional needs. Yet, none have investigated the differences between teacher training, teacher knowledge, and teacher roles in relation to the identification of twice-exceptional (2E) children. There is a need to understand the factors that affect teachers' knowledge and abilities to identify 2E students, specifically during the early formative years [primary and middle grades] when identification commonly occurs. Supported by the Multiple Intelligences (MI) theory, Autonomous Learner Model (ALM), and Integrated Curriculum Model (ICM), the purpose of this quantitative study was to determine if teacher education and training programs in Kentucky adequately prepare educators about twice-exceptionality. An electronic survey method was used to collect data from 478 K-8 educators across Kentucky. Questions were based on three diagnostic labels – gifted (G/T), special education (SED), and 2E – to enable comparisons between teachers': (1) understanding of eligibility definitions; (2) familiarity with state guidelines and level of experience working with each group of students; and (3) confidence levels when identifying 2E students. Data analysis utilized independent one-way ANOVAs to determine the equality of means and variance; and frequency, means, and correlation tests provided descriptive and inferential statistics. Findings indicated that teachers who received advanced training had greater knowledge and understanding of 2E students, reported higher levels of confidence, and a greater willingness to allow for more factors to be considered when identifying and referring 2E students for dual services. The study exposed a lack of knowledge about 2E in Kentucky; however, the results show that it may be possible to correctly identify and refer more 2E students if more specific training were provided. A recommendation included stakeholders, policy makers, and educational leaders pushing for teachers to receive more in-depth training in order to properly identify [2e] students. The benefits may not only be felt within schools, but also by the 2E and society-at-large.

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Chapter 1

INTRODUCTION

Head down, shoulders slumped, and hands clasped the third grade boy growls, "I hate homework! Why do I have to do it? Why does she give us so much math homework? I hate school!"

It was confusing because math was his best subject. He loved math. His academic assessments showed he is highly intelligent, in fact gifted. On the other hand, his social-behavioral development led the third grade boy to be identified as learning disabled. He argues and acts out with his parents and teachers daily. Each day was a battle to balance his dual identification as gifted and learning disabled. The third grade boy was my son. As an educator and parent, I struggled to quell arguments and fights while trying to encourage and support my child's social and educational needs. However, my lack of knowledge about what it means to be twice-exceptional was a barrier to my son's development. I needed to understand his dual identification before I could appropriately help him to learn and grow.

Putting Knowledge of Twice Exceptionality into Perspective

After 10 years as an educator, and eight years as a parent, it is disheartening to have learned the term *twice-exceptional* only within the last two years. As an educator, my experiences in the classroom solidified my passion for working with students who displayed special qualities, specifically those who were gifted and/or learning disabled. It was not until nearing completion of the gifted certification process, in a graduate school's teacher education program for a RANK I license, that I first learned the term *twice-exceptional*. Having a child of my own, who subsequently was identified as having a

learning behavioral disorder upon entering elementary school, I found myself with a lack of information about what it meant to be a twice-exceptional child and the unique challenges facing this group of students.

This study explores teacher education and training across Kentucky's major colleges and universities. The intent of the study is to determine the differences between teacher training, the lack of knowledge among stakeholders in Kentucky (i.e. educators and parents), and the possible effects on referrals to gifted and special education programs for potential twice-exceptional (2E) students. A better understanding of the differences between professional teaching roles could lead to positive and appropriate adjustments to more adequately identify students for special programs within the public educational system across Kentucky.

BACKGROUND

The educational system today is ever changing; however, the primary focus of educators is for children to reach federal and state proficiency benchmarks in disciplines such as mathematics, reading, and language arts. Various categories of research have been conducted over the years to understand the factors affecting student performance. There is a litany of factors that impact academic success. Some researchers indicate household income or socioeconomic status are the most important factors influencing a child's future achievement.

Other research however, has shown parental involvement as a key factor and the best predictor of a child's achievement (Clark and Picton, 2012). Parents set the stage for their children, from the early years as toddlers and throughout the rest of a child's life,

through the home environment, personal attitudes, expectations, and involvement in school and community activities or actions. On the other hand, teacher training programs may be the first indicator of where, how, and why special populations of students may be negatively affected, widening the gap between subgroups of students, specifically students identified as twice-exceptional in the gifted-talented program and/or special education programs.

PROBLEM STATEMENT

Educating the Twice-Exceptional

Twice-exceptional can be defined as the dual identification of giftedness and disability, including academic, social-emotional, and behavioral attributes (Assouline, Nicpon, and Whiteman, 2010). Twice exceptional (2E) students are at a greater risk of underachieving due to their complex needs, abilities, and the characteristics they bring with them into the education system (Yssel, Prater, and Smith, 2010). The goal of education is the development of all children rather than only those who have the aptitude to be high achievers. Access to an appropriate education is the obligation of educators to ensure the growth of their students. All students fall prey to being at risk of failing or falling behind in school, including those unique few labelled as twice-exceptional (2E) students. The lack of knowledge about twice-exceptionality by stakeholders (e.g. teachers, parents, and educational administrators) places these students at a distinct and heightened disadvantage.

Educating children is a difficult task for anyone. Educating special populations of students can be an even more daunting task for educators. Despite academic strides in

special education programs, students often remain socially and academically stifled due in part to the teachers' unwillingness to "refer students with disability labels to gifted programs" (Bianco and Leech, 2010, p. 319). Referring a child with a learning disability to the gifted program would result in two seemingly conflicting or separate education identification labels. Perhaps teacher reluctance is caused by a lack of understanding and concern for how to address the needs of just such a child -- the twice-exceptional child.

Understanding why and to what extent educators lack knowledge about twice-exceptionality (2E) is paramount to understanding how to improve awareness and instruction in order for the education of the twice-exceptional child to be more successful. Further research is needed regarding educator knowledge of twice-exceptionality, particularly within the domain of teacher preparation programs since this is where the process of identification and curriculum development for special populations of students (i.e. twice-exceptional students) is first introduced.

PURPOSE OF THE STUDY

The purpose of this study is to determine if teacher education and training programs in Kentucky adequately prepare educators about students who may be categorized as twice-exceptional. Specifically, the study will focus on preparation of teachers for gifted-talented and special education programs in relation to the referral and identification of 2E students.

Considerations for Examination

This quantitative study will investigate the experiences, characteristics, perceptions, and knowledge among Kentucky's K-12 teachers regarding students who are

twice exceptional. During this study, current teachers will be surveyed regarding their college/university training on special programs to learn more about how their level of knowledge affects teachers' abilities to properly refer and identify twice-exceptional students.

This quantitative study utilizes survey research to focus on stakeholders' understanding of twice-exceptionality and how their knowledge or lack thereof effects: (1) decision-making process in regards to referrals for identification; (2) services for students who are learning disabled with a potential gifted-talented label; and (3) educational experiences of teachers regarding twice-exceptionality. When the factors that contribute to the existence of an imbalance in knowledge about twice-exceptionalities is more closely analyzed, it may become clear that the primary factors related to the lack of knowledge about twice-exceptionality are linked to teacher education programs at Kentucky's colleges and universities and teacher training has an effect on the referral and identification process of twice-exceptional students

RESEARCH QUESTIONS

The central research questions for this study are:

RQ1: Are there differences between levels of understanding regarding eligibility definitions pertaining to twice-exceptional, gifted education, and special education students among teachers in Kentucky?

RQ2: Are there differences in teachers' familiarity with state guidelines pertaining to twice-exceptional students, special education students, and gifted education students in Kentucky?

RQ3: Are there differences in level of experience with students identified for special education, gifted education, and twice exceptionality among teachers in Kentucky?

RQ4: Are there differences in the level of confidence of teachers in relation to identifying twice-exceptional students compared to identifying students for special education and/or gifted education programs in Kentucky?

RQ5: Are there differences in beliefs/perceptions teachers in Kentucky hold regarding identification and referral of twice-exceptional students?

HYPOTHESES

H1: Teachers will have greater understanding of eligibility definitions for gifted and special education students than twice exceptional students.

H2: More comprehensive teacher training regarding special student populations results in improved familiarity with state guidelines for identifying and working with twice-exceptional students.

H3: More comprehensive teacher training regarding special student populations results in increased services and positive educational experiences for twice-exceptional students.

H4: Higher levels of teacher training and work experience positively affect the level of confidence among teachers regarding identification of twice-exceptional students for special programs and services.

H5: The majority of Kentucky teachers will hold negative stereotypes of twice exceptional students.

DEFINITIONS

The following definitions provide clarification of terms and acronyms that will be used in this research and are relevant to the research study.

Admissions and Release Committee (ARC): ARC is a group of individuals described in 707 KAR 1:320, Section 3 that is responsible for developing, reviewing, or revising an individual education program (IEP) for a child with a disability (707 KAR 1:002).

Attention Deficit Hyperactive Disorder (ADHD): This is a derivative of ADD or Attention Deficit Disorder with or without hyperactivity (ADHD), which can include an array of diverse and complex symptoms that typically occur simultaneously. This condition is more prevalent in young boys, specifically school age children. Students with ADHD (a) lack attention to detail, (b) are easily distracted, (c) do not listen, (d) lack follow through, (e) are unorganized, (f) lack focus, and (g) are forgetful, which are all

identified as core symptoms that includes inattention, impulsivity, distractibility, and hyperactivity (Jones, 2014).

Behavior disorder: In the context of this study, a student with a behavior disorder is diagnosed with labels such as ADHD, yet has a gifted intelligence, not necessarily just ADHD (Jones, 2014).

Dual diagnosis: This is a term that often is used interchangeably with dual disorder. It refers to the comorbidity, co-occurring illnesses, comorbid disorders, and concurrent disorders, and some teacher-educators refer to it as "double trouble" (Schmidt, Hesse, and Lykke, 2011; Jones, 2014).

Gifted: Children and youth with outstanding talent who perform or show potential for performing at remarkably high levels of accomplishment in specific areas – intellectual, creativity, artistic areas (music/dance), leadership, or specific academic fields – when compared with others of their age, experience, and environment are considered gifted (Walden, 2014). The term gifted refers to individuals who show evidence or have developed high levels of intelligence and achievement in areas such as talent, intelligence, skill, over exuberance of a natural ability (e.g., singing and music/dance). This is not always directly associated with academics (Freeman, 2001; Jones, 2014).

Giftedness: Kentucky offers gifted education services for identified students across all grade levels. Students are screened and selected as high potential learners in grades 4-12 to be formally identified for services in one or more of the following areas:

- general intellectual aptitude,
- specific academic aptitude,
- creative or divergent thinking,

- psychosocial or leadership skills, and
- visual or performing arts.

704 KAR 3:285. Programs for the gifted and talented.

NECESSITY, FUNCTION, AND CONFORMITY:

KRS 157.200(1) (n) includes within the definition of "exceptional children" a category of "exceptional students" who are identified as possessing demonstrated or potential ability to perform at an exceptionally high level in general intellectual aptitude, specific academic aptitude, and creative or divergent thinking, psychosocial or leadership skills, or in the visual or performing arts. KRS 157.224(1) commits the state to a comprehensive educational program for its exceptional school-aged children. KRS 157.230 requires all school districts to operate programs for resident exceptional children, primary - grade twelve (12). This administrative regulation establishes the requirements for programs for gifted and talented students (Kentucky Department of Education, 2015).

Individual Education Program (IEP): An IEP is a written plan of action for a student with a disability who is eligible to receive special education and related services. The IEP describes the student's needs, annual goals, specially designed instruction, and supplementary aids and services to address the needs of a student. The ARC develops the IEP, ensures IEP implementation, reviews progress toward the annual goal at least once every 12 months, and revises the IEP as appropriate. Parent input must be considered in IEP development and revision. Parent input in IEP development and revision is important, and the ARC solicits parent input and concerns through ARC participation or other methods of contact if the parent does not participate in the ARC. Kentucky educators use the Infinite Campus Student Information System for the required IEP and

other due process forms. KDE updates Data Standards annually. The Code of Federal Regulations (CFRs) and Kentucky Administrative Regulations (KARs) provide specific guidance regarding the IEP process (KDE *IEP Guidance and Documents*, 2015).

Intelligence: This is a term that is characterized by high cognitive, affective, physical, or intuitive levels in conjunction with a combination of abilities such as academic, insight, innovation, creative behavior, leadership, personal and interpersonal skill, visual and performing arts, or any combination thereof (Gardner, 1991; Jones, 2014).

Kentucky Administrative Regulations (KAR): Education programs in Kentucky are governed by statues which are administered by regulations such as 704 KAR 3:285 Programs for the gifted and talented as it relates to: KRS 157.196, 157.200(1)(n), 157.224, 157.230 Statutory Authority: KRS 156.070, 157.196(3), 157.220, 157.224 (Kentucky Revised Statutes - Chapter 503, 2015).

Kentucky Revised Statutes (KRS): KRS include enactments through the 2015 regular session. The KRS database was last updated on 11/21/2015 (Kentucky Revised Statutes - Chapter 503, 2015).

Learning disability: A specific learning disability is defined as a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that affects the learning capabilities of a student. A student with a learning disability does not process information in the same manner as someone who is not diagnosed with a learning disability (Kavale, 2013; Jones, 2014).

No Child Left Behind (NCLB): An education reform act established during the presidency of George W. Bush by Congress in 2002. It was later reauthorized by the

Elementary and Secondary Education Act (ESEA), which is the primary federal law that impacts K-12 education (Jones, 2014).

Referral(s): Referral is the variable used to measure the teacher's act of referring [2E] students with disabilities into gifted programs (Jones, 2014).

Response to Intervention (RtI): "(RtI) integrates assessment and intervention within a multi-level prevention system to maximize student achievement and to maximize social and behavioral competencies. With RtI, schools identify students at risk for poor learning outcomes, monitor student progress, provide evidence-based interventions and adjust the intensity and nature of those interventions depending on a student's responsiveness, and identify students with learning disabilities" (Kentucky Department of Education, 2012, p.33).

Specific Learning Disability (SLD): SLD is a disorder that adversely affects the ability to acquire, comprehend, or apply reading, mathematical, writing, reasoning, listening, or speaking skills to the extent that specially designed instruction is required to benefit from education. The specific learning disability (LD) may include dyslexia, dyscalculia, dysgraphia, developmental aphasia, and perceptual/motor disabilities. The term does not include deficits that are the result of other primary determinant or disabling factors such as vision, hearing, motor impairment, mental disability, emotional-behavioral disability, environmental or economic disadvantaged, cultural factors, limited English proficiency, or lack of relevant research-based instruction in the deficit area. (707 KAR 1:002 Section 1, Number 59).

Teacher training: Teacher training refers to advanced areas of training in education and learning beyond the current level of degree for teachers dealing with

exceptional students. For example, advanced areas of training may be in the form of (a) no training, (b) specialized seminar, (c) internship training, or (d) certification (Jones, 2014).

Twice exceptional (2E): The 2E student is a learner who exhibits traits for giftedness and a learning disability or behavior disorder (IDEA, 2004). Children who are considered 2E can be problematic to identify because their strengths; and weaknesses often overshadow one another, while exhibiting the stronger trait (Bianco and Leech, 2010).

SIGNIFICANCE OF THE STUDY

It is the hope of the researcher to shed some light on the role and impact of teacher preparation programs and training in Kentucky in regards to the identification and referral of twice-exceptional students, as well as the educational services these students need. Moreover, it is the goal of this study to provide insight into the factors which may help bridge the gap for special populations of [2E] students. It is essential to parents and educators, as well as the students who are being taught, and for the state of our future economy, that the researcher determine if students whose teachers are more knowledgeable about the 2E label have a significant impact on the identification of 2E students and the educational services to meet students' needs.

Possible Implications for Education

Due to the lack of research examining the area of twice-exceptionality, it is evident there is a definite need for investigation into the topic. Further research may lead to enhanced teacher education programs and greater dissemination of information to

stakeholders (i.e. parents and teachers) about twice-exceptionality. Expanding education and awareness may lead to vast improvement in academic achievement and psychosocial factors for 2E students. My observations as an educator and parent brings me to the critical hypothesis that twice-exceptional children have an insufficient support system to meet their complicated needs due in part to the deficiency among parents and educators in their knowledge and awareness of twice-exceptionality. Additionally, parents and educators as stakeholders face barriers in understanding what it means to be twice-exceptional and how to address the needs of this group of children. The barriers remain due to the inconsistency of the education system to outline a definition, identification criteria, and intervention strategies to be employed (McDonald, 2011).

In the wake of educational legislation such as *No Child Left Behind (NCLB)* and the *Individuals with Disabilities Act of 1975 (IDEA),* this unique group of learners continues to be misunderstood (Assouline and Whiteman, 2011). The many labels twice-exceptional learners are identified with carries various contradictions. The needs of these children are often not acknowledged or understood by parents and educators alike. Furthermore, the education of each child requires parents and educators to become more knowledgeable and expand their awareness of twice-exceptionality in order for learning experiences to be customized to meet the needs of individual [2E] learners. The role of educating twice-exceptional students as unique leaners is not to ignore the complex labels of giftedness combined with a learning disability, but instead to address each aspect of the twice-exceptional learner. Public education policies should encourage parents and educators to seriously contemplate the plight of 2E children…

> "…because twice-exceptional students are often faced with negative school experiences and interactions, it is not surprising that internalized feelings of failure, depression, low self-efficacy, and worthlessness can be present, along with externalizing behaviors such as aggression and hyperactivity. This negative emotionality is particularly disheartening because these students were found to have a great capacity for motivation and confidence" (Nicpon et al., 2010, p.7).

Stakeholders need to be educated about 2E labels which encompass giftedness and learning disability. Comprehending the duality of the twice-exceptional child in combination with the dissemination of information in order to reduce the lack of knowledge by stakeholders is essential to investing in the academic and social growth of these children. In turn, greater knowledge and training for stakeholders may lead the way to preventing 2E learners from being left behind and allow them to experience improved academic success.

Although there are many groups of students whose educational needs continue to go unmet within the current United States educational system, this study focuses on twice exceptional students with an emphasis on stakeholders (educators) considered to be instrumental to the achievement of the twice-exceptional student. Parents and educators of 2E children represent groups whose importance to educational collaboration exceeds the norm for parent-teacher interaction. According to numerous researchers, parents and educators have a shared lack of experiential knowledge in regards to coping with the social barriers and academic shortfalls of working with 2E children due to a lack of readily available and accessible information about twice-exceptionalities (Giovacco-Johnson, 2007; Postma, Peters, Gilman, and Kearney, 2011; Trail, 2012; and Walden,

2014). Success in a traditional school setting can be complicated when a student is identified as gifted as well as learning disabled. Twice-exceptional students struggle to meet their potential in their area(s) of giftedness due in part to other labels such as attention deficit hyperactivity disorder (ADHD), attention deficit disorder (ADD), autism spectrum disorder (ASD), and other specifically defined learning disabilities with which they are identified. Additionally, my experience as a parent and educator led to the observation that 2E children struggle with how they are perceived by and interact with others, such as their parents, educators, and peers.

CHAPTER SUMMARY

The parents and educators of twice exceptional children must be committed to listening to the hopes and concerns of these 2E students. From personal experiences as an educator and as a parent of a twice-exceptional child, there has been a gradual realization pertaining to parents and educators. The perceptions, behaviors, and interactions between stakeholders and twice-exceptional children needs to be re-evaluated. Change needs to start with parents and, more importantly, educators in order to provide a support system that will encourage 2E children to be successful and strive to meet their potential rather than constructing more obstacles due in part to a twice-exceptional label.

The various influences on school achievement, or lack of, in regards to special populations of students has been the discussion of much educational research (Giovacco-Johnson, 2007; Postma et al., 2011; Trail, 2012; and Walden, 2014). Conversely, very little is known about the achievement of twice-exceptional students. Part of the problem

in educating and raising children with dual identifications emulates from the lack of consensus on what it means to be twice-exceptional (Assouline et al., 2010; Lovett and Sparks, 2011). Within the literature on twice-exceptionality, there is a lack of understanding and agreement about how to best meet the complex needs of those considered to be twice-exceptional (Yssel et al., 2010). Separating the characteristics of the various learning disabilities from those characteristics attributed to giftedness is a challenge.

Even though there is not a substantial amount of literature or study on twice-exceptional students [i.e. their place in the educational system and the role teachers and parents play in special programs for the twice-exceptional student], there is relevant information about the role of parent involvement on student achievement as a whole. Additionally, there is a vast amount of information about special education and gifted programs, including teacher education/preparation, curriculum, strategies, and interventions utilized in the instruction of students identified for gifted or special education programs.

There is an abundant need to examine the depth of knowledge or lack thereof within the educational system and home environments of twice-exceptional students to explore ways in which the educational system can disseminate information to make parents and educators more cognizant. One can only wonder how the educational system, which encompasses K-12 schools, educational leaders on each level -- national, state, district -- and stakeholders, such as parents and teachers invested in the development of twice-exceptional students, can be expected to utilize specific interventions, curriculum, and instruction with respect to the learning needs of the at-risk

(2E) population unless parents and educators become better acquainted with the definition(s), characteristics, and needs of twice-exceptional students. It is difficult to understand how parents and educators as stakeholders can end practices and behaviors which create discouragement and disappointment for this group of exceptional students. Therefore, research into the education or preparation of teachers regarding the identification and education of the twice-exceptional child is needed in order to expand the knowledge of stakeholders. Research and education into teacher preparation programs may be the first step in scaffolding the development of the twice-exceptional child toward becoming the next great scientific mind, brilliant artist, or great world leader.

Chapter 2

LITERATURE REVIEW

INTRODUCTION

While there is not a substantial amount of literature or study on twice-exceptionality in teacher education programs, there is a great deal of information about gifted education, teaching the learning disabled, as well as the impact of parent on student achievement as a whole. This review will define teacher preparation, gifted-talented education, special education for the learning disabled, and parent involvement. Furthermore, the review of literature will examine the various definitions and characteristics of 2E students. Next, the review will discuss twice-exceptionality in relation to current legislation regarding identification for special programs. Teacher training, perceptions, and current studies on the identification of twice-exceptionality also will be discussed.

Literature Search Strategy

Research articles and studies focused on evidence that twice-exceptional (2E) students can be dually diagnosed as gifted and learning disabled, and the theory of limited awareness or knowledge about twice-exceptionalities is one cause for many school systems not providing services to this special population of students. Based on the commonalities throughout the literature, it was rational to hypothesize the causes of the problem are due to (a) insufficient teacher training, (b) lack of consensus on a definition for twice-exceptionality, and (c) lack of standards regarding 2E identification procedures and services.

Upon conducting various keyword searches for the literature review, the terms used were *twice exceptional, gifted education, learning disabilities, special education, student achievement, response to intervention, teacher perceptions,* and *teacher training*. Search results yielded articles on varied issues and global topics. Additional searches included keywords such as *legislation on special education and gifted programs*, *characteristics of twice exceptional, IDEA, No Child Left Behind,* and *what is twice-exceptional.* Further searches yielded several more articles, some of which included research studies, handbooks and training materials published for public use within schools systems, and other descriptive material such as newsletters and resources about twice-exceptionality, editorials by educators and 2E students, evidence-based blogs, and medical articles on brain functions of students with identified exceptionalities. This research includes two current dissertation studies within the past year and two theses within the last 10 years. More than 85% of the literature reviewed was published within the last 5 years covering the time period from 2009-2014. In the search for relevant literature, Eastern Kentucky University's EBSCO Host service was used in addition to a generic internet search for other relevant sources. From EBSCO Host, a variety of databases were utilized including ERIC, SAGE Publishing, ProQuest, and Google Scholars.

Out of the 117 articles and studies reviewed for this dissertation, there were 17 omitted from this review for lack of relevance to the topic of twice-exceptionality (see Figure 1.1 and Table 2.1). Of the remaining 100 sources, the literature appraised presented research methods including (a) qualitative methods, (b) quantitative methods, (c) mixed methods, and (e) longitudinal studies. The literature included research in

various settings including school systems, home environments, and clinical offices. Although not all of the literature was research-based, it was evidenced based citing specialists in the field of giftedness, learning disabilities, and twice-exceptionalities – many of which are noted below.

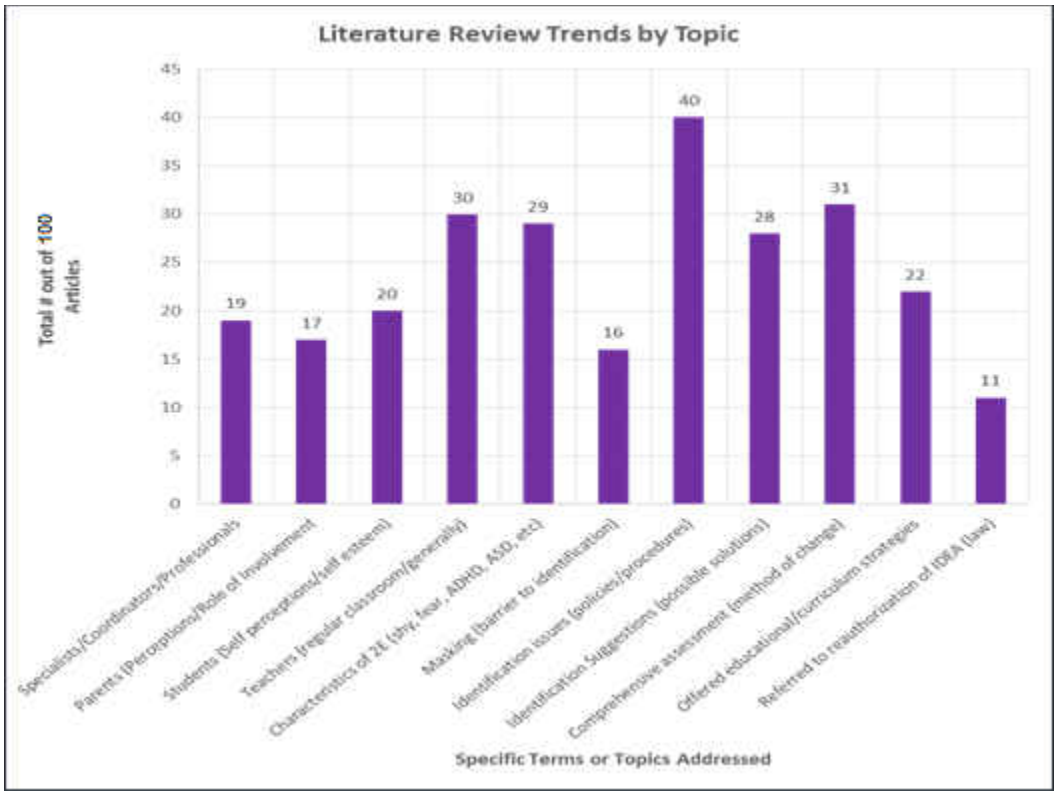

Figure 1.1 *Topic Trends in the Literature by Bar Graph*

Topic Trends in the Literature (Listing)

Table 2.1

Literature Review of Trends by Topic	# of Articles out of 100
Specialists/Coordinators/Professionals	19
Parents (Perceptions/Role of Involvement	17
Students (Self perceptions/self-esteem)	20
Teachers (regular classroom/generally)	30
Characteristics of 2E (shy, fear, ADHD, ASD, etc.)	29
Masking (barrier to identification)	16
Identification issues (policies/procedures)	40
Identification Suggestions (possible solutions)	28
Comprehensive assessment (method of change)	31
Offered educational/curriculum strategies	22
Referred to reauthorization of IDEA (law)	11
Method for Identification of 2E	**# of Articles out of 100**
Advocates IQ discrepancy-performance model	13
Advocates RTI (response-to-intervention) model	28
No distinction/mixed method of identification	15
Student Composition of 2E (by labels)	**# of Articles out of 100**
Suggested 2E consists of subgroups	17
Referred to 2E as G/T with disability label	12
Referred to 2E or giftedness as social construct	4
No distinction other than dual diagnosis	30
Research Methods Among Articles	**# of Articles out of 100**
Qualitative	15
Quantitative	12
Mixed	8
No identified method	15

Methodologies of Existing Literature

Qualitative Studies

Predictability of 2E. Assouline, Nicpon, and Whiteman (2010) conducted qualitative study approach, which included 77 students recruited over an 18-month period. Results for students with Autism Spectrum Disorder (ASD) were reported in a

separate article, but 14 students with specific learning disabilities (SLD) were individually assessed by the research team for the present study to determine the predictability of a comprehensive evaluation for twice-exceptionality (Assouline et al., 2010). Assouline et al. (2010), concluded that comprehensive assessment plays a key role in identifying a student as twice-exceptional, identifying possible psychosocial concerns, and teachers' educational recommendations and referrals for 2E students.

Challenging the Status Quo. In another study by Michael-Chadwell (2011), twelve regular classroom teachers and eleven African-American parents were extensively interviewed to determine their knowledge of giftedness and ability to appropriately identify/refer students to special programs for the gifted. The results of Michael-Chadwell (2011) suggest that educational leadership must be willing to challenge current identification and referral processes, teaching practices, and educational policies, as well as provide enhanced teacher education and training to meet the needs of underrepresented gifted children.

Comprehensive Evaluation. Case studies of children with dual diagnoses also were included in a third study (Assouline and Whiteman, 2011). Three illustrative case studies were highlighted because each described the difficulties of identifying and providing services to 2E children – each of the three cases looked at a child with a different disability (Assouline and Whiteman, 2011). From their findings, Assouline and Whiteman, (2011) concluded with 10 recommended practices. The most significant finding was the importance of comprehensive evaluations in understanding student's abilities and how critical differential diagnosis is, especially for educators when making recommendations for intervention (Assouline and Whiteman, 2011).

Quantitative Studies

Need for Professional Development. Foley-Nicpon, Assouline, and Colangelo (2013) conducted a qualitative study that included 317 educators who completed an online survey. The survey assessed the knowledge and experiences of educators with a focus on policies and special programs for the gifted and learning disabled (Foley-Nicpon, et al., 2013). The study conducted by Foley-Nicpon et al. (2013) found that educators' knowledge was almost entirely devoted to their specific content area, few teachers had any comprehension of and experience using Response to Intervention with 2E children, and specialists in the area of gifted education had much greater knowledge of and experience with twice-exceptionality than other educators. Foley-Nicpon et al. (2013) concluded by recommending enhanced and expanded professional development for educators who are not gifted education teachers in order to improve teachers' understanding of twice-exceptionality and their abilities to meet the complex needs of twice-exceptional students.

Misdiagnosis and Overexcitability. In another study, 116 students completed questionnaires during a summer camp for the intellectually gifted (Rinn and Reynolds, 2012). The study by Rinn et al. (2012) explored overexcitabilities and the symptoms of attention-deficit hyperactivity disorder (ADHD) among students between 7th and 11th grades. Rinn et al. (2012) found that there is a potential for "gifted individuals to be incorrectly labeled with a diagnosis of ADHD" due to educators' "lack of awareness of the characteristics of giftedness, specifically expressions of overexcitabilities, and a predisposition to view these behaviors as indicative of the presence of ADHD" (p. 44).

Identification Inequity. McBee (2006) studied the referral sources for gifted identification screening by race and socioeconomic status (SES) measured by eligibility for the free-reduced lunch program. The dataset encompassed all Georgia public schools during 2004 and was provided by the Georgia Department of Education. Results from McBee's (2006) study indicated that, although teacher referrals were valuable, there are inequalities in the identification and referral process. The findings showed that referrals to the gifted program were biased toward minorities and low-SES students, indicating an underrepresentation of groups of students and the need for changes to the identification and referral process (McBee, 2006).

Counselor Roles. A study by Leggett, Shea, and Leggett (2011) surveyed future school counselors about their familiarity with twice-exceptionality and their perceptions about the roles of specific stakeholders (e.g. teachers, counselors, parents) in working with 2E, gifted, and/or learning disabled students. Results indicated that participants (school counselors) believed vocational/career planning was more important than the role of advocate for meeting students' special needs (Leggett et al., 2011). The outcome of Leggett et al.'s (2011) study brings to light the realities of school counselors and educators misconceptions about their role and involvement in successfully serving 2E students.

Student Self-Perceptions. A longitudinal study over the course of 3 years examined students' perceptions about how identification and labels affect self-esteem and self-concept (Foley-Nicpon, Rickels, Assouline, and Richards, 2012). The researchers gathered data from surveys of 112 school age children to determine the differences among groups of students identified with a dual diagnosis of ADHD/giftedness and those

only identified as gifted (Foley-Nicpon et al., 2012). Despite having similar IQs, 2E students had lower overall [self-esteem and self-concept] scores than gifted students without a 2E diagnosis, which led to the recommendation that professionals working with 2E students should be aware of possible psychosocial issues for the 2E child and, if necessary, to address problems in the appropriate educational and clinical settings (Foley-Nicpon et al., 2012).

2E and ADHD. Wood's (2012) research studied the behaviors exhibited by gifted students who were referred by a parent or teacher for an ADHD diagnosis. Wood's (2012) study used the Connor's 3 Behavioral Rating Scale as the survey instrument. Parents' and teachers' responses to the survey were compared to explore differences in perceptions of gifted students' behaviors in order to conclude if an ADHD diagnosis was appropriate, which labelled the child as twice-exceptional (Wood, 2012). Results from Wood's (2012) study found that parent and teacher ratings were not connected, but not significantly different either when rating of students. The study indicated that further research is needed in multiple areas, but the need for more data relating to ADHD in gifted populations and a greater understanding of twice-exceptionality were suggested (Wood, 2012).

Mixed Methods Studies

Parent Advocacy. In a study of parent perceptions of gifted labels, parents responded initially to an online survey about parenting experiences of raising a child with a gifted label (Matthews, Ritchotte, and Jolly, 2014). Over the period of 2009-2010, as a follow up to the initial survey, Matthews et al. (2014) attempted to interview all the parents who provided contact information on the initial survey in order to expand on the

subject of how parents approach teachers and other parents when discussing the needs of their exceptional child. Matthews et al. (2014) established (a) parents of children with a gifted label chose to refrain from using the term 'gifted' because they felt it caused negativity among other parents whose children were not labelled gifted, (b) parents of [2E] gifted children gave preference to the disability label, and (c) parents who did use the term 'gifted' did so as a means of creating awareness about giftedness and diversity.

Family Dynamics. The research of Barber and Mueller (2011) targeted adolescents from four groups: (a) gifted, (b) learning disabled, (c) twice-exceptional, and (d) non-identified regular classroom students. In this study, students were given the AddHealth survey to compare intelligence, social-emotional factors, and environment (Barber and Mueller, 2011). The uniqueness of this particular study is that it began in 1994 with 12,105 students from a nationally representative sample and is following students from adolescence into adulthood (Barber and Mueller, 2011). Through their ongoing research, Barber and Mueller (2011) have found that students who are gifted and learning disabled (G/LD) report a higher rate of negative opinions of familial relationships than non-G/LD students due to overall frustrations, the "tendency of others (including parents) to view them as not living up to their potential," and "low feelings of support from home" (p.117) Barber and Mueller's (2011) findings proposed that parents need more knowledge about twice-exceptionalities and the issues facing 2E students. Additionally, the lack of parent knowledge pointed to the need for teachers and counselors to provide additional support and services for students with multiple exceptionalities due to the unique needs, risks, and potentials of this group of students (Barber and Mueller, 2011).

2E Student Perceptions. Research conducted by Willard-Holt, Weber, Morrison, and Horgan (2013) focused on the perspectives of twice-exceptional learners to examine students' views on learning strategies and services recommended for twice-exceptional students throughout the literature. Evidence showed 2E students felt they were not receiving the assistance needed to meet their academic goals (Willard-Holt et al., 2013). Furthermore, educators needed to allow for more accommodations, such as implementing a slower pace with differentiated instructional and assessment methods, when working with twice-exceptional students (Willard-Holt et al., 2013).

Referrals for Service. Bianco and Leech's (2010) study also employed a mixed methods approach. In the study, 277 educators, including specialists in gifted and special education programs, from one Florida school district were surveyed, observed, and interviewed to determine their knowledge about special identification labels and educators' likelihood of referring a child for services. Overall, the study concluded that teacher education or area of expertise considerably impacted teachers' referrals of students to gifted programs (Bianco and Leech, 2010). Results also showed that the presence of a student's existing disability label greatly reduced the willingness of teachers to make a referral to the gifted program (Bianco and Leech, 2010). Figure 1.2 summarizes the methodological approach of the studies reviewed.

Figure 1.2 *Identified Research Methods in the Literature*

History, Background, and Characteristics of Students with Special Needs

The term twice-exceptional only recently [within the last 40 years] entered the educational arena as a means to describe individuals with the dual diagnosis of gifted and learning disabled (Foley-Nicpon et al., 2013). However, research by Reis, Baum, and Burke (2014) suggested the concept of dual diagnosis was first noted in the 1940s through research conducted by Hans Asperger [for whom the later medical term Asperger's Syndrome is names – a particular disability diagnosis]. Asperger's research investigated specific behaviors, interactions, and intellectual capacities of individuals who showed signs of mental disorder, particularly in children. Although the term twice-exceptional was not developed until years after, the concept was later revisited in the 1960s through studies on gifted adults and their childhood experiences, noting considerable evidence suggesting a dual diagnosis of gifted with learning difficulties could co-exist (Reis et al., 2014). The term 2E eventually came about through the

concept of giftedness, and was conceptually introduced in the Marland Report commissioned by the federal government in 1972 (Foley-Nicpon et al., 2013; Leavitt, 2009).

During the 1970s, a great deal of emphasis was focused on equitable services for students with special needs, subsequently leading to the passage of PL94-142, titled the Education of All Handicapped Children Act of 1975 (Reis et al., 2014; Leggett, Shea, and Wilson, 2010; Foley-Nicpon et al., 2013; Nicpon, Allmon, Sieck, & Stinson, 2011). However, legislation in 1972 focused on students with disabilities and did not address other groups of students with exceptionalities (Nicpon et al., 2011; Reis et al., 2014). It was not until 2004, when the law was renamed the Individuals with Disabilities Education Improvement Act and amended to provide a free and appropriate education in the least restrictive environment for students, that it allowed for interpretations to include twice-exceptional students (IDEA 2004; Reis et al., 2014).

While current legislation mentions the concept of twice-exceptional, prior to 2004, there were no existing laws to address multiple exceptionalities (Leggett et al., 2010). Notably, even the most recent updates to federal legislation failed to provide a definition for twice-exceptional (Leggett et al., 2010). Leggett et al. (2010) and other researchers attributed the federal government's failure to provide a federal definition or an outline for identification and services as a loop-hole allowing states and school districts to navigate the field of twice-exceptional with little guidance or regulations on public education policies (Assouline et al., 2010; Foley-Nicpon et al., 2013; and Reis et al., 2014).

Kentucky Classifications. The Commonwealth of Kentucky provides little-to-no definition for twice-exceptional students. Rather, legislation states for a student to be identified for gifted-talented programs in Kentucky he/she must display exceptionality in one or more areas of: "general intellectual aptitude, specific academic aptitude, creative or divergent thinking, psychosocial or leadership skills, or in the visual or performing arts" (Kentucky Revised Statutes 157.200(1)(n)). Likewise, students identified for special education programs must meet criteria established by the Individuals with Disabilities Education Act (IDEA) regulations as outlined by the U.S. Department of Education. Students must demonstrate a delay or disability as defined in 34 CFR 300.8(c)(10), which can be summarized as a child who "does not adequately achieve or meet State-approved grade-level standards when provided with learning experiences and instruction appropriate for the child's age or State-approved grade–level standards" in one or more of the following areas: oral expression, listening comprehension, written expression, basic reading skills, reading fluency skills, reading comprehension, mathematics calculation, and/or mathematics problem solving (34 CFR 300.8(c)(10)). Students, per Kentucky Revised Statutes (KRS), also may be identified as needing special education services due to a physical, psychological, or a developmental disability such as a visual, hearing, or motor disability; mental retardation; emotional disturbance; cultural factor; environmental or economic disadvantage; or limited English proficiency. Regardless of within which category or subgroup a student may be identified, special education and gifted-talented students are to be provided services to address and/or meet their special needs or exceptional abilities/aptitudes in order to meet state and federal educational standards as measured on standardized achievement tests (KRS, 2014).

Conversely, special education has federally mandated and regulated funding unlike gifted education, which does not receive appropriated funding for services (Flemming, 2013). Previously, gifted education research and projects were funded by the Jacob Javits Gifted and Talented Student Education Act established in 1994 and reauthorized in 2001; however, the program ended in 2013 to the dismay of educators of the gifted and twice-exceptional (Milligan, Neal, and Singleton, 2012).

Funding Issues. The allocation of funding has been another issue of contention among advocates for the twice-exceptional. Some researchers and advocates of special education for students with disabilities argue against the idea of twice exceptionality stating giftedness is merely a social construct to promote elitism (Lovett, 2013). Assouline et al. (2010) noted and quickly dismissed the idea concerning twice-exceptional students, particularly underachieving gifted students with learning disabilities, as being a drain on special education resources and funding. More than 95% of the literature reviewed has been adamant about the evidence of the existence of twice-exceptionalities and that 2E students' rights to an appropriate education must be protected the same as students with only a learning disability diagnosis or gifted diagnosis.

Characteristics of the Twice-Exceptional

Because 2E students are labelled with one or more deficits/disorders in addition to giftedness they are in many ways thought to be twice as needy as their peers (Assouline and Whiteman, 2011). These students require specific interventions and treatments. Twice-exceptional students frequently deal with heightened sensitivity. They tend to be more intense, fragile, self-effacing, and may be perceived as underachievers at-risk of failure (Assouline et al., 2010).

Baldwin, Omdal and Pereles (2015) and Trail (2012) noted various characteristics of the twice-exceptional child are comparable to characteristics of gifted children and learning disabled children. Table 2.2 summarizes some of the characteristics.

Comparison of G/T, 2E, and LD traits

Table 2.2

Gifted	Twice-exceptional	Learning Disabled
Learns skills quickly and retains information easily without repetition	Struggles with basic skills and may need strategies to retain information	Requires remediation with basic skills and retention.
Keen observation skills	Strong observation skills but has memory deficits	Lack observation skills or insight.
Strong sense of self-efficacy and independence	Needs frequent support with deficits but highly independent in other areas	Requires regular support and guidance
Interested in and pursues various topics vigorously	Interested in many topics but learning barriers impede further exploration	Inconsistent interests; lacks skills to develop interests fully
Superior vocabulary and written language skills	Superior language with deficits in written language; argumentative	Marked deficits in vocabulary and written language
Highly creative	Highly creative; divergent; resourceful	Creativity depends on deficits
Excellent sense of humor	Good sense of humor but easily defensive	Lacks a perceived sense of humor
Organized; detail oriented	Big-picture minded; ignores details	Difficulty following instructions; messy
Curious and engaging; thought-provoking mind	Curious but easily frustrated	Easily frustrated; frequently lacks skills to pursue curiosities
Focused and attentive	Off-task easily in school related activities	Easily distracted
Feeling of isolation	Difficulty maintaining friendships	Difficulty developing friendships

Source(s): Adapted from *"*Beyond stereotypes: Understanding, recognizing, and working with twice-exceptional learners" by L. Baldwin, S. Omdal, and D. Pereles, 2015,

Teaching Exceptional Children, 47(4), pgs. 216-225, and from "Improving outcomes for 2E children," B.A. Trail, 2012, *Parenting for High Potential*, *1*(5), pgs. 8-10.

The research of Reis and Renzulli (2010) also focused on traits of the gifted or 2E child and concluded traits extended beyond IQ. The article contended gifted students characteristically learn at a faster pace, have greater attention control, have more efficient memory, are more perceptive, and show a propensity to task commitment with a passion to develop their gifts/talents (Reis and Renzulli, 2010). However, Reis and Renzulli (2010) also noted underachievement is a very real problem among gifted students, especially [2E] gifted students due to lack of identification and services for this population of students.

The literature describes three groups of twice-exceptional students (King, 2005; Ellis, 2010). King (2005), in addition to Ellis (2010) and Beckley (1998), proposed: (a) the first group consists of the gifted with the learning disability being unnoticed because of students' high verbal ability, but who also perform at-grade level or below in written language abilities, (b) the second group consists of students who are not identified due to *masking*; high intelligence hides or overcompensates for learning difficulties, and (c) the third group is made-up of students identified as both gifted and learning disabled, but are initially noticed due to the predominant disability referral and mandated services.

Beckley (1998) and Ellis (2010) pointed out other characteristics of underachieving G/LD students, which included heightened experiences with feeling frustration, tension, fear of failure or criticism, defensiveness, aggression, and carelessness. The experiences of underachieving G/LD students led to frequently being

off-task, classroom disruptions, avoidance of school tasks, and reduced self-concept (Beckley, 1998). Figure 1.3 illustrates the varying concepts of 2E within the literature.

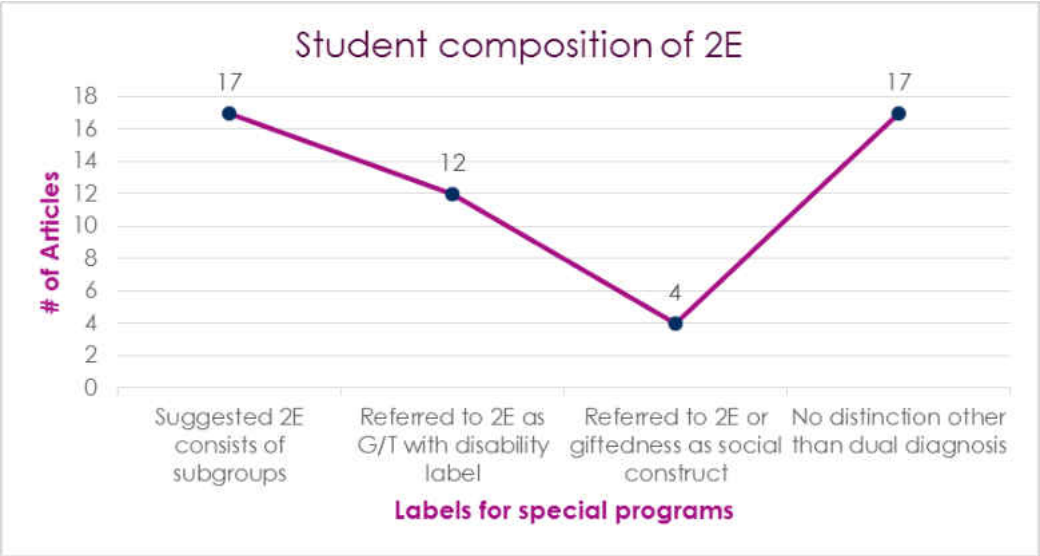

Figure 1.3 *Student Composition of 2E within the Literature*

There was a consensus within the literature, based on the characteristics of the twice-exceptional child, documenting the problem of identification. The literature provided ample evidence to show the difficulties in identifying twice-exceptional students regardless of the lack of a federal definition for 2E in public education in the United States. It is noteworthy to mention multiple articles cited Brody and Mill's (1997) argument that the twice-exceptional population may be one of the most misunderstood of all groups of students.

Stakeholders

Schools and Professional Educators

Teacher training and educators' perceptions of students categorized by labels can have an impact on the education of special populations of students. In an article by Rinn

and Reynolds (2012), teachers commented on their preconceived notions about 2E students identified as gifted with ADHD. Of the comments by educators, two were most noteworthy,

> Educator 1: "Because he seems to be very active and excited but gets bored with work. If gifted and talented he would do the work and get bored afterwards. He also would follow the rules and regulations" (Rinn and Reynolds, 2012, p. 38).
>
> Educator 2: "I would not think G/T because of the fact he is messy, appears careless or inattentive to details. I think G/T kids care more about their work" (Rinn and Reynolds, 2012, p. 38).

Stereotypes such as these were common within the literature. Repeatedly, educators' misconceptions were subsequently pointed out to be false indicating teachers and other educational professionals lacked knowledge and awareness to properly identify 2E students (Henley, Milligan, McBride, Neal, Nichols, and Singleton, 2010; McBee, 2006; Goldsmith, 2012; Reis, Baum, and Burke, 2014; Leggett et al., 2010; Foley-Nicpon et al., 2013; and Nicpon et al., 2011). The importance of collaboration among various educational professionals and clinicians was also discussed (*see pp. 19-23 for more detailed explanation of roles of stakeholders in a collaboration model*) (Trail, 2012). Much of the literature suggested school counselors' held a key role in the professional development of their peers (e.g. regular classroom teachers) and were vital to building teamwork among school administrators, gifted and learning disability specialists, regular classroom teachers, clinicians (e.g. school psychologists), parents, and

students (Trail, 2012; Leggett et al., 2011; Henley et al., 2010, Assouline and Whiteman, 2011; Goldsmith, 2012). Yet, the literature also stated education programs for educators (e.g. school counselors) did not provide specific coursework in the content area of students with exceptionalities up until the early 1990's (Leggett et al., 2011). Others, such as Foley-Nicpon et al. (2013) and Milligan, Neal, and Singleton (2012) suggested the gifted education specialist was the most knowledgeable about twice-exceptionalities; therefore, it was the responsibility of the gifted program specialist to build knowledge and awareness among his/her colleagues.

Additionally, the literature made note of a disparity among states' and school districts' policies, leaving educators to figure out how best to identify and provide services to twice-exceptional students (Henley et al., 2010; Leggett et al., 2010; Leggett et al., 2010; Foley-Nicpon et al., 2013, Assouline and Whiteman, 2011; Reis et al., 2014). In another report, only 54% of educators conveyed confidence in their school's ability to adequately provide educational services for the twice-exceptional compared to 83% in regards to special education programming and 76% in regards to gifted programming (Leggett et al., 2010). Educators cited a lack of support and training as the key reasons for the low confidence pertaining to the education of 2E students. According to Education Week, educators may not be qualified to teach special populations of students stating that teachers are often ill-equipped to identify students who may be gifted and/or have a disability since few states require pre-service general education teachers to receive adequate training in gifted or special education. Within an article by Nicpon et al. (2011), citing Nielsen (2002) and Tallent-Runnels & Sigler (1995), it was noted:

> "Differing state criteria for giftedness and learning-disability services also makes identification problematic, particularly when school districts do not consider modifying their gifted children selection process to include gifted students with specific learning disabilities (SLD)" (p. 7).

This point is particularly significant when there are an estimated 300,000 twice-exceptional students enrolled in the educational system across the United States (Nicpon et al., 2011 and Reis et al., 2014). Alternatively, Leggett et al. (2010) cited Nielsen (2002), stating schools and decision-makers are making efforts to meet the challenge, but "such standardization is impractical given the enormous variety of gift/disability combinations" (p. 6) Therefore, it is of great importance for evidence-based practice to be documented in order to determine the effectiveness of methods used in the hope of creating a "well-defined program model" for future referrals and services of the twice-exceptional child (Leggett et al., 2010, p. 6).

Parents

Margaret Ferrara, an associate professor at the University of Nevada Reno with a research interest in family involvement who writes articles on parent involvement and works with the local school district through a state-funded PIRC grant to provide workshops on multiple parent involvement topics, offered six characteristics or actions to define parent involvement and the opportunities for roles that parents can play in the home, in the school, and in the community:

- *Communication between home and school is regular, two-way, and meaningful.*
- *Responsible parenting is promoted and supported.*
- *Parents play an integral role in assisting student learning.*

- *Parents are welcomed as volunteers in the schools.*
- *Parents are full partners in the decisions that affect their children/families.*
- *Parents, school, and community collaborate in order to enhance student learning, strengthen families, and improve schools.*

These characteristics are aligned with the National Parent Teacher Association (PTA) standards, serving as a starting point for parent involvement (Ferrara, 2009). However, the characteristics are not all inclusive of what roles or actions parents can take to be involved in their child/children's educational achievement, especially in regards to the special populations of students identified with exceptional abilities/talents or disabilities of various types. Often, parents of children identified for these special programs do not fully comprehend what these programs are or why their child/children were identified in the first place. Secondly, they do not begin to grasp the differences in curriculum plans and resources available for these special populations of students.

With the previously noted and very general definitions in mind, it is crucial that parents and educators alike are fully cognizant of their role and how they impact the academic potential of students, both within the construct of a school and outside of school or behind the scenes. In a Gallup poll conducted by Phi Delta Kappa, it was found that 55% of parents had not heard of the common core let alone the term twice-exceptional (Reid, 2014). It is equally important that to fully comprehend parent involvement, stakeholders must understand the other factors that impact student achievement and how they are related to parent involvement. Multiple studies have been done to investigate other factors that have an effect on student achievement. Some of the more widely studied variables are socioeconomic status, race or ethnicity, resources

outside of school, parent education, and student motivation. Although each of these factors may play a role in impacting student achievement, many of these factors may potentially be related to or overcome by parent involvement.

Student achievement is influenced by a child's environment, beliefs, attitudes, socioeconomic status, and other factors not being assessed in this study. However, a study conducted by Leonard (2013) examined college readiness, targeting the average or underachieving student as it related to parent involvement. In his study, Leonard (2013) found that parent involvement was vital for "recruitment and enrollment, financial support, and emotional guidance" (p. 192). Over the course of his investigation he discovered that students who participated in the study had a 91% success rate in obtaining college credits while still in high school. He stated that parent engagement was crucial in stimulating student enrollment and success in college credit courses. In his study, he interviewed students to determine who played the biggest role in their achievement. At least 85% of students credited parents with their success. Leonard (2013) noted that parent involvement [in his study] consisted of monitoring grades, parent-school contact either in person or by email, monitoring the online platform, and parents' willingness to apply pressure at home, reinforcing school policy and talking to their child/children about the importance of their academic success.

In another study, Ferrara (2009) noted that changes in perceptions can improve attitudes of school personnel and parents. Schools can do more to encourage parents to participate by removing perceptions that parents are not knowledgeable or experienced enough and their input is not welcome. Economic demands on working parents to meet family financial needs can be overcome by providing alternatives for parents to meet with

teachers outside of school or participate in activities outside of school, including home activities (Ferrara, 2009). Parent involvement influences the relationship between educators, parents, and students. Regardless of factors such as socioeconomic status, race/ethnicity, and availability or resources, parents can be influential in their attitudes and involvement at home, as well as their willingness to find other opportunities for their child/children. These are some ways that parent involvement can be addressed to overcome barriers. However, there are other factors that may effect student achievement, especially in gifted programs, besides parent involvement.

It is important to comment on the fact that many studies note "white, middle and upper class families have significant advantages when interacting with special education personnel," utilizing education systems, and enacting their legal rights" (Jung, 2011, p. 21). Parent involvement in special education programs is complicated even more so for families not included in mainstream society. Many of these families, who fall outside the norms of mainstream society, experience further barriers when accessing the education system since "their interactions and relationships" with the education system are not "built on the basis of mutual communication and shared cultural and linguistic understanding," particularly during the IEP (Individualized Education Plan) process for special education students with learning needs related to limited English proficiency (Jung, 2011, p. 22).

Students within the two categories – gifted and learning disabled – often show smaller gaps in academic achievement through their primary school years, but the gap spreads drastically as they progress into middle school and even more so into secondary school. At the higher grade levels, parent involvement tends to dwindle having a

negative impact on the progress of the child (Clark and Picton, 2012). Students identified in the special education program do not appear to thrive like their counterparts in the gifted programs who make continuous gains. Other causal factors may play a role in widening the achievement gap, such as self-motivation, socioeconomic status, resources, and shear ability or talents as special education students are generally identified due to learning, behavioral, or developmental delays that create barriers to learning. These barriers can be compounded as parent involvement decreases and as reliance on education personnel increases, as well as due to age of the child and other demands on parents' time and resources. As the push for proficiency becomes more significant, so does the importance of teacher training and the role of parent involvement in education in order to eliminate or at least reduce the achievement gaps.

Theoretical Framework and Alignment

Students' potential strengths are addressed using Gardner's Theory of Multiple Intelligences (MI). Within Gardner's MI, there are eight intellectual domains: verbal/linguistic, bodily/kinesthetic, musical, logical/mathematical, spatial, interpersonal, intrapersonal, and naturalistic (Clark, 2013). The tendency of the United States educational system to overlook students' abilities in Gardner's other areas of multiple intelligences is attributed to the reliance on IQ scores and achievement test scores using an *IQ Achievement Discrepancy Model*, which is primarily verbal/linguistic and logical/mathematical, to determine giftedness or high intellectual ability (Davis and Rimm, 2004). Assouline et al. (2010) noted a problem with reliance on IQ scores, concluding that FSIQ has the tendency to exclude twice-exceptional students from the gifted programming from which 2E students may find beneficial. As previously

discussed, 2E students frequently become distracted and off-task, causing disruptions in the classroom. On the other hand, the same 2E students can be engaged and creative when given opportunities to focus on their strengths, as cited earlier. Therefore, applying Gardner's MI theory can change how twice-exceptional students are viewed by teachers, which could subsequently lead to better identification of 2E students.

The theoretical application of Gardner's Multiple Intelligence (MI) theory seeks to explain the need for an individual to develop one or more of the intelligences as an alternative learning mode for other intelligences which are not as developed (Clark, 2013). Gardner's theory proposes there are at least eight relatively independent intelligences within each individual (Chapman and Freeman, 1996). Some intelligences may be more prevalent than others; nonetheless, individuals possess many different and independent capacities for solving problems and creating products through education, noting that intelligence is not a fixed state but can be developed (Clark, 2013). Through the Multiple Intelligence theory it is suggested there is a deep concern for optimal learning by individuals, focusing on strengths and learning how to compensate for weaknesses as the "MI model can be adapted for all learners of all ages in any subject area" (Clark, 2013, p. 305).

Gardner's theory/model coincides with Bett's and Kercher's Autonomous Learner Model (ALM) developed in 1999. The Autonomous Learner Model, although developed primarily for use with gifted-talented students and regular classroom students, is applicable to the twice-exceptional student as it provides a means to meet the social-emotional [affective domain] and cognitive needs of students (Clark, 2013). To address the needs of special groups of learners, teachers require adequate training, which

Vantassel-Baska's (2006) Integrated Curriculum Model (ICM) seeks to develop through a teacher training component.

The ICM also aligns easily to core content standards and can be used widely across educational systems with plenty of opportunity for research on effectiveness (Vantassel-Baska, 2006). Additionally, the ICM works well with low-income and underserved groups of students while addressing ways to improve teacher behaviors and perceptions (Vantassel-Baska, 2006).

The combination of the three previously noted models/theories addresses the lack of stakeholders' knowledge about twice-exceptionality, which aids educators in identifying 2E students in order to sufficiently make referrals for services. By doing so, this study puts forward interventions to include educational training for teachers and modifications for referrals (Jones, 2014; Hoffman, 2014). Such interventions and modifications may help to develop the abilities of the twice-exceptional child while simultaneously accommodating for behaviors and characteristics associated with the 2E label. Based on the concepts of the MI theory, ALM, and ICM, teacher training affects identification and assessment of specials needs among special groups of learners, presumably including the twice-exceptional learner. The objective of this study is to determine whether there is a relationship between teacher education, or the lack thereof, on referrals and if more sufficient training for educators would enable teachers to better identify and refer 2E students to the appropriate and necessary gifted and special education programs (Jones, 2014; Hoffman, 2014).

Response to Intervention (RtI) Model

More than half of the literature reviewed suggested there is a push toward comprehensive assessment, encompassing affective and cognitive domains, in the

identification of 2E students (Trail, 2012). Within the same literature, there is a strong advocacy for a more holistic approach to the twice-exceptional learner and a call for widespread use of the Response to Intervention Model for all students with special needs, not only students with disabilities, for whom the model was initially developed (Pereles, Omdal, and Baldwin, 2009; Trail, 2012; Yssel, Adams, Clarke, and Jones, 2014; Rollins, Mursky, Shah-Coltrane, and Johnsen, 2009; McCallum, Bell, Coles, Miller, Hopkins, and Hilton-Prillhart, 2013; Postma, Peters, Gilman, and Kearney, 2011; Foley-Nicpon, 2013; Crepeau-Hobson and Bianco, 2010; Coleman and Hughes, 2009; King, Coleman, and Miller, 2011). The application of Gardner's MI theory, in coordination with the ALM, ICM, and RtI model would allow educators to draw on the student's areas of strengths while addressing areas of weakness to improve the referral/identification process and teach to the instructional styles of the 2E learner. Academic success of 2E students may be improved as well.

Application of the MI approach would address the strengths and weaknesses of 2E students' abilities/intelligences. Accordingly, emphasis would be on the recognition of abilities/intelligences characteristic of the G/LD child and allow for more appropriate teacher referrals (Davis and Rimm, 2004). Figure 2 illustrates the composition of the 2E child and stakeholders influence on the identification and service process.

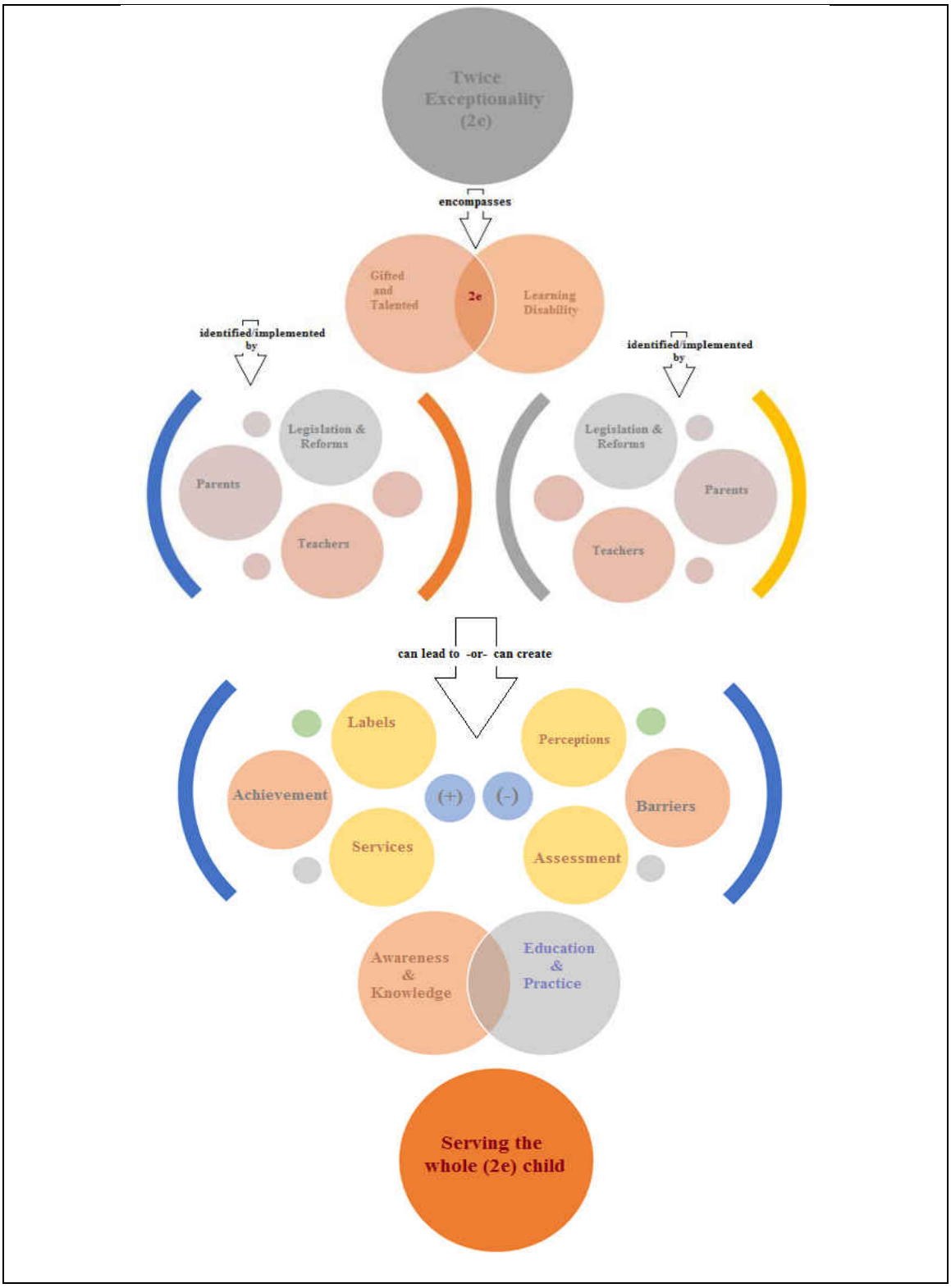

Figure 2 *Logic Model*

CHAPTER SUMMARY

Locating relevant articles to include in the review of literature was a time consuming task that required a great deal of focus. Analyzing and synthesizing the literature was an even more daunting task. The charts and graphs provided within Chapter 2 were representations of the trends found within the literature related to the topic of twice exceptionalities, commonly defined as students with one or more gifts/talents who also meet the identification criteria of one or more disabilities. These concise illustrations presented an aspect of the existing literature and the current direction research on the topic emphasizes.

There tended to be a balance between qualitative and quantitative methods among research in the field since 2010 as shown in the Figure 1.2 depicting types of research methods employed among current peer reviewed articles. Additionally, the findings from the present research indicated trends in types of identification, assessment, and instructional strategies that should be employed when identifying students for 2E services. Specifically, the majority of the literature advocated a Response-to-Intervention (RtI) model over the more common IQ intellectual ability versus performance discrepancy model (see Figure 3).

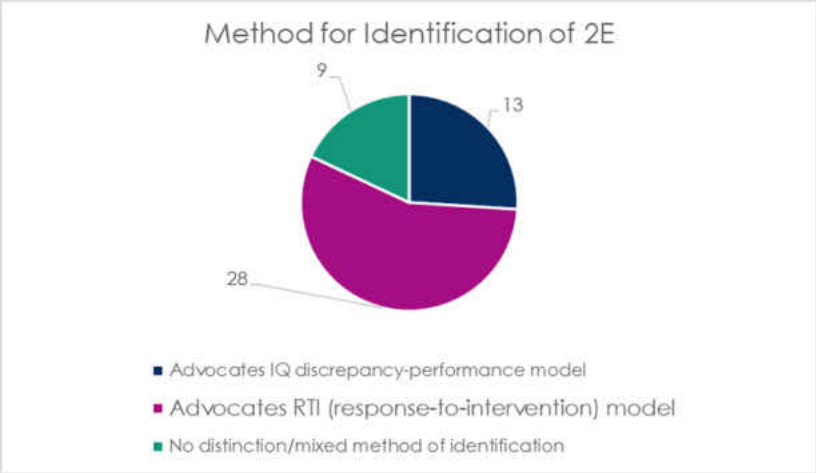

Figure 3 *Method for Identification of 2E in the Literature*

Current literature also showed that most research studies have a tendency to focus on teacher awareness/preparation and perceptions about twice exceptionalities. It was noteworthy, that although some research has studied parent and student knowledge and perceptions about 2E education, more research is needed in these areas. Other empirical data made it tragically clear that there are serious issues in the identification process. Most findings supported the concept of comprehensive assessment of the whole student as an essential step in the referral and identification process of 2E students.

Major authors in the field of twice exceptionalities included Assouline, Lovett, and Renzulli. Frequently, the research by these authors was done in direct reply and oftentimes as a rebuttal to the conclusions of one another. Many authors may be prominent in the area of 2E education, but regularly, the research of other authors was conducted in conjunction with at least one of the three authors previously noted. In addition to these well-known authors, the majority of the literature could be found among a handful of predominant journals. The journals most frequently perused were Gifted Child Quarterly, Roeper Review, Gifted Child Today, Teaching Exceptional Children,

Understanding Our Gifted, and Parenting for High Potential. Other well-known journals contained within the literature review were Research in the Schools, Psychology in the Schools, and Journal of Autism and Developmental Disorders, among others. All of the authors and journals explored were justified in that each addressed one or more aspects of giftedness, learning disability, and/or twice-exceptionality. Additionally, the majority of other relevant or related research made references to the authors and journals listed here. Therefore, understandably these would be the sources largely investigated.

With these aspects in mind, it was pertinent to note that training may be needed by parents and educators to better understand the educational system and all its facets that may have an effect on student achievement, especially among students within gifted and special education programs (Milligan et al., 2012).

The role of educators may change along with the functions and capabilities of the educational system, its specific regulations, and best practices. There are many factors associated with the referral and identification process of twice-exceptional children, which were not fully addressed. Nonetheless, knowledge and awareness among educators was a key issue in relation to meeting the needs of special populations of students -- gifted, learning disabled, and/or twice-exceptional. It was of utmost importance for educators to (a) advocate for improved teacher training during pre-service teacher education programs and not just in the separated fields of gifted or special education, (b) advocate for comprehensive evaluations of students who show traits associated with G/LD in order to capture the child's strengths and identify weaknesses to be addressed with Gardner's MI theory, (c) collaborate and build professional development teams to share information and resources related to special programs, and

(d) provide guidance to other stakeholders (e.g. parents and professionals outside the school system) about appropriate interventions and accommodations to be used with twice-exceptional children (Assouline and Whiteman, 2011).

CONCLUSIONS

Educators and parents need to be more willing to communicate and find opportunities that allow for an increase in the diffusion of information about educational programs in order to build knowledge and awareness among stakeholders. It has been shown that as students advance from the primary grade levels into middle and high school parent involvement declines, which can have a negative effect on student achievement. The education of future productive members of society depends on the attitudes, training, and willingness of parents and educators alike.

In closing, the literature confirms the need for further research in the area of twice exceptionalities. Much of the literature points to a need for research, specifically regarding the level of knowledge and perceptions about twice exceptional students in relation to parents, educational professionals (teachers, administrators, other school and clinical professionals), and students. The complex relationships among these stakeholders and their roles in the identification process/service strategies are critical points of debate. Much contention remains due to the lack of empirical research, as noted by a vast majority of the literature.

This study focuses on teacher knowledge and awareness of twice-exceptionalities impacting the referral and identification process. Further investigation may explore teacher education programs at Kentucky's colleges and universities as one crucial factor

that affects the referral and identification process of the twice-exceptional child for special programs primarily directed at the gifted and learning disabled in Kentucky's K-12 schools.

Chapter 3

RESEARCH METHODOLGY

INTRODUCTION

Teachers' and parents' lack of understanding regarding twice exceptionalities and their inconsistent attitudes and approaches were demonstrated within the literature review. The challenges facing the twice exceptional population and the educators, schools, and parents who interact with the 2E child were detailed throughout the empirical literature review.

This chapter includes a description of the components and processes of the methodology. The first section of this chapter describes the unit of analysis. The next section explains the sample selection. The third section of this chapter includes a description of the survey instrument administered to collect data. The fourth section contains a description of the data collection process. The last section details the statistical analysis procedures along with reasons why specific statistical procedures were chosen.

PURPOSE STATEMENT

The purpose of this study is to determine if teacher education and training programs in Kentucky adequately prepare educators about students who may be categorized as twice-exceptional. Specifically, the study will focus on preparation of teachers for gifted-talented and special education programs in relation to the referral and identification of 2E students.

RESEARCH QUESTIONS

RQ1: Are there differences between levels of understanding regarding eligibility definitions pertaining to twice-exceptional, gifted education, and special education students among teachers in Kentucky?

RQ2: Are there differences in teachers' familiarity with state guidelines pertaining to twice-exceptional students, special education students, and gifted education students in Kentucky?

RQ3: Are there differences in level of experience with students identified for special education, gifted education, and twice exceptionality among teachers in Kentucky?

RQ4: Are there differences in the level of confidence of teachers in relation to identifying twice-exceptional students compared to identifying students for special education and/or gifted education programs in Kentucky?

RQ5: Are there differences in beliefs/perceptions teachers in Kentucky hold regarding identification and referral of twice-exceptional students?

UNIT OF ANALYSIS

The unit for analysis in this study were teachers in Kentucky's public school systems. The target population included educators who completed a bachelor degree with teacher certification through a Kentucky post-secondary education institution, hold at least a Rank III certification, were currently under a teaching contract in the Commonwealth of Kentucky, and had at least one year of elementary, middle, and/or high school teaching experience within the Commonwealth of Kentucky. A stratified

random sample of participants was selected from all teachers in Kentucky who met the criteria.

SAMPLE

This research focused on Kentucky's school systems, specifically K-8 educational institutions. Kentucky has outlined requirements for student eligibility for gifted-talented programs separately from special education programs for students with disabilities. Within the Kentucky Department of Education guidelines, there was little mention of the twice exceptional child except to provide a generic definition. The Commonwealth of Kentucky has no K-12 schools specifically established to meet the needs of the twice exceptional child. Only one university in the state of Kentucky has an established department solely concentrated in gifted education with a particular focus on twice-exceptionalities. As such, all Kentucky schools were eligible to be included in the study. All participants were over the age of 18, as required by Eastern Kentucky University's Institutional Review Board. There were no other exclusionary factors.

The recruitment of participants consisted of experienced teacher-educators working in K-8 grades. Informed consent was imbedded within the surveys distributed. An IRB exemption was filed and approved to conduct research using human subjects among the various K-12 public schools in this study. To recruit participants, the investigator examined the teacher education program degree curriculum for each of Kentucky's colleges/universities offering a four year bachelor degree with teacher certification and master's program for educators. Kentucky colleges/universities with the highest average graduation rates from the college of education were identified. Prior to

collecting data, the researcher identified K-12 schools for this study based on proximity to the identified Kentucky colleges/universities using internet searches and maps.

The recruitment of participants within the K-12 schools was done by accessing K-12 public schools' websites. Kentucky's public schools provide contact information, specifically email links for all faculty and staff. Permission was obtained individually for participants through each participant's completion of the survey. The consent and collection of data from faculty/staff was ascertained via public use of the internet. An acknowledgement was included in the email sent to K-12 schools' faculty/staff. The acknowledgement addressed teacher training, perceptions, knowledge, and experience in the identification and referral process of 2E students relating to special educational programs for the gifted and learning disabled child, an explanation of the purpose of the research, the necessity of the research, and the availability of the researcher to respond to further questions from working educators.

Electronic surveys were presented to the selected participants. Collection of data from participants was done through stratified random sampling by dividing the populations into "strata" then choosing a simple random sample from each stratum. The various populations of types of educators were combined into an overall sample of working educators. Data collection was done using electronic surveys emailed to faculty/staff members of Kentucky's K-12 schools. Informed consents were provided to the participants within the online survey to be completed in order to proceed to the survey. The informed consent provided a concise explanation detailing why this area of research was important and how stakeholders [e.g. teachers, administrators, education professionals] could find it beneficial. Additionally, the informed consent provided

contact information such as researcher phone numbers and email addresses should further questions arise. The online questionnaire was based on a Likert scale relating to teacher training levels, knowledge of special educational programs, level of experience pertaining to the referral and identification process of 2E students, optional open-ended responses to gather teacher perceptions, and space for additional information to be provided by participants interested in follow-up contact for further discussion.

INSTRUMENTATION

The investigator administered a 36-item electronic survey or questionnaire instrument to the participants selected for this study – working teachers. Similar to two previous studies in the area of teacher training and the effects on the identification and referral process of twice exceptional students, survey questions were posed based on the three diagnostic labels – gifted, special education, and twice-exceptional. Comparable survey questions focused separately on the three diagnostic labels to enable comparisons between the groups. Each item was based on characteristics of students referred or identified under each diagnostic label according to descriptions in the literature and state/federal definitions.

Previous studies commonly used in-person or mail service surveys. An online survey method was utilized for dissemination in this study. An Internet survey was distributed using Survey Monkey technology. To the best of the researcher's knowledge, this is the first study to investigate the level of knowledge and experience of teachers in relation to the referral decisions of educators for twice-exceptional identification via an Internet survey. An online survey was chosen due to expense constraints and to allow

for more efficient data collection. In addition, an online survey provided for capturing a broader, more representative range of participants for the sample from across the Commonwealth of Kentucky.

Features within the Survey Monkey software were used to establish the survey items sequentially. Participants were instructed to read and respond to the corresponding items for each of the questions regarding their knowledge or experiences and recommended referral decisions. Lastly, demographic questions were included to gather comparable data sets among working teachers to determine differences among grade levels, specialties, and regions throughout the state of Kentucky.

The survey questions developed for this study were based on previous research noted in the literature review. To isolate the variables, specific factors such as gender, socioeconomic status, IQ, ethnicity, and race were eliminated from the survey questions to decrease social and academic bias. Survey questions were reviewed by committee members, peers, and randomly selected professional teachers and school administrators who were excluded from participating in the study in order to obtain feedback and make appropriate revisions to the instrument prior to research application.

DATA COLLECTION

Information for Kentucky's higher education institutions and K-12 public schools was available to the public via the Internet through school websites and the Kentucky Department of Education's website. An invitation to participate in the study along with a description of the study was sent via email to K-12 educators, including a link to the online survey which participants voluntarily completed.

Along with the electronic link to the survey, general instructions with the timeframe for completion of the survey and overall study, as well as a reminder that participation in the study was completely voluntary were provided. A timeline for the dissemination of the survey instrument and data collection was established by the researcher to adhere to deadlines and for monitoring purposes. Reminder emails were sent as well. The data collection occurred within a two-four week date range so that all data was essentially collected in a single period.

For all participants, the overall response was expected to be within 25-35% to be considered successful in comparison to other related studies. Once the data collection was completed the data was compiled electronically to MS Excel, and downloaded to SPSS 22.0. During this process, the data was cleaned of visible keystroke errors. Respondents with multiple missing values were omitted from the data set to increase reliability. As required by the investigator's approved IRB application, participants and/or participating schools will be provided with the results from this study upon request.

No monetary incentives for completing the survey were offered to participants to prevent coercing participation in the survey and skewing the research. To prevent multiple entries, surveys could can only be completed one time and participants were then locked out of the survey. To unlock a survey, participants were required to contact the researcher.

DATA ANALYSIS

Data was collected using Survey Monkey software, then transferred to MS Excel. From MS Excel the data was extracted to SPSS 22.0 for organization, coding, and analyses. The descriptive statistics included means, standard deviations, frequencies, and subscale reliabilities which were tabulated using APA format.

An overview of the data analyses is provided in various tables. Data was disaggregated by teachers' roles, levels of training, specialist content area, and knowledge pertaining to the three variables – gifted (G/T), special education (SED), and twice-exceptional (2E).

The data analysis included independent one-way ANOVAs to determine the equality of means and variance between the diagnostic labels – gifted, learning disabled, and 2E – and the population groups identified in the sample of working teachers. Tests were conducted in SPSS 22.0 with results tabulated in APA style. Multiple frequency tests, means tests, one-way ANOVAs, and correlation tests were conducted to compare groups and determine differences between participants' responses.

DESCRIPTION OF DEMOGRAPHICS

Of the surveys sent out for this study, 478 participants responded to the survey; thus, only data from those participants were used in the analyses. This section describes the sample statistically, which consisted of individuals who completed the surveys items regarding their education backgrounds as well as the study variables. The demographic variables included current professional role of the teacher, school level taught, school district geography, licensure/endorsements held by the participants, total number of years of teaching experience, and place teacher-educator coursework was completed (in

Kentucky or out-of-state). The study variables included (a) teacher training type, (b) teacher coursework, (c) teaching experiences, (d) teacher knowledge, and (e) teacher perceptions/beliefs. Supplementary tables present the demographic findings.

The majority of the sample were regular classroom teachers (49.4%). Table 3.1 presents the frequency of data for each group of educators. Table 3.2 presents the frequency of data for the school level taught by the participants. Table 3.3 presents the frequency of data for the school district geography reported by the respondents.

Frequency Data for Each Group of Educators

Table 3.1

Professional Role	Frequency	Percent
*Regular Classroom Teacher**	***236****	***49.4****
*Gifted Education Specialist**	***12****	***2.5****
*Special Education Teacher**	***103****	***21.5****
School Administrator	32	6.7
School Counselor/Licensed Psychologist	17	3.5
Other (please specify)	78	16.3
Total **Sample population used for analyses in the study.*	478	100.0

In terms of frequency of school level taught, Table 3.2 shows more than half (55.9%) of respondents were elementary K-5 teachers which is important because it is at this level where identification and referrals for services primarily occur in Kentucky according to Kentucky Department of Education statistics. The table shows another one-third (34.5%) of respondents were middle school/junior high teachers which is the next level at which many referrals and identification occurs for students statistically in Kentucky.

Frequency Data for the School Level Taught

Table 3.2

School Level Taught	Frequency	Percent
Prekindergarten	20	4.2
Elementary (K-5)	***267***	***55.9***
Middle School/Junior High (6-8)	***165***	***34.5***
All students (K-12)	26	5.4
Total	478	100.0

Frequency Data for the School District Geography

Table 3.3

School District Geography	Frequency	Percent
Rural	267	56.0
Suburban	127	26.6
Urban	68	14.3
Other (please specify)	15	3.1
Total	477	100.0

In terms of frequency of licensure and/or endorsement, Table 3.4 shows more than three-quarters of participants identify as a regular classroom teacher (77%) while merely one-third identified as a special education teacher (31.5%). Of the 479 survey participants, only 5.6% identified as a gifted education specialist. It is noteworthy to point out that teachers were permitted to select "all that apply" when identifying his/her licensure and/or endorsements because educators are required to complete continuing education requirements to maintain professional certification in Kentucky. Table 3.5 presents the frequency of data for the range of total number of years of teaching experience while Table 3.6 presents the mean for the years of teaching experience. Table

3.7 presents the frequency of data for the number of participants who did or did not complete their teacher-educator coursework entirely through Kentucky colleges/universities.

Frequency Data for Licensure/Endorsements Held by Participants

Table 3.4

Licensure/Endorsements	Frequency	Percent
*Classroom Teacher (Grade level/subject specific)**	***369****	***77****
*Gifted Education Specialist**	***27****	***5.6****
*Special Education Teacher**	***151****	***31.5****
School Administrator (Principal, Superintendent, etc.)	71	14.8
School Counselor/Licensed Psychologist	44	9.3
Number of Total Participants **Sample population used for analyses in the study.*	479	100

Frequency Data for the Range of Total Number of Years of Teaching Experience

Table 3.5

Years of Teaching Experience in KY	Frequency	Percent
1 to 5	107	22.9
6 to 10	88	18.8
11 to 15	92	19.7
16 to 20	181	38.8
Total	468	100.2

Mean Data for the Years of Teaching Experience

Table 3.6

Mean Number of Years of Teaching Experience in Kentucky			
Descriptive Statistics	N	Mean	Std. Deviation
How many years of classroom teaching experience do you have in Kentucky?	468	***12.12***	6.577

Frequency Data for Participants Who Completed All Coursework in Kentucky

Table 3.7

Completed All Teacher Education Coursework in KY	Frequency	Percent
Yes	379	***80.6***
No	91	19.4
Total	470	100.0

CHAPTER SUMMARY

Using Kentucky's K-12 teachers as the unit of analysis, the researcher collected data from the stratified random sampling by dividing the populations into "strata". The population/subgroups were combined into an overall sample of in-service educators who completed ALL coursework in Kentucky. Participants consisted of educators from across the Commonwealth of Kentucky based on proximity to institutions of higher education. The researcher administered a 36 item questionnaire online. Data was collected via Survey Monkey technology then downloaded to Microsoft Excel and to SPSS 22.0. The researcher calculated descriptive and inferential statistics not only to compare the current data with normative data referenced in Chapter II but also to address research questions that were presented in Chapter I. Chapter 4 subsequently presents results discovered from the study.

Chapter 4

RESULTS

INTRODUCTION

The purpose of this study was to investigate the differences between Kentucky's K-12 teachers' training and knowledge needed to make appropriate referrals/identification of twice-exceptional students. This study also sought to determine if teacher education programs in Kentucky adequately prepare educators about gifted-talented programs and special education programs in order to adequately make referrals and identify students who may be categorized as twice exceptional for dual services.

The study explored Kentucky teachers' level of knowledge, including the experiences, characteristics, and perceptions among K-12 teachers regarding students who are gifted-talented, learning disabled, and/or twice exceptional, to learn more about how teachers' level of knowledge affects educators' abilities to properly refer and identify twice-exceptional students. The study sought to better understand teachers' knowledge and teacher decision processes in reference to making referrals of 2E students for gifted and special education services. The study consisted of survey requests sent to K-12 educators across Kentucky for participation in this study, with 478 total respondents and 350 respondents who completed all the survey items.

This quantitative study utilized survey research to focus on stakeholders' understanding of twice-exceptionality and how their knowledge or lack thereof may effect: (1) decision-making processes in regards to referrals for identification; (2) services for students who are eligible for special education services with a potential gifted-talented label; and (3) educational experiences of teachers regarding twice-exceptionality.

RESEARCH QUESTIONS AND HYPOTHESES

The following research questions and their respective hypotheses were investigated:

RQ1: Are there differences between levels of understanding regarding eligibility definitions pertaining to twice-exceptional, gifted education, and special education students among teachers in Kentucky?

H1: Teachers will have greater understanding of eligibility definitions for gifted and special education students than twice exceptional students.

RQ2: Are there differences in teachers' familiarity with state guidelines pertaining to twice-exceptional students, special education students, and gifted education students in Kentucky?

H2: More comprehensive teacher training regarding special student populations results in improved familiarity with state guidelines for identifying and working with twice-exceptional students.

RQ3: Are there differences in level of experience with students identified for special education, gifted education, and twice exceptionality among teachers in Kentucky?

H3: More comprehensive teacher training regarding special student populations results in increased services and positive educational experiences for twice-exceptional students.

RQ4: Are there differences in the level of confidence of teachers in relation to identifying twice-exceptional students compared to identifying students for special education and/or gifted education programs in Kentucky?

H4: Higher levels of teacher training and work experience positively affect the level of confidence among teachers regarding identification of twice-exceptional students for special programs and services.

RQ5: Are there differences in beliefs/perceptions teachers in Kentucky hold regarding identification and referral of twice-exceptional students?

H5: The majority of Kentucky teachers will hold negative stereotypes of twice exceptional students.

Tables 4.1 – 4.5 presents the frequency data for the study variables of (a) teacher training type/primary source of knowledge pertaining to the three types of student labels, (b) teacher coursework completed in gifted, special education, and 2E content areas, (c) teacher knowledge of eligibility definitions for the three types of student labels, (d) teaching experiences within the three types of student labels, (e) teacher familiarity with guidelines/policies pertaining to each label, and (f) teacher perceptions/beliefs about the three types of student labels.

Table 4.1 shows that more than a third (34.8%) of the participants reported having no knowledge in regards to working with 2E children and only a combined total of 15.6% received some training while in a teacher education program. Combined, more than three quarters (84.4%) reported receiving no training pertaining to 2E children during their teacher education programs. Of the respondents, nearly half of the educators, regardless of professional role reported their primary source of knowledge has been gained through on-the-job teaching.

Frequency Data of Teacher Training Types

Table 4.1

Teacher Training Type	Frequency			Percent		
Please indicate where the majority of your knowledge pertaining to the content area has been obtained.	G/T	SED*	2E	G/T	SED*	2E
Bachelor degree program	45	71	29	9.6	15.1	*6.3*
Master degree program	47	110	29	10	23.5	*6.3*
Other graduate school program/certification	22	19	14	4.7	4.1	*3*
Offered professional development	51	44	20	10.9	9.4	4.3
Attending a conference	8	2	11	1.7	0.4	2.4
On-the-job teaching	241	218	197	*51.5*	*46.5*	*42.8*
No knowledge	54	5	160	11.5	1.1	***34.8***
Total	468	469	460	100	100	100

*SED is the course catalog abbreviation for nearly all special education courses in KY.

In terms of the percentage of teachers reporting the number of courses completed in the content area or topic of twice-exceptional, Table 4.2 shows at least three-quarters (75.1%) reported having zero (0) coursework pertaining to the category of 2E students and nearly two-thirds (63.4%) of the participants reported having zero (0) courses in gifted education while over 84% of teachers had at least 1 or more courses in special education. Of the teachers who had completed a special education course, nearly half had completed at least 1 or more SED courses. Table 4.3 presents the mean difference among the types of courses teachers reported completing in relation to special education, gifted education, and twice-exceptional students.

Frequency Data for Teachers Reported Coursework

Table 4.2

Teachers Reporting Coursework									
Number of Courses Completed	**Frequency**			**Valid Percent**			**Cumulative Percent**		
	G/T	SED	2E	G/T	SED	2E	G/T	SED	2E
0	302	75	352	***63.4***	15.8	***75.1***	***63.4***	15.8	***75.1***
1	107	105	62	22.5	***22.1***	13.2	85.9	***37.8***	88.3
2	26	79	23	5.5	***16.6***	4.9	91.4	***54.4***	93.2
3	10	27	3	2.1	***5.7***	0.6	93.5	***60.1***	93.8
4 or more	31	190	29	6.5	***39.9***	6.2	100	100	100
Total	476	476	469	100	100	100	--	--	--

Mean Descriptive Statistics for the Number of Courses Completed by Label

Table 4.3

Mean Number of Courses Taken on Exceptional Students			
Descriptive Statistics	N	Mean	Std. Deviation
Courses completed in a teacher education program catalogued as a special education course (SED)	476	3.32	1.552
Courses completed in a teacher education program catalogued as a gifted-talented education course (G/T).	476	1.66	1.116
Courses completed in a teacher education program that covered twice-exceptional education (2E).	469	1.50	1.063

In terms of the experience of regular classroom teachers working with 2E children, Table 4.4 shows at least 85.5% reported having little-to-no experience with twice-exceptional students and 86.4% of special education teachers reported having little-to-no experience with 2E students. Gifted education teachers, on the other hand, reported having 83.3% of moderate-to-extensive experience pertaining to the category of 2E students.

Frequency Data for Teachers' Experience with Twice-Exceptional

Table 4.4

Teachers' Experience with 2E				
Experience Level	Professional Role	Frequency	Percent	Combined Percent
No experience	**Regular Classroom Teacher**	122	***51.9***	***85.5***
	G/T Education Specialist	0	0	
	Special Education Teacher	40	***38.8***	
Little experience	Regular Classroom Teacher	79	***33.6***	***86.4***
	G/T Education Specialist	2	16.7	
	Special Education Teacher	49	***47.6***	
Moderate experience	Regular Classroom Teacher	33	14	***83.3***
	G/T Education Specialist	7	***58.3***	
	Special Education Teacher	13	12.6	
Extensive experience	Regular Classroom Teacher	1	0.4	
	G/T Education Specialist	3	***25***	
	Special Education Teacher	1	1	
Total			100	

In terms of the frequency of teachers who were able to correctly identify the state/federal definition for each of the three categories of student services, Figure 4 provides the correct definition of each label as each was listed as options on the survey in multiple choice questions pertaining to each student identification label – special education (SED), gifted-talented (G/T), and twice-exceptional (2E).

Definitions for the 3 Types of Student Labels	
Special Education (SED)	Any student having one or more disabilities and need special education as a result of a specific learning disability, serious emotional disturbance, speech impairment, mental retardation, visually impaired/blind, hard of hearing/deaf, orthopedically impairment, other health impairment, multiply handicapped.
Gifted-talented (G/T)	Exceptional students who are identified as possessing demonstrated or potential ability to perform at an exceptionally high level in general intellectual aptitude, specific academic aptitude, creative or divergent thinking, psychosocial or leadership skills, or in the visual or performing arts.
Twice Exceptional (2E)	A pupil who is identified as G/T in one or more areas of exceptionality and is also identified with a disability.

Figure 4 *Definitions for the 3 Types of Student Labels*

Table 4.5 shows that more than half (51.5%) of special education teachers were able to correctly define 2E and 83.3% of gifted education specialists were also able to correctly define 2E while little more than one-third (37.7%) of regular classroom teachers were able to correctly define twice-exceptional. Table 4.5 presents a 15.8% gap between special education teachers and regular education teachers in relation to being able to correctly define 2E. However, when correctly defining the G/T label, special education teachers (63.6%) and regular education teachers (64.1%) were nearly correct the same amount of times. Gifted education specialists, although fewer in number of respondents, were able to correctly identify all three labels more frequently than other teachers, specifically identifying the correct definition for special education and twice-exceptional

labels 83.3% of the time and identifying the definition for gifted education 91.7% of the time which is at a much higher rate than their colleagues.

Frequency Data for Teachers' Ability to Correctly Identify Definitions by Label

Table 4.5

Correctly Identified the Definition of Special Ed., G/T, & 2E						
	Frequency			Valid Percent		
Identification Label	Special Education Teachers	Regular Classroom Teachers	G/T Education Specialists	Special Education Teachers	Regular Classroom Teachers	G/T Education Specialists
Special Ed.	87	164	10	84.50	69.50	83.30
G/T	66	150	11	64.10	63.60	91.70
2E	53	89	10	***51.50***	***37.70***	***83.30***
Total	103	236	12	100	100	100

DATA ANALYSIS

Results

To address research question one, the association between the study variables of teacher knowledge of eligibility definitions for the three types of student labels and professional teaching roles were examined using the chi-square test. Before the analyses were performed, the study variables were evaluated to determine if they adhered to the test assumptions of the chi-square test. The first assumption is that the variables should be measured categorically. Another assumption of the chi-square is that the expected frequencies are 5 or greater. This assumption was also satisfied since the average expected frequency was 26.74 or greater for each of the chi-square tests presented in Tables 4.1a-4.1b pertaining to teachers' professional roles correctly defining student labels.

Research Question 1. Are there differences between levels of understanding about twice-exceptional, gifted education, and special education students among teachers in Kentucky? The hypothesis for this research question was accepted, and therefore there is a significant difference between professional role (teacher type) and teachers' levels of understanding when pertaining to correctly defining eligibility for special education and twice-exceptional.

The findings of the cross tabulation matrix results are presented in Table 4.1a which shows that teacher roles are not related to correctly defining gifted-talented as there is no significant difference ($p > 0.05$).

Chi-Square: Professional Role by Correct Definition of the G/T Student

Table 4.1a

Correct Definition of the G/T Student: Cross tabulation				
		What describes your main professional responsibilities?		
Correct Definition of the G/T		Regular Classroom Teacher	Special Education Teacher	Total
No	Count	86	37	123
	%	36.40%	35.90%	36.30%
Yes	Count	150	66	216
	%	63.60%	64.10%	63.70%
Total	Count	236	103	339
	%	100.00%	100.00%	100.00%
Chi-Square Tests				
		Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square		.008[a]	1	**0.927**

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 37.37.

Table 4.1b shows that special education teachers were able to correctly define special education eligibility at a rate of 84.5% and regular education teachers were able to correctly define SED as a rate of 69.5%. The chi-square test shows there is a significant different between teacher roles and correctly defining eligibility for identification of the special education student; χ^2 8.366, $p < 0.05$. The findings of the cross tabulation matrix results are presented in Table 4.1b.

Chi-Square: Professional Role by Correct Definition of the Special Education Student

Table 4.1b

Correct Definition of the Special Education Student: Cross tabulation				
Correct Definition of the Special Education Student		What describes your main professional responsibilities?		Total
		Regular Classroom Teacher	Special Education Teacher	
No	Count	72	16	88
	%	30.50%	15.50%	26.00%
Yes	Count	164	87	251
	%	69.50%	84.50%	74.00%
Total	Count	236	103	339
	%	100.00%	100.00%	100.00%
Chi-Square Tests				
		Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square		8.366[a]	1	**0.004**
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 26.74.				

Table 4.1c shows that special education teachers were only able to correctly define twice-exceptional eligibility at a rate of 51.5% and regular education teachers were able to correctly define 2E at a rate of 37.7%. The chi-square test determined if the association between the variables was significant. The results are presented in Table 4.1c.

The chi-square test results show a chi-square value of 5.65, $p < 0.05$, which indicated that there was a statistically significant difference between teacher roles and correctly defining eligibility for identification of the twice-exceptional student; χ^2 5.65, $p < 0.05$. Although special education teachers were more likely to correctly define 2E, the results from Tables 4.1b and 4.1c specifically suggests that 2E children may be under-identified, significantly in terms of reliance on regular classroom teachers and special education teachers to refer students for identification and services.

Chi-Square: Professional Role by Correct Definition of the 2E Student

Table 4.1c

Correct Definition of the 2E Student: Cross tabulation				
Correct Definition of the 2E Student		What describes your main professional responsibilities?		Total
		Regular Classroom Teacher	Special Education Teacher	
No	Count	147	50	197
	%	62.30%	48.50%	58.10%
Yes	Count	89	53	142
	%	37.70%	51.50%	41.90%
Total	Count	236	103	339
	%	100.00%	100.00%	100.00%
Chi-Square Tests				
		Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square		5.565[a]	1	**0.018**
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 43.14.				

To address research question two, the association between the study variables of professional teaching roles and teachers' familiarity with federal/state guidelines pertaining to twice-exceptionality, special education, and gifted education in Kentucky

were examined using separate One-way ANOVAs. This section also included descriptive statistics for each category of student identification label presented for each ANOVA.

Research Question 2. Are there differences in teachers' familiarity with state guidelines pertaining to twice-exceptional students, special education students, and gifted education students in Kentucky? The hypothesis for this research question was accepted, and therefore there is a significant difference between professional role (teacher type) and teachers' familiarity with federal/state guidelines pertaining to 2E students; therefore more comprehensive teacher training regarding special student populations results in improved familiarity with state guidelines for identifying and working with twice-exceptional students.

Table 4.2a presents the descriptive statistical means for teachers' reported familiarity with state/federal guidelines for special education categorically by teacher roles. Table 4.2b shows the output of the ANOVA analysis and whether there was a statistically significant difference between group means pertaining to Kentucky teachers' familiarity with state/federal guidelines on special education by teacher role. The significance level is 0.000 (p = .000), which is below 0.05; therefore, there is a statistically significant difference in the mean. Post hoc test results showed there is a significant difference in familiarity with state/federal guidelines on special education between the special education teachers and regular classroom teachers (p = 0.000) , as well as between gifted education specialists and special education teachers (p = 0.000). However, there were no differences in familiarity with state/federal guidelines on special education between gifted education specialists and regular classroom teachers (p = 0.837).

Descriptive Statistics: Familiarity with State/Federal Guidelines on Special Education by Teacher Role

Table 4.2a

Descriptive Statistics				
Federal/state guidelines for special education services.				
	N	Mean	Std. Deviation	Std. Error
Regular Classroom Teacher	235	2.94	.680	.044
G/T Education Specialist	12	2.83	.389	.112
Special Education Teacher	103	3.81	.444	.044
Total	350	3.19	.729	.039

One-way ANOVA: Familiarity with State/Federal Guidelines on Special Education by Teacher Role

Table 4.2b

ANOVA					
Federal/state guidelines for special education services.					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	55.729	2	27.864	74.476	.000
Within Groups	129.826	347	.374		
Total	185.554	349			

Table 4.2c presents the descriptive statistical means for teachers' reported familiarity with state/federal guidelines for gifted education categorically by teacher roles. Table 4.2d shows the output of the ANOVA analysis and whether there was a statistically significant difference between group means pertaining to Kentucky teachers' familiarity with state/federal guidelines on gifted education by teacher role. The significance level is 0.000 (p = .000), which is below 0.05; therefore, there is a statistically significant difference in the means. Post hoc test results showed there is a significant difference in familiarity with state/federal guidelines on gifted education

between all three groups - special education teachers, regular classroom teachers, and gifted education specialists ($p = 0.000$).

Descriptive Statistics: Familiarity with State/Federal Guidelines on G/T Education Services by Teacher Role

Table 4.2c

Descriptive Statistics				
Your state's guidelines for G/T education services.				
	N	Mean	Std. Deviation	Std. Error
Regular Classroom Teacher	233	2.63	.744	.049
G/T Education Specialist	12	3.75	.452	.131
Special Education Teacher	103	2.13	.750	.074
Total	348	2.52	.805	.043

One-way ANOVA: Familiarity with State/Federal Guidelines on G/T Education Services by Teacher Role

Table 4.2d

ANOVA					
Your state's guidelines for G/T education services.					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	36.772	2	18.386	33.718	.000
Within Groups	188.124	345	.545		
Total	224.897	347			

Table 4.2E presents the descriptive statistical means for teachers' reported familiarity with state/federal guidelines for twice-exceptionality categorically by teacher roles. Table 4.2f shows the output of the one-way ANOVA analysis and whether there was a statistically significant difference between group means pertaining to Kentucky teachers' familiarity with state/federal guidelines on twice-exceptionality by teacher role.

The significance level is 0.000 (p = .000), which is below 0.05; therefore, there is a statistically significant difference in the means. Post hoc test results showed there is a significant difference in familiarity with state/federal guidelines on twice-exceptionality between regular classroom teachers and gifted education specialists (p = 0.000), as well as between gifted education specialists and special education teachers (p = 0.000). However, there were no significant differences in familiarity with state/federal guidelines on 2E between regular classroom teachers and special education teachers (p = 0.128).

Descriptive Statistics: Familiarity with State Guidelines on 2E by Teacher Role

Table 4.2e

Descriptive Statistics				
Twice-exceptionality in your state.				
	N	Mean	Std. Deviation	Std. Error
Regular Classroom Teacher	233	1.64	0.803	0.053
Gifted Specialist	12	3	0.853	0.246
Special Ed. Teacher	103	1.83	0.81	0.08
Total	348	1.74	0.843	0.045

One-way ANOVA: Familiarity with State Guidelines on 2E by Teacher Role

Table 4.2f

ANOVA					
Twice-exceptionality in your state.					
	Sum of Squares	Df	Mean Square	F	**Sig.**
Between Groups	22.153	2	11.077	17.016	**0.000**
Within Groups	224.571	345	0.651		
Total	246.724	347			

Table 4.2g presents a cross tabulation matrix of teachers' reported familiarity with state/federal guidelines for each of the three identification areas – gifted, special education, and twice-exceptional. Table 4.2g shows that special education teachers

reported having little-to-no familiarity with state/federal guidelines for 2E at a combined rate of 80.6% (N = 103) and regular classroom teachers reported similar results as a rate of 83.7% (N = 233). Gifted education specialists reported having some-to-specific familiarity with state/federal guidelines for 2E at rate of 83.3%, although the number of respondents was much lower (N = 12).

Cross-Tabulation of Teachers Familiarity with Federal/State Guidelines

Table 4.2g

Teachers Familiarity with Federal/State Guidelines for Identified Student Groups								
Level of Familiarity by Teacher Roles		**by Student Labels**			**by Student Labels**			
		Frequency			Valid Percent			
		G/T	SED	2E	G/T	SED	2E	
No familiarity	Gifted Ed Specialists	-	-	1	-	-	8.3	
	Special Ed Teachers	21	-	41	20.4	-	**39.8**	
	Regular Classroom Teachers	13	4	127	5.6	1.7	**54.5**	**80.6**
Little familiarity	Gifted Ed Specialists	-	2	1	-	16.7	8.3	
	Special Ed Teachers	50	2	42	48.5	1.9	**40.8**	**83.7**
	Regular Classroom Teachers	85	50	68	36.5	21.3	**29.2**	
Some familiarity	Gifted Ed Specialists	3	10	7	25	83.3	**58.3**	
	Special Ed Teachers	30	16	17	29.1	15.5	16.5	
	Regular Classroom Teachers	111	138	33	47.6	58.7	14.2	**83.3**
Specific familiarity	Gifted Ed Specialists	9	-	3	75	-	**25**	
	Special Ed Teachers	2	85	3	1.9	82.5	2.9	
	Regular Classroom Teachers	24	43	5	10.3	18.3	2.1	
Total		12	103	233	100	100	100	-

Table 4.2h presents a cross tabulation matrix focused only on teachers' reported familiarity level with state/federal guidelines for twice-exceptionality.

Cross Tabulation Matrix: Teachers' Familiarity with Federal/State Guidelines for Twice-Exceptional Education

Table 4.2h

Teachers' Familiarity with Federal/State Guidelines for 2E						
Level of Familiarity	**by Teacher Roles**			**by Teacher Roles**		
	Frequency			Valid Percent		
	G/T	SED	Regular	G/T	SED	Regular
No familiarity	1	41	127	8.3	**39.8**	**54.5**
Little familiarity	1	42	68	8.3	**40.8**	**29.2**
Some familiarity	7	17	33	**58.3**	16.5	14.2
Specific familiarity	3	3	5	**25.0**	2.9	2.1
Total	12	103	233	100	100	100

Based on the descriptive statistical means presented in Tables 4.2a, 4.2b, and 4.2c, gifted education specialists and special education teachers were more likely to have familiarity with state/federal guidelines pertaining to their respective areas, as expected. Gifted education specialists were also more likely to report familiarity with state/federal guidelines pertaining to twice-exceptionality. The findings from Tables 4.2a – 4.2h suggests that 2E children may be under-identified, significantly in terms of reliance on regular classroom teachers and special education teachers to refer students for identification and services based on their familiarity with state/federal guidelines for 2E children.

To address research question three, the association between the study variables of professional teaching roles and Kentucky teachers' experience with students identified for special education, gifted education, and twice-exceptional students were examined

using separate One-way ANOVAs. This section also includes descriptive statistics for each category of student identification label presented for each ANOVA.

Research Question 3. Are there differences in level of experience with students identified for special education, gifted education, and twice exceptionality among teachers in Kentucky? The hypothesis for this research question was accepted, and therefore there is a significant difference between professional role and Kentucky teachers' experience with students identified for special education, gifted education, and twice-exceptionality. As a result, more comprehensive teacher training regarding special student populations may lead to increased services and positive educational experiences for twice-exceptional students.

Table 4.3a presents the descriptive statistical means for teachers' reported level of experience with gifted education students categorically by teacher roles. Table 4.3b shows the output of the ANOVA analysis and whether there was a statistically significant difference between group means pertaining to Kentucky teachers' level of experience with gifted education students by teacher role. The significance level is 0.000 (p = .000), which is below 0.05; therefore, there is a statistically significant difference in the means. Post hoc test results showed there is a significant difference in Kentucky teachers' level of experience with gifted students between all three teacher groups.

Descriptive Statistics: Experience with Gifted-Talented Students by Teacher Type

Table 4.3a

Descriptive Statistics				
Experience with students identified for/receiving services in the gifted program				
	N	Mean	Std. Deviation	Std. Error
Regular Classroom Teacher	234	2.82	.830	.054
Gifted Education Specialist	12	3.75	.452	.131
Special Education Teacher	103	1.89	.791	.078
Total	349	2.58	.936	.050

One-way ANOVA: Experience with Gifted-Talented Students by Teacher Type

Table 4.3b

ANOVA					
Experience with students identified for/receiving services in the gifted program					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	78.546	2	39.273	59.984	.000
Within Groups	226.537	346	.655		
Total	305.083	348			

Table 4.3c presents the descriptive statistical means for teachers' reported level of experience with special education students categorically by teacher roles. Table 4.3d shows the output of the ANOVA analysis and whether there was a statistically significant difference between group means pertaining to Kentucky teachers' level of experience with special education students by teacher role. The significance level is 0.000 (p = .000), which is below 0.05; therefore, there is a statistically significant difference in the means. Post hoc test results showed there is a significant difference in teachers' level of experience with special education students between special education teachers and regular classroom teachers (p = 0.000). However, there were no significant differences in level of experience with special education students between gifted education specialists and special education teachers (p = 0.091), as well as no significant differences between

gifted education specialists and regular classroom teachers (p = .843) in terms of level of experience with special education students.

Descriptive Statistics: Experience with Special Ed Students by Teacher Type

Table 4.3c

Descriptive Statistics				
Experience with students identified for/receiving services in special education (with an IEP or 504 plan)				
	N	Mean	Std. Deviation	Std. Error
Regular Classroom Teacher	235	3.29	.786	.051
Gifted Education Specialist	12	3.17	.718	.207
Special Education Teacher	103	3.66	.735	.072
Total	350	3.40	.786	.042

One-way ANOVA: Experience with Special Education Students by Teacher Type

Table 4.3d

ANOVA					
Students identified for/receiving services in special ed (with an IEP or 504 plan)					
	Sum of Squares	df	Mean Square	F	**Sig.**
Between Groups	10.283	2	5.142	8.681	**.000**
Within Groups	205.514	347	.592		
Total	215.797	349			

Table 4.3e presents the descriptive statistical means for teachers' reported level of experience with twice-exceptional students categorically by teacher roles. Table 4.3f shows the output of the one-way ANOVA analysis and whether there was a statistically significant difference between group means pertaining to Kentucky teachers' level of experience with 2E students by teacher role. The significance level is 0.000 (F = 23.138, df = 2, p = .000), which is below 0.05; therefore, there is a statistically significant difference in the means. Post hoc test results showed there is a significant difference in

teachers' level of experience with 2E students between regular classroom teachers and gifted education specialists (p = 0.000), as well as between special education teachers and gifted education specialists (p = 0.000). However, there was no significant difference in level of experience with twice-exceptional students between regular classroom teachers and special education teachers (p = 0.298).

Descriptive Statistics: Experience with 2E Students by Teacher Type

Table 4.3e

Descriptive Statistics

Experience with twice-exceptional students

	N	Mean	Std. Deviation	Std. Error
Regular Classroom Teacher	235	1.63	.736	.048
Gifted Education Specialist	12	3.08	.669	.193
Special Education Teacher	103	1.76	.707	.070
Total	350	1.72	.770	.041

One-way ANOVA: Experience with 2E Students by Teacher Type

Table 4.3f

ANOVA

Experience with twice-exceptional students

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	24.357	2	12.178	23.138	.000
Within Groups	182.640	347	.526		
Total	206.997	349			

Table 4.3g presents a cross tabulation matrix of teachers' reported level of experience with each of the three identified student types – gifted, special education, and 2E. Table 4.3g shows that regular classroom teachers reported having little-to-no experience with twice-exceptional students at a combined rate of 85.5% (N = 235) and special education teachers reported similar, but slightly higher results at a combined rate

of 86.4% (*N* = 103). Gifted education specialists reported having moderate-to-extensive experience with 2E students at a combined rate of 83.3%, although the number of respondents was much lower (*N* = 12).

Cross-Tabulation of Teachers' Experience Levels Working with Labelled Students

Table 4.3g

Experience Level by Professional Role		Teachers' Experience by Student Labels						
		Frequency			Valid Percent			
		G/T	SED	2E	G/T	SED	2E	
No experience	Regular Teacher	18	9	122	7.7	3.8	**51.9**	
	Gifted Specialist	0	0	0	0	0	0	**85.5**
	Special Ed. Teacher	35	3	40	34	2.9	**38.8**	
Little experience	Regular Teacher	51	21	79	21.8	8.9	**33.6**	
	Gifted Specialist	0	2	2	0	16.7	16.7	**86.4**
	Special Ed. Teacher	47	7	49	45.6	6.8	**47.6**	
Moderate experience	Regular Teacher	120	97	33	51.3	41.3	14	
	Gifted Specialist	3	6	7	25	50	**58.3**	
	Special Ed. Teacher	18	12	13	17.5	11.7	12.6	
Extensive experience	Regular Teacher	45	108	1	19.2	46	0.4	**83.3**
	Gifted Specialist	9	4	3	75	33.3	**25**	
	Special Ed. Teacher	3	81	1	2.9	78.6	1	
	Total				100	100	100	

To address research question four, the association between the study variables of professional teaching roles and Kentucky teachers' level of confidence when identifying/referring students for special education, gifted education, and twice-exceptionality were examined using Pearson Correlation tests [Note: Regular classroom, special education and gifted specialist are included in the correlations] and separate One-way ANOVAs. This section also includes descriptive statistics for each category of student identification label presented for each ANOVA.

Research Question 4. Are there differences in the level of confidence of teachers in relation to identifying/referring twice-exceptional students compared to identifying/referring students for special education and/or gifted education programs in Kentucky? The hypothesis for this research question was accepted, and therefore there is a significant difference between professional roles and teachers' level of confidence with identifying/referring twice-exceptional students. Therefore, higher levels of teacher training and work experience may positively affect the level of confidence among teachers when identifying and/or referring twice-exceptional students for specialized programs and services.

The correlation tests were considered small at 0.3, moderate at 0.4 – 0.6, and strong at 0.6 or above. Table 4.4a presents the correlation of teachers' confidence with referring students to gifted-talented programs based on their knowledge of gifted education which consists of teachers' current understanding and experience with gifted education. Table 4.4a shows a small correlation between confidence and coursework (0.313), moderate correlation between referral confidence and familiarity with state gifted guidelines (0.570), and a strong correlation (0.601) between referral confidence and experience with gifted students.

Correlations with Confidence with Referring Gifted-Talented Students

Table 4.4a

Correlations		
How confident are you that your current understanding of and experience with gifted-talented students enables you to make appropriate evaluation referrals of gifted-talented students?		
How many courses have you completed in a teacher education program catalogued as a gifted-talented education course?	Pearson Correlation	0.313
	Sig. (2-tailed)	0.000
	N	345
How familiar are your state's guidelines for gifted education services.	Pearson Correlation	0.570
	Sig. (2-tailed)	0.000
	N	346
How much experience do you have with students identified for/receiving services in the gifted program	Pearson Correlation	0.601
	Sig. (2-tailed)	0.000
	N	347

Table 4.4b presents the correlation of teachers' confidence with referring students to special education programs based on their knowledge of special education which consists of teachers' current understanding and experience with special education. Table 4.4b shows a moderate correlation between confidence and coursework (0.425), moderate correlation between referral confidence and familiarity with state special education guidelines (0.507), and a small correlation (0.337) between referral confidence and experience with special education students. Table 4.4c presents the correlation of teachers' confidence with referring students to 2E programs based on their knowledge of twice-exceptionality which consists of teachers' current understanding and experience with twice-exceptionality. Table 4.4c shows a small correlation between confidence and coursework (0.329), strong correlation between referral confidence and familiarity with state guidelines pertaining to twice-exceptionality (0.615), and a strong correlation (0.684) between referral confidence and experience with 2E students.

Correlations with Confidence Referring Special Education Students

Table 4.4b

Correlations		
How confident are you that your current understanding of and experience with special education students enables you to make appropriate evaluation referrals of special education students?		
How many courses have you completed in a teacher education program catalogued as a special education course?	Pearson Correlation	0.425
	Sig. (2-tailed)	0.000
	N	345
Federal/state guidelines for special education services.	Pearson Correlation	0.507
	Sig. (2-tailed)	0.000
	N	347
Students identified for/receiving services in special education (with an IEP or 504 plan)	Pearson Correlation	0.337
	Sig. (2-tailed)	0.000
	N	347

Correlations with Confidence Referring 2E Students

Table 4.4c

Correlations		
How confident are you that your current understanding of and experience with twice-exceptional students enables you to make appropriate evaluation referrals of twice-exceptional students.		
How many courses have you completed in a teacher education program that covered twice-exceptional education?	Pearson Correlation	**0.329**
	Sig. (2-tailed)	0.000
	N	340
Twice-exceptionality in your state.	Pearson Correlation	**0.615**
	Sig. (2-tailed)	0.000
	N	346
Twice-exceptional students	Pearson Correlation	**0.684**
	Sig. (2-tailed)	0.000
	N	348

The correlations in Tables 4.4a – 4.4c were considered significant across all the correlation tests at 0.000 ($p < 0.05$). Table 4.4d presents the descriptive statistical means for teachers' confidence based on their current understanding of and experience with each of the three student groups.

Mean Confidence Levels Referring Different Types of Exceptional Students

Table 4.4d

Descriptive Statistics			
	N	Mean	Std. Deviation
How confident are you that your current understanding of and experience with ***gifted-talented students*** enables you to make appropriate evaluation referrals of gifted-talented students?	348	2.7	0.931
How confident are you that your current understanding of and experience with ***special education students*** enables you to make appropriate evaluation referrals of special education students?	347	3.41	0.768
How confident are you that your current understanding of and experience with ***twice-exceptional students*** enables you to make appropriate evaluation referrals of twice-exceptional students.	348	1.91	0.941

Table 4.4e presents the descriptive statistical means for teachers' reported level of confidence when identifying/referring students for gifted education services categorically by teacher roles.

Descriptive Statistics: Confidence Level Referring G/T Students by Teacher Type

Table 4.4e

Descriptive Statistics				
How confident are you that your current understanding of and experience with gifted-talented students enables you to make appropriate evaluation referrals of gifted-talented students?				
	N	**Mean**	**Std. Deviation**	**Std. Error**
Reg. Classroom Teacher	235	2.87	0.838	0.055
Gifted Specialist	12	3.75	0.622	0.179
Special Ed. Teacher	101	2.19	0.924	0.092
Total	348	2.7	0.931	0.05

Table 4.4f shows the output of the one-way ANOVA analysis and whether there was a statistically significant difference between group means pertaining to Kentucky teachers' level of confidence when identifying/referring students for gifted education services categorically by teacher roles. The significance level is 0.000 (p = .000), which is below 0.05; therefore, there is a statistically significant difference in the means. Post hoc test results showed there is a significant difference in confidence levels among all three teacher groups when identifying/referring students for gifted services. The significant difference between special education teachers and regular classroom teachers is 0.000 ($p < 0.05$), as well as between special education teachers and gifted education teachers ($p = 0.000$). The level of significant difference between regular classroom teachers and gifted education teachers is 0.002 ($p < 0.05$).

One-way ANOVA Confidence Level Referring G/T Students by Teacher Type

Table 4.4f

ANOVA

How confident are you that your current understanding of and experience with gifted-talented students enables you to make appropriate evaluation referrals of gifted-talented students?

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	46.668	2	23.334	31.713	**0.000**
Within Groups	253.846	345	0.736		
Total	300.514	347			

Table 4.4g presents the descriptive statistical means for teachers' reported level of confidence when identifying/referring students for special education services categorically by teacher roles.

Descriptive Statistics: Confidence Level Referring Special Ed Students by Teacher Type

Table 4.4g

Descriptive Statistics				
How confident are you that your current understanding of and experience with special education students enables you to make appropriate evaluation referrals of special education students?				
	N	**Mean**	**Std. Deviation**	**Std. Error**
Regular Classroom Teacher	233	3.22	0.794	0.052
Gifted Education Specialist	12	2.83	0.937	0.271
Special Education Teacher	102	3.9	0.33	0.033
Total	347	3.41	0.768	0.041

Table 4.4h shows the output of the one-way ANOVA analysis and whether there was a statistically significant difference between group means pertaining to Kentucky teachers' level of confidence when identifying/referring students for special education services categorically by teacher roles. The significance level is 0.000 ($p < 0.05$); therefore, there is a statistically significant difference in the means. Post hoc test results showed there is a significant difference in confidence levels between regular classroom teachers and special education teachers when identifying/referring students for special education services. The significant difference between special education teachers and regular classroom teachers is 0.000 ($p < 0.05$), as well as between special education teachers and gifted education teachers ($p = 0.000$). There was no significant difference between regular classroom teachers and gifted education teachers ($p = 0.143$).

One-way ANOVA Confidence Level Referring Special Ed Students by Teacher Type

Table 4.4h

ANOVA					
How confident are you that your current understanding of and experience with special education students enables you to make appropriate evaluation referrals of special education students?					
	Sum of Squares	**Df**	**Mean Square**	**F**	**Sig.**
Between Groups	36.809	2	18.405	37.893	0
Within Groups	167.081	344	0.486		
Total	203.89	346			

Table 4.4i presents the descriptive statistical means for teachers' reported level of confidence when identifying/referring twice-exceptional students for both special education services and gifted education services categorically by teacher roles.

Descriptive Statistics: Confidence Level Referring 2E Students by Teacher Type

Table 4.4i

Descriptive Statistics				
How confident are you that your current understanding of and experience with twice-exceptional students enables you to make appropriate evaluation referrals of twice-exceptional students.				
	N	**Mean**	**Std. Deviation**	**Std. Error**
Regular Classroom Teacher	233	1.85	0.909	0.06
Gifted Education Specialist	12	2.92	0.9	0.26
Special Education Teacher	103	1.94	0.958	0.094
Total	348	1.91	0.941	0.05

Table 4.4j shows the output of the one-way ANOVA analysis and whether there was a statistically significant difference between group means for teachers' reported level of confidence when identifying/referring twice-exceptional students for dual services – special education services and gifted education services – categorically by teacher roles. The significance level is 0.001 ($p < 0.05$); therefore, there is a statistically significant

difference in the means. Post hoc test results showed there is a significant difference in confidence levels between regular classroom teachers and gifted education specialists when identifying/referring students for dual services. Although there is no significant difference between special education teachers and regular classroom teachers ($p = 0.677$) which is greater than 0.05; there is a significant difference special education teachers and gifted education teachers at 0.002 ($p < 0.05$). There was also a significant difference (p = 0.000) between regular classroom teachers and gifted education teachers ($p < 0.005$).

One-way ANOVA Confidence Level Referring 2E Students by Teacher Type

Table 4.4j

ANOVA					
How confident are you that your current understanding of and experience with twice-exceptional students enables you to make appropriate evaluation referrals of twice-exceptional students.					
	Sum of Squares	**Df**	**Mean Square**	**F**	**Sig.**
Between Groups	13.104	2	6.552	7.681	0.001
Within Groups	294.31	345	0.853		
Total	307.414	347			

Based on the correlations, descriptive statistics, and one-way ANOVAs presented in Tables 4.4a – 4.4j, these findings also suggest that 2E children may be under-identified, significantly in terms of reliance on regular classroom teachers and special education teachers to refer students for identification and services based on Kentucky teachers' confidence levels pertaining to their current understanding of and experience with twice-exceptional students.

To address research question five, the association between the study variables of professional teaching roles and Kentucky teachers' beliefs and/or perceptions regarding

identification/referral of twice-exceptional students were examined using a cross tabulation matrix of factors educators think should be considered in order to make appropriate referrals for evaluation of students for specialized services.

Research Question 5. Are there differences in beliefs/perceptions teachers in Kentucky hold regarding identification and referral of twice-exceptional students? The hypothesis for this research question was null, and therefore there no significant difference was found between professional roles and beliefs/perceptions teachers in Kentucky hold regarding identification and referral of twice-exceptional students compared to gifted and special education students. Therefore, the majority of Kentucky teachers most likely do not hold negative stereotypes of twice exceptional students when compared to gifted or special education students.

Table 4.5a presents the frequency data for the study variables of professional teaching roles and Kentucky teachers' beliefs/perceptions regarding identification/referral for each of the three student groups – gifted, special education, and twice-exceptional by count (N). Table 4.5b presents the same frequency data by percentage (%). Table 4.5c presents condensed frequency data for the study variables of professional teaching roles and Kentucky teachers' beliefs/perceptions regarding identification/referral for only twice-exceptional students by count (N). Table 4.5d presents condensed frequency data for the study variables of professional teaching roles and Kentucky teachers' beliefs/perceptions regarding identification/referral for twice-exceptional students by percentage (%).

The results from Tables 4.5a – 4.5d show that all three teacher groups rated *Performance on ability/IQ test(s)* as the most important factor when making referrals for

identification of 2E students. Gifted education specialists, however, had a more varied response when rating other factors for twice-exceptionality (2E) than their counterparts. Each of the three teacher groups rated *Performance on ability/IQ test(s)*, *Performance on achievement test(s)*, and *Performance on Classwork* as the three most important factors for identification and referral to gifted education services with varying response rates. Additionally, all three teacher groups rated *Behavioral difficulties in the classroom* and *Performance on ability/IQ test(s)* as two of the three most important factors for identification and referral to special education programs and services; however, gifted education specialists again had a more varied response when rating other factors for special education services (SED).

Cross Tabulation of Factors Teachers Believe are Necessary to Make Appropriate Referrals by Count (N)

Table 4.5a

Referral Factors Based on Teachers' Beliefs by Count (N)									
Factors to be considered for special education	Reg. Classroom Teacher			Gifted Specialist			Special Ed. Teacher		
	G/T	SED	2E	G/T	SED	2E	G/T	SED	2E
Behavioral difficulties in the classroom	122	207	143	7	10	9	54	92	64
Outside/non-academic activities	131	52	79	10	4	9	67	24	42
Parental concerns	128	173	124	7	9	9	61	82	60
Peer Relationships	133	165	118	6	7	7	60	73	48
Performance On Classroom Tests	190	189	152	9	8	8	78	82	69
Performance on Classwork	206	217	159	11	8	10	85	93	76
Performance on ability/IQ test(s)	211	201	176	12	8	11	98	97	88
Performance on achievement test(s)	205	185	159	12	7	9	93	86	76
TOTAL	236	236	236	12	12	12	103	103	103

Cross Tabulation of Factors Teachers Believe are Necessary to Make Appropriate Referrals by Percentage

Table 4.5b

Referral Factors Based on Teachers' Beliefs by Percentage (%)									
Factors to be considered for special education	Reg. Classroom Teacher			Gifted Specialist			Special Ed. Teacher		
	G/T	SED	2E	G/T	SED	2E	G/T	SED	2E
Behavioral difficulties in the classroom	51.7	**87.7**	60.6	58.3	**83.3**	**75.0**	52.4	**89.3**	62.1
Outside/non-academic activities	55.5	22.0	33.5	83.3	33.3	**75.0**	65.0	23.3	40.8
Parental concerns	54.2	73.3	52.5	58.3	**75.0**	**75.0**	59.2	79.8	58.3
Peer Relationships	56.4	69.9	50	50	58.3	58.3	58.3	70.9	46.6
Performance On Classroom Tests	80.5	80.1	64.4	75.0	**66.7**	66.7	75.7	79.6	67
Performance on Classwork	**87.3**	**91.9**	**67.4**	**91.7**	**66.7**	**83.3**	**82.5**	**90.3**	**73.8**
Performance on ability/IQ test(s)	**89.4**	**85.2**	**74.6**	**100**	**66.7**	**91.7**	**95.1**	**94.2**	**85.4**
Performance on achievement test(s)	**86.9**	78.4	**67.4**	**100**	58.3	**75.0**	**90.3**	83.5	**73.8**
TOTAL (%)	100	100	100	100	100	100	100	100	100

Cross Tabulation of Factors Teachers Believe are Necessary to Make Appropriate Referrals for Twice-Exceptional by Count (N)

Table 4.5c

Referral Factors for 2E Based on Teachers' Beliefs by Count (N)

Factors to be considered for evaluation of twice-exceptional	Regular Teachers	Gifted Specialist	Special Ed Teacher
Behavioral difficulties in the classroom	143	9	64
Outside/non-academic activities	79	9	42
Parental concerns	124	9	60
Peer Relationships	118	7	48
Performance On Classroom Tests	152	8	69
Performance on Classwork	159	10	76
Performance on ability/IQ test(s)	176	11	88
Performance on achievement test(s)	159	9	76
TOTAL	236	12	103

Cross Tabulation of Factors Teachers Believe are Necessary to Make Appropriate Referrals for Twice-Exceptional by Percentage

Table 4.5d

Referral Factors for 2E Based on Teachers' Beliefs by Percentage (%)

Factors to be considered for evaluation of twice-exceptional	Regular Teachers	Gifted Specialist	Special Ed Teacher
Behavioral difficulties in the classroom	60.6%	**75.0%**	62.1%
Outside/non-academic activities	33.5%	**75.0%**	40.8%
Parental concerns	52.5%	**75.0%**	58.3%
Peer Relationships	50.0%	58.3%	46.6%
Performance On Class Tests	**64.4%**	66.7%	**67.0%**
Performance on Classwork	**67.4%**	**83.3%**	**73.8%**
Performance on ability/IQ test(s)	**74.6%**	**91.7%**	**85.4%**
Performance on achievement test(s)	**67.4%**	**75%**	**73.8%**
TOTAL	100%	100%	100%

Other Findings

This section investigates other factors such as areas teachers observed to be difficult for twice-exceptional students. In addition, what percentages of students in the teachers' schools do teachers estimate are eligible for special education, gifted education, or dual services (2E) are investigated.

Table 4.5e presents the frequency of data for the study variables of professional roles and areas teachers observed to be difficult for twice-exceptional students by count (N) and Table 4.5f presents the frequency of data by percentage. Results show that more than two-thirds (61%) of regular classroom teachers, one-quarter (25%) of gifted education specialists, and over half (58.3%) of special education teachers have not observed 2E students. The findings suggest that if the three teacher groups have not observed 2E students it may be because of under-identification of or due to a lack of knowledge of 2E students limiting teachers' abilities to serve the twice-exceptional population appropriately.

Cross Tabulation of Areas Teachers Observed to be Difficult for Labelled Students by Count (N)

Table 4.5e

Cross Tabulation: Areas of difficulty observed by teachers for 2E students	Regular Classroom Teacher	Gifted Education Specialist	Special Education Teacher
	2E	2E	2E
Academic difficulties	41	7	22
Social difficulties with adults	62	8	34
School personnel coordination with parents	22	5	7
Coordination of care among professionals working with students	29	6	15
Behavioral difficulties in the classroom	42	6	21
Outside/non-academic activities	11	1	4
Parental concerns	29	6	15
Peer relationships	40	6	23
Performance on class tests	38	5	16
Performance on classwork	41	7	17
Performance on ability/IQ test(s)	28	3	14
Performance on achievement test(s)	31	5	15
Social difficulties with adults	41	7	28
I have not observed the labelled students	144	3	60
TOTAL	236	12	103

Cross Tabulation of Areas Teachers Observed to be Difficult for Labelled Students by Percentage

Table 4.5f

Cross Tabulation: Areas of difficulty observed by teachers for student labels.	Reg. Classroom Teacher	Gifted Specialist	Special Ed. Teacher
	2E	2E	2E
Academic difficulties	17.40%	58.30%	21.40%
Social difficulties with peers	26.30%	66.70%	34.00%
School personnel coordination with parents	9.30%	41.70%	6.80%
Coordination of care among professionals working with students	12.30%	50.00%	14.60%
Behavioral difficulties in class	17.80%	50.00%	20.40%
Outside/non-academic activities	4.70%	8.30%	3.90%
Parental concerns	12.30%	50.00%	14.60%
Peer relationships	16.90%	50.00%	22.30%
Performance on class tests	16.10%	41.70%	15.50%
Performance on classwork	17.40%	58.30%	16.50%
Performance on ability/IQ test(s)	11.90%	25.00%	13.60%
Performance on achievement test(s)	13.10%	41.70%	14.60%
Social difficulties with adults	17.40%	58.30%	27.20%
I have not observed the labelled students	**61.00%**	**25.00%**	**58.30%**
TOTAL	100%	100%	100.00%

Teachers also responded to the survey item: what percentage of students in your school do you estimate are twice-exceptional? Teachers' responses varied; however, more than one-third (34.3%) of regular education teachers and more than a tenth (19.8%) of special education teachers responded with *Unknown/No idea* regarding the number of students they believe may be twice-exceptional. More than one-half (56%) of regular education teachers, more than three-quarters (83%) of gifted education specialists, and nearly three-

quarters (74.3%) of special education teachers believe an estimated 1% – 5% or less of students may be 2E.

CHAPTER SUMMARY

Five research questions were investigated to determine the differences between Kentucky's K-12 teachers' training, level of knowledge and current understanding of, experience with, and confidence levels when making referrals for gifted education, special education, and dual services for the twice-exceptional student. Chi-square tests were performed to address research question one and the corresponding hypothesis in which it was found that there was a significant difference between teacher type and teachers' ability to correctly define student labels, specifically pertaining to 2E. Gifted education specialists were much more likely to correctly define 2E than regular education teachers and special education teachers; therefore, depending on teacher roles, specific teachers' had a greater understanding of eligibility definitions for gifted and special education students than twice exceptional students. Using one-way ANOVAs for research questions two, it was found that there is a significant difference between professional role (teacher type) and Kentucky teachers' familiarity with federal/state guidelines pertaining to 2E students, with a specific difference between regular classroom teachers and gifted education specialists, as well as between gifted education specialists and special education teachers. Therefore more comprehensive teacher training in Kentucky regarding special student populations may result in improved familiarity with state guidelines for identifying and working with twice-exceptional students. For research question three, by comparing the one-way ANOVAs for the different groups, it was found that there is a significant difference between professional role and Kentucky

teachers' experience. Specifically, there was a significant difference in Kentucky teachers' level of experience with 2E students between regular classroom teachers and gifted education specialists, as well as between special education teachers and gifted education specialists. As a result it can be concluded that more comprehensive teacher training in Kentucky, in order to gain experience regarding special student populations, may lead to increased services and positive educational experiences for twice-exceptional students. Concerning research question four, through correlation tests it was found that there is a significant difference between professional roles and Kentucky teachers' level of confidence when identifying/referring students for dual services to meet the need of 2E children. Therefore, higher levels of teacher training and work experience may positively affect the level of confidence among Kentucky's teachers when identifying and/or referring twice-exceptional students for specialized programs and services. In regards research question five, the hypothesis was not accepted and was considered null. Therefore, further investigation and discussion regarding differences between teachers' roles and factors teachers believe are necessary to make appropriate referrals for twice-exceptional identification is needed.

Other findings using cross tabulation frequency data showed that more than a majority of regular classroom teachers and special education teachers have not observed 2E students. In addition many regular education teachers and special education teachers were not able to even estimate how many students in their respective schools may potentially be 2E because they have no idea what it means to be twice-exceptional. On the other hand, more than half (71.1%) of all the teachers surveyed estimated 1% – 5% or less of students may be 2E.

The overall findings from this study suggest that if the teacher groups have not observed or had experience with 2E students it may be because of under-identification of or due to a lack of knowledge regarding 2E students which may limit teachers' abilities to serve the twice-exceptional population appropriately. The implications of these results will be discussed in the subsequent chapter, which also presents the conclusions and recommendations of the study.

Chapter 5

DISCUSSION, LIMITATIONS, AND RECOMMENDATIONS

INTRODUCTION

Chapter 5 summarizes the entire dissertation and provides a discussion of its findings in relation to the literature regarding stakeholders' knowledge impacting the needs of twice-exceptional students in Kentucky. The results of the study should help Kentucky's colleges and universities to modify teacher education programs and training. By including coursework on twice-exceptionality to teacher education programs, teacher training may become more comprehensive and provide greater dissemination of information to stakeholders (i.e. parents and teachers) about twice-exceptionality. Expanding education and awareness may lead to vast improvement in academic achievement and psychosocial factors for 2E students. In addition, the results of the study may help educators to create an awareness of the need for dual identification and services in order to better serve 2E students.

Current literature has fallen short in determining if teacher education programs and training opportunities have an impact on teachers' knowledge and abilities to make identification and referrals of potential 2E students for dual services to gifted and special education programs, thus impacting the academic and social-emotional needs of 2E students, particularly in Kentucky. This chapter provides an overview of the study, purpose, and significance of the topic. Additionally, the research questions and results are discussed in relation to existing research. Furthermore, discussion of potential limitations and recommendations for the future are delivered.

Twice-exceptional or 2E refers to the dual identification of giftedness and disability, including academic, social-emotional, and behavioral attributes (Assouline, Nicpon, and Whiteman, 2010). Twice exceptional (2E) students are at a greater risk of underachieving due to their complex needs, abilities, and the characteristics they bring with them into the education system (Yssel, Prater, and Smith, 2010). Despite academic strides in special education programs, students often remain socially and academically stifled due in part to the teachers' unwillingness to "refer students with disability labels to gifted programs" (Bianco and Leech, 2010, p. 319). Referring a child with a learning disability to the gifted program would result in two seemingly conflicting or separate education identification labels.

Very little is known about of twice-exceptional students; therefore, the lack of knowledge about twice-exceptionality by stakeholders (e.g. teachers, parents, and educational administrators) places these students at a distinct and heightened disadvantage. Part of the problem in educating and raising children with dual identifications emulates from the lack of consensus on what it means to be twice-exceptional (Assouline et al., 2010; Lovett and Sparks, 2011). Within the literature on twice-exceptionality, there is a lack of understanding and agreement about how to best meet the complex needs of those considered to be twice-exceptional (Yssel et al., 2010). Thus, teacher training programs may be an indicator of where, how, and why special populations of students may be negatively affected, widening the gap between subgroups of students, specifically students identified as twice-exceptional in the gifted-talented program and/or special education programs.

OVERVIEW OF THE STUDY

The study investigated the differences between teachers' knowledge and understanding of 2E, their familiarity with state/federal guidelines pertaining to twice-exceptionality, teachers' experiences with and level of confidence in making referrals for 2E, as well as what teachers' believe are factors necessary to make appropriate referrals. Therefore, it is imperative for teachers to have the necessary training to adequately recognize and refer 2E children for dual services in their respective schools.

Current research and literature lacks inquiry into the identification and referral of 2E students by teachers, specifically in Kentucky. The study sought to address this gap by exploring Kentucky educators' preparedness. The research questions in this study determined the level of educators' knowledge and awareness by asking the following: (a) Are there differences between levels of understanding regarding eligibility definitions pertaining to twice-exceptional, gifted education, and special education students among teachers in Kentucky? (b) Are there differences in teachers' familiarity with state guidelines pertaining to twice-exceptional students, special education students, and gifted education students in Kentucky? (c) Are there differences in level of experience with students identified for special education, gifted education, and twice exceptionality among teachers in Kentucky? (d) Are there differences in the level of confidence of teachers in relation to identifying twice-exceptional students compared to identifying students for special education and/or gifted education programs in Kentucky? (e) Are there differences in beliefs/perceptions teachers in Kentucky hold regarding identification and referral of twice-exceptional students?

The null hypotheses for the research questions were that: (a) There would be no significant difference in teachers' understanding of eligibility definitions for gifted and special education students than 2E students; (b) More comprehensive teacher training regarding special student populations would have no significant difference in familiarity with state guidelines for identifying and working with twice-exceptional students; (c) More comprehensive teacher training regarding special student populations would have no significant difference regarding teachers' experiences with twice-exceptional students; (d) Teacher training and work experience would have no significant difference in terms of the level of confidence among teachers regarding identification of twice-exceptional students for special programs and services; and (e) Teachers' beliefs would have no significant difference regarding how teachers' perceive twice exceptional students. The alternative hypotheses for each research question stating otherwise.

The results were expected to highlight the role of teacher training regarding teachers' level of knowledge of 2E together with providing teachers with an awareness of 2E in order to better address student needs. This qualitative study followed the theoretical framework made up of a combination of three models/theories to address stakeholders' knowledge about twice-exceptionality, which aids educators in identifying 2E students in order to sufficiently make referrals for services. One of the theories is Gardner's Multiple Intelligences, a theory that there are eight intellectual domains: verbal/linguistic, bodily/kinesthetic, musical, logical/mathematical, spatial, interpersonal, intrapersonal, and naturalistic (Clark, 2013). Bett's and Kercher's Autonomous Learner Model (ALM), primarily for use with gifted-talented students and regular classroom students, is also applicable to the twice-exceptional student as it provides a means to meet

the social-emotional [affective domain] and cognitive needs of students (Clark, 2013). Vantassel-Baska's (2006) Integrated Curriculum Model (ICM) which seeks to address the needs of special groups of learners by requiring teachers to have adequate training through more specialized teacher training components. The tendency of the United States educational system to overlook students' abilities is attributed to the reliance on IQ scores and achievement test scores using an IQ Achievement Discrepancy Model, which is primarily verbal/linguistic and logical/mathematical, to determine giftedness or high intellectual ability (Davis and Rimm, 2004). Assouline et al. (2010) noted a problem with reliance on IQ scores, concluding that FSIQ has the tendency to exclude twice-exceptional students from the gifted programming from which 2E students may find beneficial. In particular, the combination of the three previously noted models/theories puts forward interventions to include educational training for teachers and potential modifications to address the lack of stakeholders' knowledge about twice-exceptionality (Jones, 2014; Hoffman, 2014).

INTERPRETATION OF THE FINDINGS

The results revealed that teachers who had more extensive training in education and learning beyond basic content areas/grade level (ex. 4th grade social studies), such as professional training dealing with exceptional students (ex. Gifted endorsement), were more likely to have greater knowledge and understanding, as well as experiences with and confidence when referring potential 2E children for dual services. Meanwhile, teachers who had little-to-no education and/or training, such as regular classroom teachers and special education teachers, were less likely to have knowledge of or

experience with 2E children; therefore, confidence levels were significantly lower when faced with the prospect of adequately identifying and referring 2E children. Regarding factors teachers' believed to be necessary in order to appropriately identify/refer 2E students, there was no significant difference; however, gifted education specialists were found to have a more varied response which suggests gifted specialists allow for more comprehensive assessments when making decisions about the identification/referral of 2E students. The study also found that Kentucky teachers, as a whole, tend to rely on performance on IQ/ability tests and achievements tests to be primary factors when identifying 2E children for services, thus reinforcing this tendency as noted in the current literature.

LIMITATIONS OF THE STUDY

Numerous limitations related the participants, survey tool, and threats to validity are discussed here. Three limitations pertaining to the teachers surveyed include: (1) excluding current teacher education students and non-working educators who may have had differing responses in respect to participants in the study which only looked at those teachers currently working in Kentucky schools, (2) focusing primarily on teachers who completed all their teacher education coursework in Kentucky, not factoring in teachers who may have worked outside of Kentucky at some point in their career who may have outside experiences or professional development training which could have influenced participant responses of those who are currently working in Kentucky, and (3) excluding secondary education teachers (ex. Grades 9th through 12th) assuming that most, but not all identification and/or referrals for exceptional students are made in primary and/or middle

grades (ex. Pre-k through 8th grade). Despite trimming the population of possible participants, these limitations were deemed necessary in order to focus on targeted groups of educators who have the initial responsibility for early detection and/or referral of exceptional students for services.

Several limitations on using a survey as a research tool are also present, which included interpretation of results, bias in teacher responses, survey attendance, null responses, participant willingness, and responses at different grade levels. Additionally, the length and complexity of the survey may be considered a limitation as some participants may have been deterred from completing all the survey items once it was accessed for this reason. However, given the cost of employing a survey, convenience for the investigator, and ease of use for compiling data into SPSS, this served as an appropriate tool to generate the data needed for analysis. Also, this limitation was addressed by noting the estimated time needed for participants to complete the survey prior to accessing the survey. The last limitations highlight the validity. An external threat to validity is whether survey items or data could have been compromised using an external survey application such as Survey Monkey and potential technological malfunctions. Subsequently, internal validity issues included participants' honesty when responding to survey items, bias, and attrition. These limitations were addressed by inviting all K-12 teachers in the participating school districts across the state of Kentucky, increasing teacher motivation to participate by mentioning the benefits of the study on teacher education programs and training, and noting potential benefits of the study on future identification of exceptional students.

RECOMMENDATIONS

The scope and limitations of the study had been focused on elementary and middle grade school in one state, localized around Kentucky's colleges and universities. It would be insightful for future researchers to widen the scope of the study, analyze other educational systems, or change the composition of the participants to contribute to the understanding between the differences of stakeholders' knowledge impacting the academic and social-emotional needs of 2E students in Kentucky. At this point, further recommendations to the topic for expansion are listed:

1. Examine a broader set of participants across grade levels and school systems, as well as including parents of potential students for identification. This suggestions particularly targets the lack of general results. By examining a larger, more diverse population across counties, states, and participant roles, future researchers will be able to fully comprehend which specific training and dissemination of information methods encourages the highest likelihood of having the adequate knowledge and awareness of 2E needs in order to make appropriate identification and/or referrals for services to meet student needs. This extension would also reveal whether training and dissemination of information has been put in place to help teachers, as well as parents, to identify and assess 2E students.
2. Supplement the results with a qualitative analysis of how teachers and/or parents view training and the identification/referral process. Other researchers may become interested in analyzing the responses of teachers, as well as parents, on how they think training and other information resources enables

them to make valid referrals and provide services to 2E children. Suggestions on how to make training and programs more effective in assisting teachers could be obtained through interviewing teachers and/or parents.

3. Analyze the identification/referral processes on how teachers detect and provide services for other learning disabilities or exceptionalities. The study focused on teachers' knowledge regarding 2E students. It would be motivating to understand what specific training or coursework could help educators. Other professional roles, as well as parents, have different experiences which may contribute to educators' bank of knowledge and understanding that may be hindered in a conventional teacher education or training program setting.

IMPLICATIONS

Positive educational and social changes can be initiated if stakeholders, such as policy makers, educational leaders, and parents took the opportunity to more closely examine the results of this study and its implications for teacher training and the educational needs of 2E children. The results underscored the need for teachers to obtain the proper training in order to effectively identify and/or make referrals of 2E children for dual services. Formal training greatly increases the likelihood that teachers will have adequate knowledge to detect twice-exceptionality. Therefore, policy makers and educational leaders should make it a priority to provide educators with certified training programs and ongoing professional development. Additionally, training and professional development can only be instituted so long as sufficient budgets are allocated for continuing education of Kentucky's teachers.

Taking it one step further, schools should provide for dissemination of information to students' parents in order to help with the identification of 2E students. By doing so, parents may contribute to or build from teachers' knowledge on their child in order to make valid and comprehensive assessment of a child's needs and abilities. Consultation with parents and other professionals plays an important role in assisting teachers when determining if a child is 2E and finding suitable ways to meet the child's needs.

These implications reinforce the suggestions of Gardner's Multiple Intelligences, Bett's and Kercher's Autonomous Learner Model, and the Integrated Curriculum Model which implies that there is a need for comprehensive training and assessment, as well as a collaborative effort when identifying and/or referring 2E students in order to meets students' needs so that the 2E child may reach a level of achievement (Clark, 2013; Vantassel-Baska, 2006). In doing so, stakeholders' make a long term investment and may have an economic impact on the future by helping 2E children to maximize their potential. Twice-exceptional students may be armed with the skills and strategies needed to not only participant, but to be competitive in their local, state, and national communities, as well as the global arena.

CONCLUSION

In conclusion, the study findings exposed a lack of stakeholders' knowledge regarding twice-exceptionality which has an impact on the identification and referral of 2E students; thus, impacting academic and social-emotional needs of 2E students in Kentucky. Twice exceptional (2E) students are at a greater risk of underachieving due to

their complex needs, abilities, and the characteristics they bring with them into the education system (Yssel, Prater, and Smith, 2010). The goal of education is the development of all children rather than only those who have the aptitude to be high achievers. Access to an appropriate education is the obligation of educators to ensure the growth of their students. As the population of possible 2E students grows, so does the need for teachers to have adequate knowledge of and receive the necessary training regarding twice-exceptionality in order to make correct identification and appropriate referrals for services to meet their individual and unique needs.

Research questions were tested using frequency data to conduct either chi-square tests, one-way ANOVAs, Pearson Correlations, and cross tabulations to determine the significant differences in teachers' knowledge. Research questions one through four rejected the null hypotheses; however, the null hypothesis for research question five was not rejected. These findings indicated that teachers who received advanced training had greater knowledge and understanding of 2E students than did their counterparts. Teachers who had more training and knowledge had significantly more experience and reported higher levels of confidence regarding identifying and referring 2E students. Additionally, the more knowledge educators held, indicated a willingness to allow for more varied factors to be considered for identifying and referring students for dual services. The results also showed that it may be possible for teachers to correctly identify and refer more 2E students if more specific training were provided.

Given these results, stakeholders, including policy makers and educational leaders should ensure that teachers receive proper training and guidance in order to assess students, particularly the 2E. Adequate funding for training and the necessary resources

should be apportioned to teachers and educational institutions in order to afford more opportunities to exceptional students. The benefits may not only be felt by teachers and 2E students, but also by society at large. Future research is recommended in order to examine a wider participant population, conduct qualitative analysis of teachers' and parents' knowledge and experiences, and analyze how collaboration may assist teachers to attain more knowledge and the effects on the identification and referral process.

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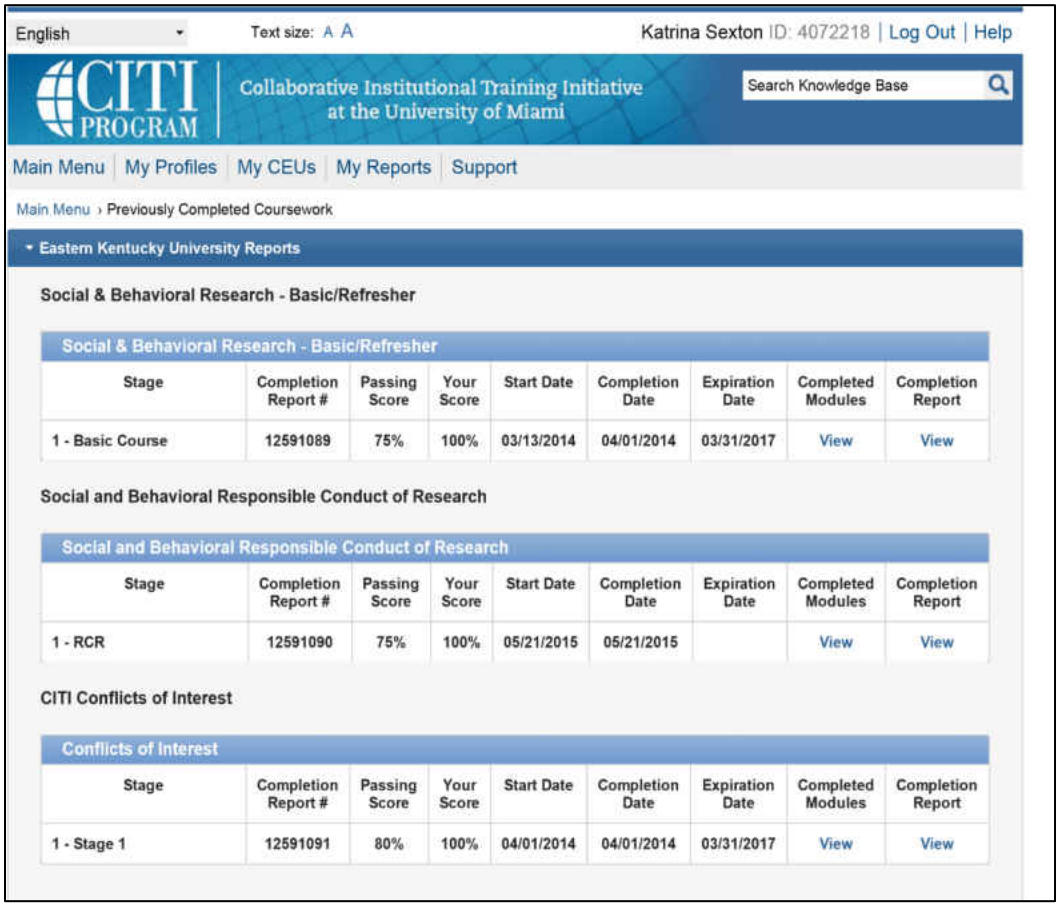
APPENDIX A:

Verification of IRB Training and CITI Training

Appendix A:

Verification of IRB Training and CITI Training



English Text size: A A Katrina Sexton ID: 4072218 | Log Out | Help

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Eastern Kentucky University Reports

Social & Behavioral Research - Basic/Refresher

Social & Behavioral Research - Basic/Refresher								
Stage	Completion Report #	Passing Score	Your Score	Start Date	Completion Date	Expiration Date	Completed Modules	Completion Report
1 - Basic Course	12591089	75%	100%	03/13/2014	04/01/2014	03/31/2017	View	View

Social and Behavioral Responsible Conduct of Research

Social and Behavioral Responsible Conduct of Research								
Stage	Completion Report #	Passing Score	Your Score	Start Date	Completion Date	Expiration Date	Completed Modules	Completion Report
1 - RCR	12591090	75%	100%	05/21/2015	05/21/2015		View	View

CITI Conflicts of Interest

Conflicts of Interest								
Stage	Completion Report #	Passing Score	Your Score	Start Date	Completion Date	Expiration Date	Completed Modules	Completion Report
1 - Stage 1	12591091	80%	100%	04/01/2014	04/01/2014	03/31/2017	View	View

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COURSEWORK REQUIREMENTS REPORT*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Katrina Sexton (ID: 4072218)
- **Email:** katrina_sexton9@eku.edu
- **Institution Affiliation:** Eastern Kentucky University (ID: 1410)
- **Phone:** 859-246-6768

- **Curriculum Group:** Social & Behavioral Research - Basic/Refresher
- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 1 - Basic Course

- **Report ID:** 12591089
- **Completion Date:** 04/01/2014
- **Expiration Date:** 03/31/2017
- **Minimum Passing:** 75
- **Reported Score*:** 100

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Belmont Report and CITI Course Introduction (ID:1127)	03/13/14	3/3 (100%)
Students in Research (ID:1321)	03/13/14	10/10 (100%)
History and Ethical Principles - SBE (ID:490)	03/13/14	5/5 (100%)
Defining Research with Human Subjects - SBE (ID:491)	03/14/14	5/5 (100%)
The Federal Regulations - SBE (ID:502)	03/14/14	5/5 (100%)
Assessing Risk - SBE (ID:503)	03/14/14	5/5 (100%)
Informed Consent - SBE (ID:504)	03/14/14	5/5 (100%)
Privacy and Confidentiality - SBE (ID:505)	03/14/14	5/5 (100%)
Research with Prisoners - SBE (ID:506)	03/14/14	4/4 (100%)
Research with Children - SBE (ID:507)	03/14/14	4/4 (100%)
Research in Public Elementary and Secondary Schools - SBE (ID:508)	03/14/14	4/4 (100%)
International Research - SBE (ID:509)	03/14/14	3/3 (100%)
Internet-Based Research - SBE (ID:510)	03/14/14	5/5 (100%)
Research and HIPAA Privacy Protections (ID:14)	03/14/14	5/5 (100%)
Vulnerable Subjects - Research Involving Workers/Employees (ID:483)	04/01/14	4/4 (100%)
Conflicts of Interest in Research Involving Human Subjects (ID:488)	04/01/14	5/5 (100%)
Unanticipated Problems and Reporting Requirements in Social and Behavioral Research (ID:14928)	04/01/14	3/3 (100%)
Eastern Kentucky University (ID:12908)	04/01/14	No Quiz

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

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COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COURSEWORK TRANSCRIPT REPORT**

** NOTE: Scores on this Transcript Report reflect the most current quiz completions, including quizzes on optional (supplemental) elements of the course. See list below for details. See separate Requirements Report for the reported scores at the time all requirements for the course were met.

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- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 1 - Basic Course

- **Report ID:** 12591089
- **Report Date:** 05/21/2015
- **Current Score**:** 100

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
Students in Research (ID:1321)	03/13/14	10/10 (100%)
History and Ethical Principles - SBE (ID:490)	03/13/14	5/5 (100%)
Defining Research with Human Subjects - SBE (ID:491)	03/14/14	5/5 (100%)
Belmont Report and CITI Course Introduction (ID:1127)	03/13/14	3/3 (100%)
The Federal Regulations - SBE (ID:502)	03/14/14	5/5 (100%)
Assessing Risk - SBE (ID:503)	03/14/14	5/5 (100%)
Informed Consent - SBE (ID:504)	03/14/14	5/5 (100%)
Privacy and Confidentiality - SBE (ID:505)	03/14/14	5/5 (100%)
Research with Prisoners - SBE (ID:506)	03/14/14	4/4 (100%)
Research with Children - SBE (ID:507)	03/14/14	4/4 (100%)
Research in Public Elementary and Secondary Schools - SBE (ID:508)	03/14/14	4/4 (100%)
International Research - SBE (ID:509)	03/14/14	3/3 (100%)
Internet-Based Research - SBE (ID:510)	03/14/14	5/5 (100%)
Research and HIPAA Privacy Protections (ID:14)	03/14/14	5/5 (100%)
Vulnerable Subjects - Research Involving Workers/Employees (ID:483)	04/01/14	4/4 (100%)
Unanticipated Problems and Reporting Requirements in Social and Behavioral Research (ID:14928)	04/01/14	3/3 (100%)
Conflicts of Interest in Research Involving Human Subjects (ID:488)	04/01/14	5/5 (100%)
Eastern Kentucky University (ID:12908)	04/01/14	No Quiz

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COURSEWORK REQUIREMENTS REPORT*

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- **Phone:** 859-246-6768

- **Curriculum Group:** Social and Behavioral Responsible Conduct of Research
- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 1 - RCR
- **Description:** This course is for investigators, staff and students with an interest or focus in **Social and Behavioral** research. This course contains text, embedded case studies AND quizzes.

- **Report ID:** 12591090
- **Completion Date:** 05/21/2015
- **Expiration Date:** N/A
- **Minimum Passing:** 75
- **Reported Score*:** 100

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Responsible Conduct of Research (RCR) Course Introduction (ID:1522)	05/21/15	No Quiz
Research Misconduct (RCR-Basic) (ID:16604)	05/21/15	5/5 (100%)
Data Management (RCR-Basic) (ID:16600)	05/21/15	5/5 (100%)
Authorship (RCR-Basic) (ID:16597)	05/21/15	5/5 (100%)
Peer Review (RCR-Basic) (ID:16603)	05/21/15	5/5 (100%)
Responsible Mentoring 01-1625 Archived 1625 (ID:1625)	05/21/15	6/6 (100%)
Using Animal Subjects in Research (RCR-Basic) (ID:13301)	05/21/15	5/5 (100%)
Conflicts of Interest (RCR-Basic) (ID:16599)	05/21/15	5/5 (100%)
Collaborative Research (RCR-Basic) (ID:16598)	05/21/15	5/5 (100%)
Research Involving Human Subjects (RCR-Basic) (ID:13566)	05/21/15	5/5 (100%)
Responsible Conduct of Research (RCR) Course Conclusion (ID:1043)	05/21/15	No Quiz

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COURSEWORK TRANSCRIPT REPORT**

** NOTE: Scores on this Transcript Report reflect the most current quiz completions, including quizzes on optional (supplemental) elements of the course. See list below for details. See separate Requirements Report for the reported scores at the time all requirements for the course were met.

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- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 1 - RCR
- **Description:** This course is for investigators, staff and students with an interest or focus in **Social and Behavioral** research. This course contains text, embedded case studies AND quizzes.

- **Report ID:** 12591090
- **Report Date:** 05/21/2015
- **Current Score**:** 100

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
Responsible Conduct of Research (RCR) Course Introduction (ID:1522)	05/21/15	No Quiz
Using Animal Subjects in Research (RCR-Basic) (ID:13301)	05/21/15	5/5 (100%)
Research Involving Human Subjects (RCR-Basic) (ID:13566)	05/21/15	5/5 (100%)
Authorship (RCR-Basic) (ID:16597)	05/21/15	5/5 (100%)
Collaborative Research (RCR-Basic) (ID:16598)	05/21/15	5/5 (100%)
Conflicts of Interest (RCR-Basic) (ID:16599)	05/21/15	5/5 (100%)
Data Management (RCR-Basic) (ID:16600)	05/21/15	5/5 (100%)
Responsible Mentoring 01-1625 Archived 1625 (ID:1625)	05/21/15	6/6 (100%)
Peer Review (RCR-Basic) (ID:16603)	05/21/15	5/5 (100%)
Research Misconduct (RCR-Basic) (ID:16604)	05/21/15	5/5 (100%)
Responsible Conduct of Research (RCR) Course Conclusion (ID:1043)	05/21/15	No Quiz

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

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COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COURSEWORK REQUIREMENTS REPORT*

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- **Phone:** 859-246-6768

- **Curriculum Group:** CITI Conflicts of Interest
- **Course Learner Group:** Conflicts of Interest
- **Stage:** Stage 1 - Stage 1

- **Report ID:** 12591091
- **Completion Date:** 04/01/2014
- **Expiration Date:** 03/31/2017
- **Minimum Passing:** 80
- **Reported Score*:** 100

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
CITI Conflict of Interest Course - Introduction (ID:15177)	04/01/14	No Quiz
Financial Conflicts of Interest: Overview, Investigator Responsibilities, and COI Rules (ID:15070)	04/01/14	5/5 (100%)
Institutional Responsibilities as They Affect Investigators (ID:15072)	04/01/14	5/5 (100%)
Conflicts of Commitment and Conscience (ID:15073)	04/01/14	5/5 (100%)

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COURSEWORK TRANSCRIPT REPORT**

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- **Course Learner Group:** Conflicts of Interest
- **Stage:** Stage 1 - Stage 1

- **Report ID:** 12591091
- **Report Date:** 05/21/2015
- **Current Score**:** 100

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
CITI Conflict of Interest Course - Introduction (ID:15177)	04/01/14	No Quiz
Financial Conflicts of Interest: Overview, Investigator Responsibilities, and COI Rules (ID:15070)	04/01/14	5/5 (100%)
Institutional Responsibilities as They Affect Investigators (ID:15072)	04/01/14	5/5 (100%)
Conflicts of Commitment and Conscience (ID:15073)	04/01/14	5/5 (100%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

CITI Program
Email: citisupport@miami.edu
Phone: 305-243-7970
Web: https://www.citiprogram.org

APPENDIX B:

IRB Application

Appendix B:

IRB Application

IRB Protocol Number:

Institutional Review Board
Application for Expedited/Full Review

1. **Title of Project:**
   Stakeholders' Knowledge Impacting the Academic and Social-Emotional Needs of Twice-Exceptional Students in Kentucky
2. **Principal Investigator/Faculty Advisor:**
   Principal Investigator Name: Katrina Ann Sexton
   Department: Educational Leadership and Policy Studies
   Email Address: katrina_sexton9@eku.edu
   Mailing Address: PO Box 196, c/o 315 North First Street, Burgin, KY 40310
   Campus Phone #: N/A Off Campus Phone #: 859-265-0839
   Faculty Advisor (required if PI is an EKU student): Dr. Charles Hausman
3. **Other Investigators:** Identify all other investigators assisting in the study. Attach additional pages if needed.
   Name: _____ Authorized to obtain consent? ☐YES ☐NO
   Responsibility in Project: _____
   Name: _____ Authorized to obtain consent? ☐YES ☐NO
   Responsibility in Project: _____
   Name: _____ Authorized to obtain consent? ☐YES ☐NO
   Responsibility in Project: _____
   Name: _____ Authorized to obtain consent? ☐YES ☐NO
   Responsibility in Project: _____
4. **Study Period of Performance:** upon IRB approval through 5/1/2016
   Note that research may not begin until IRB approval has been granted.
5. **Funding Support:** Is the research study funded by an external or internal grant or contract?
   ☒NO ☐YES
   Funding Agency: _____
   Copy of funding application narrative attached? ☐YES (required if study is funded)
6. **Risk Category:**
   ☒Not greater than minimal risk. Minimal risk means, "The probability and magnitude of physical or psychological harm that is normally encountered in the daily lives, or in the routine medical, dental, or psychological examination of healthy persons."
   ☐Greater than minimal risk, but of direct benefit to individual participants
   ☐Greater than minimal risk, no direct benefit to individual participants, but likely to yield generalizable knowledge about the subject's disorder or condition
   ☐Research not otherwise approvable which presents an opportunity to understand, prevent, or alleviate a serious problem affecting the health or welfare of participants
7. **Type of Review:** ☐Full Review (skip item #8 below) ☒Expedited Review (complete item #8 below)
8. **Expedited Review Categories:** If the proposed study represents not greater than minimal risk, and all activities fall within one or more of the categories below, the study is eligible for expedited review. Please check all applicable categories of research activities below.
   1) ☐ Clinical studies of drugs and medical devices only when condition (a) or (b) is met.
      (a) ☐ Research on drugs for which an investigational new drug application (21 CFR Part 312) is not required. (Note: Research on marketed drugs that significantly increases the risks or decreases the acceptability of the risks associated with the use of the product is not eligible for expedited review.)
      (b) ☐ Research on medical devices for which (i) an investigational device exemption application (21 CFR Part 812) is not required; or (ii) the medical device is cleared/approved for marketing and the medical device is being used in accordance with its cleared/approved labeling.
   2) ☐ Collection of blood samples by finger stick, heel stick, ear stick, or venipuncture as follows:

(a) ☐ From healthy, nonpregnant adults who weigh at least 110 pounds. For these subjects, the amounts drawn may not exceed 550 ml in an 8 week period and collection may not occur more frequently than 2 times per week; or
(b) ☐ From other adults and children considering the age, weight, and health of the subjects, the collection procedure, the amount of blood to be collected, and the frequency with which it will be collected. For these subjects, the amount drawn may not exceed the lesser of 50 ml or 3 ml per kg in an 8 week period and collection may not occur more frequently than 2 times per week.

3) ☐ Prospective collection of biological specimens for research purposes by noninvasive means. Examples: (a) Hair and nail clippings in a nondisfiguring manner; (b) deciduous teeth at time of exfoliation or if routine patient care indicates a need for extraction; (c) permanent teeth if routine patient care indicates a need for extraction; (d) excreta and external secretions (including sweat); (e) uncannulated saliva collected either in an unstimulated fashion or stimulated by chewing gumbase or wax or by applying a dilute citric solution to the tongue; (f) placenta removed at delivery; (g) amniotic fluid obtained at the time of rupture of the membrane prior to or during labor; (h) supra- and subgingival dental plaque and calculus, provided the collection procedure is not more invasive than routine prophylactic scaling of the teeth and the process is accomplished in accordance with accepted prophylactic techniques; (i) mucosal and skin cells collected by buccal scraping or swab, skin swab, or mouth washings; (j) sputum collected after saline mist nebulization.

4) ☐ Collection of data through noninvasive procedures (not involving general anesthesia or sedation) routinely employed in clinical practice, excluding procedures involving x-rays or microwaves. Where medical devices are employed, they must be cleared/approved for marketing. (Studies intended to evaluate the safety and effectiveness of the medical device are not generally eligible for expedited review, including studies of cleared medical devices for new indications.) Examples: (a) Physical sensors that are applied either to the surface of the body or at a distance and do not involve input of significant amounts of energy into the subject or an invasion of the subject's privacy; (b) weighing or testing sensory acuity; (c) magnetic resonance imaging; (d) electrocardiography, electroencephalography, thermography, detection of naturally occurring radioactivity, electroretinography, ultrasound, diagnostic infrared imaging, doppler blood flow, and echocardiography; (e) moderate exercise, muscular strength testing, body composition assessment, and flexibility testing where appropriate given the age, weight, and health of the individual.

5) ☐Research involving materials (data, documents, records, or specimens) that have been collected or will be collected solely for non-research purposes (such as medical treatment or diagnosis). (Note: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(4). This listing refers only to research that is not exempt.)

6) ☐Collection of data from voice, video, digital, or image recordings made for research purposes.

7) ☒Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. (Note: Some research in this category may be exempt from the HHS regulations for the protection of human subjects 45 CFR 46.101 (b)(2) and (b)(3). This listing refers only to research that is not exempt.)

8) ☐Continuing review of research previously approved by the convened IRB as follows:
(a) ☐Where (i) the research is permanently closed to the enrollment of new subjects; (ii) all subjects have completed all research-related interventions; and (iii) the research remains active only for long-term follow-up of subjects; or
(b) ☐ Where no subjects have been enrolled and no additional risks have been identified; or
(c) ☐ Where the remaining research activities are limited to data analysis.

9) ☐ Continuing review of research, not conducted under an investigational new drug application or investigational device exemption where categories two (2) through eight (8) do not apply but the IRB has determined and documented at a convened meeting that the research involves no greater than minimal risk and no additional risks have been identified.

9. **Background:**
   a. **Provide an introduction and background information for the study and provide a discussion of past research findings leading to this study. Cite literature that forms the scientific basis for the research.**

This study will examine whether teacher education programs in Kentucky adequately prepare educators about gifted-talented programs and special education programs for the learning disabled in relation to teachers' knowledge, perceptions, and practices regarding the referral and identification process of students who may be categorized as twice exceptional.

Adequacy and effectiveness of teacher training programs will be determined by examining the knowledge base of a population of experienced K-12 educators working in the field of public education in Kentucky's school systems. The methods of the study will use the results of the survey to shape the quantitative portion of the research.

Examination of teacher preparation, knowledge, perceptions, and practices for working with special populations of students, particularly twice-exceptional students, is a growing area of study with limited historical data for comparison. There is no universal standard for reporting teacher preparedness or knowledge base in regards to the referral and identification process of students for special education programs and data collected by the Department of Education is mostly limited to generalized reports based on criteria from the district level assessments. Because there is limited data on training teachers for twice-exceptional education, the literature review covers areas of broad academic research; special education and gifted programs, general teacher education/preparation, curriculum, strategies, and interventions utilized in the instruction of students identified for gifted or special education programs to establish a foundation for the examination of the teacher training programs in Kentucky and the proposed research.

Various kinds of research has been done over the years to understand the factors that affect student performance. Some researchers believe that income or social status are the most important factors that influence a child's future achievement. Other research has shown that parental involvement is a key factor and the best predictor of a child's achievement (Clark & Picton, 2012). However, teacher teaining programs may be the first indicator of where, how, and why special populations of students may be negatively affected, widening the gap between subgroups of students, specifically students identified as twice-exceptional in the gifted-talented program and/or special education programs.

Understanding why and to what extent parents and, more considerably, educators lack of knowledge about twice-exceptionality (2e) is paramount to understanding how to improve awareness and instruction in order for the education of the twice-exceptional child to be more successful. Research is needed regarding parent and educator knowledge of 2e, particularly within the domain of teacher preparation programs since this is where the process of identification and where curriculum development for special populations of students (i.e. twice-exceptional students) is first introduced.

To address the needs of special groups of learners, teachers require adequate training and experience, which Vantassel-Baska's (2006) Integrated Curriculum Model (ICM) sought to develop through a teacher training component. An analysis to explore stakeholders' (ex. teacher's) knowledge may suggest Vantassel-Baska's ICM can be strengthened serving as the foundation for the examination of Kentucky's teacher education programs' effectiveness/adequacy in preparing teachers in the referral and identification process of twice-exceptional (gifted/learning disabled) students.

10. **Research Objectives:**
   a. **List the research objectives.**

What is the effect of teacher education programs at Kentucky's colleges/universities on the referral and identification process of twice-exceptional students?

How much do teachers know about twice-exceptional students?

What is it like to be an educator who is responsible for teacher twice-exceptional students? How do teachers accommodate instruction?

How much do teachers who work with twice-exceptional students understand about the impact of dual diagnosis of gifted/learning deficit/disabled on underachievement?

How much information is shared with parents about the referral, identification, and learning processes of their child as impacted by the identification of their child as twice-exceptional?

What do teacher suggest to improve their extent of knowledge about twice-exceptionalities?

11. Subject Population:

a. What criteria will be used to determine the *inclusion* of participants in the study?

Educators working/employed at K-12 public schools in Kentucky, having completed a teacher education program at a Kentucky college/university, maintaining a minimum of a Rank III professional teacher certificate issued by the Commonwealth of Kentucky.

b. What criteria will be used to determine the *exclusion* of participants in the study?

Any persons who are not working/employed at a K-12 public school in Kentucky, completed any portion or all of the teacher education program outside of a Kentucky college/university, who does not have a minimum of a Rank III professional teacher certificate issued by the Commonwealth of Kentucky, or who has had their Kentucky teaching certificate revoked.

c. Anticipated Number of Participants *(maximum):* 500

d. Age Range of Participants: 20-60

e. Gender of Participants: ☐ Male ☐ Female or ☒ Gender not relevant to study

f. Ethnicity of Participants: _____ or ☒ Ethnicity not relevant to study

g. Health Status of Participants: _____ or ☒ Health status not relevant to study

h. Which of the following categories of subject will be included in the study? Please check all that apply.

1. ☒ Adult Volunteers
2. ☒ College Students age 18 and older
3. ☐ Minors (under age 18) – attach Form M
4. ☐ Pregnant Women (other than by chance)
5. ☐ Fetuses/Neonates
6. ☐ Hospital Patients
7. ☐ Patients at Inpatient Mental Health Facilities
8. ☐ Decisionally-Impaired Individuals – attach Form I
9. ☐ Institutionalized Decisionally-Impaired Individuals – attach Form I
10. ☐ Prisoners – attach Form P
11. ☐ Other – Please Describe: _____

12. Project Location:

a. Where will the study take place?

Statewide - only through state supported colleges/universities and K-12 public schools selected for the study.

b. If the study will take place at a location other than EKU, attach a letter from an authorized representative of the organization granting permission to use facility for research purposes.

☒ EKU only ☐ Letter(s) attached

c. Will any data be collected through organizations other than Eastern Kentucky University?
☒ No ☐ Yes, complete the following:
- Will personnel of the organization be involved in the data collection process or have access to data after collection? ☒ No ☐ Yes - If yes, list personnel on page 1, include copies of CITI completion reports, and define role here: _____

13. Recruitment of Participants:

a. How will prospective participants be identified for recruitment into the study?

Participants will be identified using a cross reference of information from the Kentucky Department of Education's (KDE) website and K-12 public school's websites related to Kentucky colleges/universities. Working/experienced teachers will be included who have at least 1 semester/year of teaching experience who have completed a teacher education program in a post-secondary institution in Kentucky between August 1st-May 1st, 2016. Teachers' will be identified using school websites which provide teacher email contacts on a public server through KDE.

b. Describe the recruitment procedures to be used with potential participants.

All Kentucky schools are eligible to be included in the study. All participants are to be over the age of 18 as required.

The recruitment of participants included experienced teachers/educators working in grade levels K-12. Consent for permission to conduct research using human subjects is to be imbedded within the survey link sent to all participants to gain approval among the various participants and the schools in this study.

To recruit participants, the investigator examined the teacher education program degree curriculum for each of Kentucky's colleges/universities offering a four year bachelor degree and master degree program in education with teacher certification. The various colleges/universities with the highest average enrollment/graduation rates from the college of education are to be identified in order to select K-12 schools within proximity who employ teachers who completed the teacher education programs.

The recruitment of participants within the K-12 schools will involve searching the Kentucky Department of Education's website for a list of schools and cross-referencing the list of schools with a list of the Kentucky colleges/universities to determine which schools are to be selected based on proximity. Once K-12 schools are selected, the schools' websites will be accessed from through KDE's link to gain a list of faculty/staff at the schools and their email addresses, which are posted for the public. An acknowledgement will be included with the link to be sent to all the selected participants/schools to obtain permission to conduct the survey for the collection of data from the educators participating in the study. The acknowledgement will address the teacher training, the purpose of the research, the necessity of the research, and the availability of the researcher to respond to further questions from working educators.

c. Recruitment materials to be used: Check all that will be used and attach copies: ☐None ☐Advertisement, ☐Flyer, ☐Telephone Script, ☐Verbal Recruitment Script, ☒Cover Letter, ☒Other: Acknowledgement, consent, and the survey instrument.

14. Ensuring Voluntary Participation

a. Who will be responsible for seeking the informed consent of participants?

Primary investigator

b. What procedures will be followed to ensure that potential participants are informed about the study and made aware that their decision to participate is voluntary?

Volunteers will be made aware of the nature of the study and asked to complete the consent prior to the collection of data at the time the participants receive the email with the survey as the consent will

be imbedded in the survey link in order to proceed to the survey instrument. Participants will be requested to read and accept the terms of the informed consent which will maintain particpiants responses using Survey Monkey, the survey software used for this study. Copies may be retained by the investigator and EKU to protect the privacy of participants and liability issues.

c. How will consent be documented?

Consent will be documented using Survey Monkey electronic software and MS Excel/SPSS once participants responses are returned from the survey software.

d. What consent documents will be used in the study? (Attach copies of all). ☒Informed Consent Form, ☐Parent/Guardian Permission Form, ☐Child/Minor Assent Form, ☐ Oral Script, ☐Other:

15. Research Procedures

a. Describe in detail the research procedures to be followed that pertain to the human participants. Be specific about what you will do and how you will do it. If applicable, differentiate between standard/routine procedures not conducted for research purposes from those that will be performed specifically for this study.

Electronic surveys will be presented to the identified participants. Collection of data from working teachers will be done through statified random sampling dividing the populations into "strata" then choosing a simple random sample from each stratum. The populations will be combined into an overall sample of working teachers. Data collection will be done using electronic surveys emailed to the K-12 teachers/educators directly. Emails will be accessed using the Kentucky Department of Education's website which provides links to all K-12 schools and the faculty/staff of the respective schools. Informed consent will be provided to the participants within the link to the online survey to be completed in order to proceed to the actual survey. The informed consent will provide a concise explanation detailing why this area of research is important and how stakeholders [parents, teachers, administrators, higher education institutions, future students, and legislators] could find the research beneficial. Additionally, the informed consent will provide contact information such as the investigators phone numbers and email addresses should further questions arise. The online questionnaire will be based on a Likert scale relating to teacher training levels, knowledge of special educational programs, level of experience pertaining to the referral and identification process of twice-exceptional students, optional open-ended questions to gather teacher responses regarding teacher perceptions, and space for additional information to be provided by participants interested in follow-up contact for further discussion.

16. Potential Risks

a. Describe any potential risks—physical, psychological, social, legal, or other.

Individuals may experience some minimal stress when responding to questions related to training and teaching experience.

b. What procedures will be followed to protect against or minimize any potential risks?

Care will be taken to keep questions and answers within the scope of the research related to academic and social experiences during the period of the study. Participants will not be asked to publicly discuss their personal teaching experiences or training and will be allowed to opt out of the study at any time they so choose.

c. How are risks reasonable in relation to the anticipated benefit to participants and in relation to the importance of the knowledge that may reasonably be expected to result?

Risks are minimal and research is beneficial to the study of teacher education programs, teacher training, and twice-exceptional education processes.

d. Will alternative choices be made available to participants who choose not to participate?
☒No ☐Yes, Describe: _____

17. Incentives and Research Related Costs

a. Will incentives be offered to participants? ☒ No ☐ Yes, complete the following items:

1) What incentives will be offered? _____
2) If monetary compensation will be offered, indicate how much the participants will be paid and describes the terms of payment. _____
3) Describe the method of ensuring that the incentives will not compel individuals to agree to participate in the study. _____
4) Describe how the incentives will be funded. _____

b. Will there be any costs to the subjects for participating? ☒ No ☐ Yes: Describe any costs that would be the responsibility of the subjects as a consequence of their participation in the research. _____

18. Research Materials, Records, and Confidentiality

a. What materials will be used for the research process? Include a description of both data collected through the study as well as other data accessed for the study.

The study will examine teacher education coursework offerings/requirements during the quantitative analysis. Opinions and/or reflections of teachers experiences and perceptions will also be collected to satisfy the qualitative portion of the study.

b. Who will have access to the data? If anyone outside the research team will have access to the data, provide a justification and include a disclaimer in consent documents.

Primary investigator and faculty advisor

c. Describe how and where research records will be stored. Note that all research-related records must be maintained for a period of three years from the study's completion and are subject to audit. Following the completion of the study and throughout the records retention period, student research records must be maintained by the faculty advisor who signs the application.

Records will be stored electronically on computers belonging to the primary investigator, the academic advisor, and the institution's server.

d. How will data be destroyed at the end of the records retention period (i.e., shredding paper documents, deleting electronic files, physically destroying audio/video recordings)?

Files will be deleted as prescribed by the research protocol.

e. Describe procedures for maintaining the confidentiality of human subjects data.

Names of participants volunteering for followup discussions will be hidden through coding and use of assigned ID numbers as needed. Online survey software will not return email addresses of participants when data collection occurs to provide for anonymity.

19. Application Components *(Check all items that are included)*:

A completed application package must include the following:

☒ Application Form
☒ CITI Training Completion Reports for all investigators, key personnel, and faculty advisors
☐ If applicable: Form M: Research Involving Minors/Children
☐ If applicable: Form P: Research Involving Prisoners
☐ If applicable: Form I: Research Involving Decisionally-Impaired Individuals
☐ If applicable: Form W: Research Involving Wards of the State
☒ If applicable: recruitment materials (i.e., advertisements, flyers, telephone scripts, verbal recruitment scripts, cover letters, etc.)
☒ If applicable: Consent form (required in most all cases), assent form (for subjects who are minors), and parent/guardian permission form (if subjects are minors)

☒ If applicable: Instrument(s) to be used for data collection (i.e., questionnaire, interview questions, or assessment scales)
☐ If applicable: grant/contract proposal narrative (required if study is funded)
☐ If applicable: letter(s) granting permission to use off-campus facility for research

20. Principal Investigator Statement:

I certify that this document fully discloses the involvement of human subjects in this research study and that human subjects will not be involved in any other way. I agree to follow the approved protocol in the conduct of this study and to abide by EKU Policy 4.4.12: Protecting Human Subjects in Research

I agree:

A. *to accept responsibility for the scientific and ethical conduct of this research study;*
B. *to obtain prior approval from the Institutional Review Board before implementing any changes to the research protocol or the study's documents, including those approved for recruitment, consent, and data collection;*
C. *to immediately report to the IRB any serious adverse reactions and/or unanticipated effects on subjects which may occur as a result of this study;*
D. *to maintain records related to this protocol for a period of three years following the project's completion;*
E. *to adhere to IRB reporting requirements, including annual continuing reviews and filing the final report.*

Katrina Ann Sexton	Katrina Sexton	2/3/16
Name	Signature	Date

21. Department Chairperson's Approval: (If the PI is also the Department Chair, the Dean or equivalent must sign.)

I have reviewed this application and attest to the scientific merit of this study and the competency of the investigator(s) to conduct the project.

James P. Bliss	James P. Bliss	2/2/2016
Name	Signature	Date

22. Faculty Advisor's Approval: (required if PI is an EKU student)

I have reviewed this application and attest to the scientific merit of this study and the competency of the investigator(s) to conduct the project. I understand that, as faculty advisor, I am responsible for guiding work on this project to ensure that the research protocol and EKU Policy 4.4.12: Protecting Human Subjects in Research ( ) are followed. I understand that I am responsible for maintaining records related to this study for a period of three years from the study's completion. I understand that, as faculty advisor, I am responsible for ensuring that reports are filed with the IRB in a timely manner and agree to file reports on behalf of the student researcher if necessary.

Charles Hausman	Charles Hausman	2/1/2016
Name	Signature	Date

APPENDIX C:

Consent and Information

Appendix C:

Consent and Information

Dissertation Research Consent Form

1. Eastern Kentucky University Consent to Act as a Human Participant

Project Title: Stakeholders' Knowledge Impacting the Academic and Social-Emotional Needs of Twice-Exceptional Students in Kentucky

Researcher: Katrina Sexton (doctoral candidate) guided in this research by Dr. Charles Hausman in the Department of Educational Leadership and Policy Studies at Eastern Kentucky University.

You are being asked if you want to be in a research study about stakeholders' knowledge and how it impacts the academic and social-emotional needs of twice-exceptional students in Kentucky. The below information will tell you about the study to help you decide if you want to participate.

Why am I being asked to participate in this research?
You are being invited to participate in this research study because you are either: (1) a student in a teacher education program in Kentucky; and/or (2) a teacher who received training through a Kentucky college/university currently working in a school/district which may be impacted by teacher training levels/knowledge – in the area(s) where the research is being conducted.

What is the purpose of the study?
The purpose of this study is to determine if teacher education programs in Kentucky adequately prepare educators about gifted-talented programs and special education programs in relation to the referral and identification process of students who may be categorized as twice exceptional. Teachers will be surveyed regarding their college/university training to learn more about how their level of knowledge effects teachers' abilities to properly refer and identify twice-exceptional students.

Where is the study going to take place and how long will it last?
The research procedures will be conducted at Eastern Kentucky University. You will NOT need to travel to participate in the study. Individual follow up may be completed if you indicated you would be interested in being contacted directly by the researcher. The total amount of time you will be asked to volunteer for this study (via internet) could range from 5 minutes up to 30 minutes depending on your responses on the survey.

What will I be asked to do?
During the study you will be asked to respond to a series of questions related to your academic experiences and interactions with teachers, parents, and special populations of students. You will not be expected to reveal your academic performance to the group. Your responses to questions will not be coerced in any manner.

Are there reasons why I should not take part in this study?
There are no reasons that would disqualify you from participating in this research other than your desire not to be involved.

What are the possible risks and discomforts?
To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life. Although we have made every effort to minimize this, you may find some questions we ask you to be uncomfortable. If so, we can tell you about some people who may be able to help you with these feelings.

Will I benefit from taking part in this study?
There is no guarantee that you will get any benefit from taking part in this study. However, there is a need for data on teacher training and referrals for services for twice-exceptional students. Your participation may add to the general knowledge about this subject. You may also infer new knowledge or ideas from survey questions and potential discussions with colleagues or the researcher.

Do I have to take part in this study?
If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering.

If I don't take part in this study, are there other choices?
If you do not want to be in the study, there are no other choices except to not take part in the study.

What will it cost me to participate?
There are no costs associated with taking part in this study.

Will I receive any payment or rewards for taking part in the study?
You will not receive any payment or reward for taking part in this study.

Who will see the information I give?
Your information will be combined with information from other people taking part in the study. When we write up the study to share it with other researchers, we will write about this combined information. You will not be identified in these written materials.
We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. For example, your name will be kept separate from the information you give, and will not be provided in any way if you choose to provide detailed participant information.

Can my taking part in the study end early?
If you decide to take part in the study, you still have the right to decide at any time that you no longer want to participate. You will not be treated differently if you decide to stop taking part in the study. The individuals conducting the study may need to end your

participation in the study. They may do this if you are not able to follow the directions provided or if they find that your being in the study is more risk than benefit to you.

What happens if I get hurt or sick during the study?
There is little or no likelihood that you will become hurt or sick due to this study. It is important for you to understand that Eastern Kentucky University will not pay for the cost of any care or treatment that might be necessary because you get hurt or sick while taking part in this study. That cost will be your responsibility. Also, Eastern Kentucky University will not pay for any wages you may lose if you are harmed by this study.

Usually, medical costs that result from research-related harm cannot be included as regular medical costs. Therefore, any unforeseen costs related to your participation in this study will be your responsibility.

What if I have questions?
Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the investigator, Katrina Ann Sexton at 859-265-0839 or katrina_sexton9@eku.edu via email. If you have any questions about your rights as a research volunteer, contact the staff in the Division of Sponsored Programs at Eastern Kentucky University at 859-622-3636. We will give you a copy of this consent form to take with you.

What else do I need to know?
You will be told if any new information is learned which may affect your condition or influence your willingness to continue taking part in this study.

It is important to the researcher that your responses to the survey questions remain confidential. Therefore, the researcher will request that the online survey website (Survey Monkey) NOT attach your email or computer IP address to your survey responses - allowing your responses to the survey to remain anonymous. Absolute confidentiality of data provided through the Internet cannot be guaranteed due to the limited protections of Internet access. You will be reminded to please be sure to close your browser when finished so no one will be able to see your responses. The data will be stored on the student researcher's computer and an external hard drive. All files will be password protected. The files will be maintained for a minimum of 3 years following the closure of the project. Your privacy will be protected because you will not be identified by name as a participant in this project. All information obtained in this study is strictly confidential unless disclosure is required by law.

This study is completely voluntary. Thus, you are free to refuse to participate or to withdraw your consent to be in this study at any time. There will be no penalty or unfair treatment should you choose not to be in this study. Participation in this study is not a requirement of your employment, nor will impact your employment. From participation in this study, you may experience positive feelings related to the knowledge that you are contributing to research that may help school educators working with twice-exceptional

learners. Also, information gained from this research may assist teacher education programs in better preparing educators to work with twice-exceptional learners.

By clicking “I WISH TO PARTICIPATE” you are indicating your consent and agreement to participate.

Click the link provided to participate, and to continue on to the survey questions.

APPENDIX D:

Knowledge of Twice-Exceptional Needs Survey

Consent Form

(Online Version)

Appendix D:

Knowledge of Twice-Exceptional Needs Survey

Consent Form

(Online Version)

Knowledge of Twice-Exceptional Needs Survey

It is important to the researcher that your responses to the survey questions remain confidential. Therefore, the researcher will request that the online survey website (Survey Monkey) NOT attach your email or computer IP address to your survey responses - allowing your responses to the survey to remain anonymous. Absolute confidentiality of data provided through the Internet cannot be guaranteed due to the limited protections of Internet access. You will be reminded to please be sure to close your browser when finished so no one will be able to see your responses. The data will be stored on the student researcher's computer and an external hard drive. All files will be password protected. The files will be maintained for a minimum of 3 years following the closure of the project. Your privacy will be protected because you will not be identified by name as a participant in this project. All information obtained in this study is strictly confidential unless disclosure is required by law.

This study is completely voluntary. Thus, you are free to refuse to participate or to withdraw your consent to be in this study at any time. There will be no penalty or unfair treatment should you choose not to be in this study. Participation in this study is not a requirement of your employment, nor will impact your employment. From participation in this study, you may experience positive feelings related to the knowledge that you are contributing to research that may help school educators working with twice-exceptional learners. Also, information gained from this research may assist teacher education programs in better preparing educators to work with twice-exceptional learners. IF you wish to see the entire statement, please email me at Katrina_sexton9@mymail.eku.edu

By clicking "I WISH TO PARTICIPATE" you are indicating your consent and agreement to participate.

Click below to indicate agreement to participate, and to continue on to the survey questions.

Individual responses to this survey will remain anonymous.

Please complete this survey only once.

The following questions are intended to rate educators' knowledge, experience, perceptions, and/or awareness of special programs for exceptional students. Research indicates there is a relationship between student success and teachers' knowledge and education. This survey should take about 15 minutes to complete.

APPENDIX E:

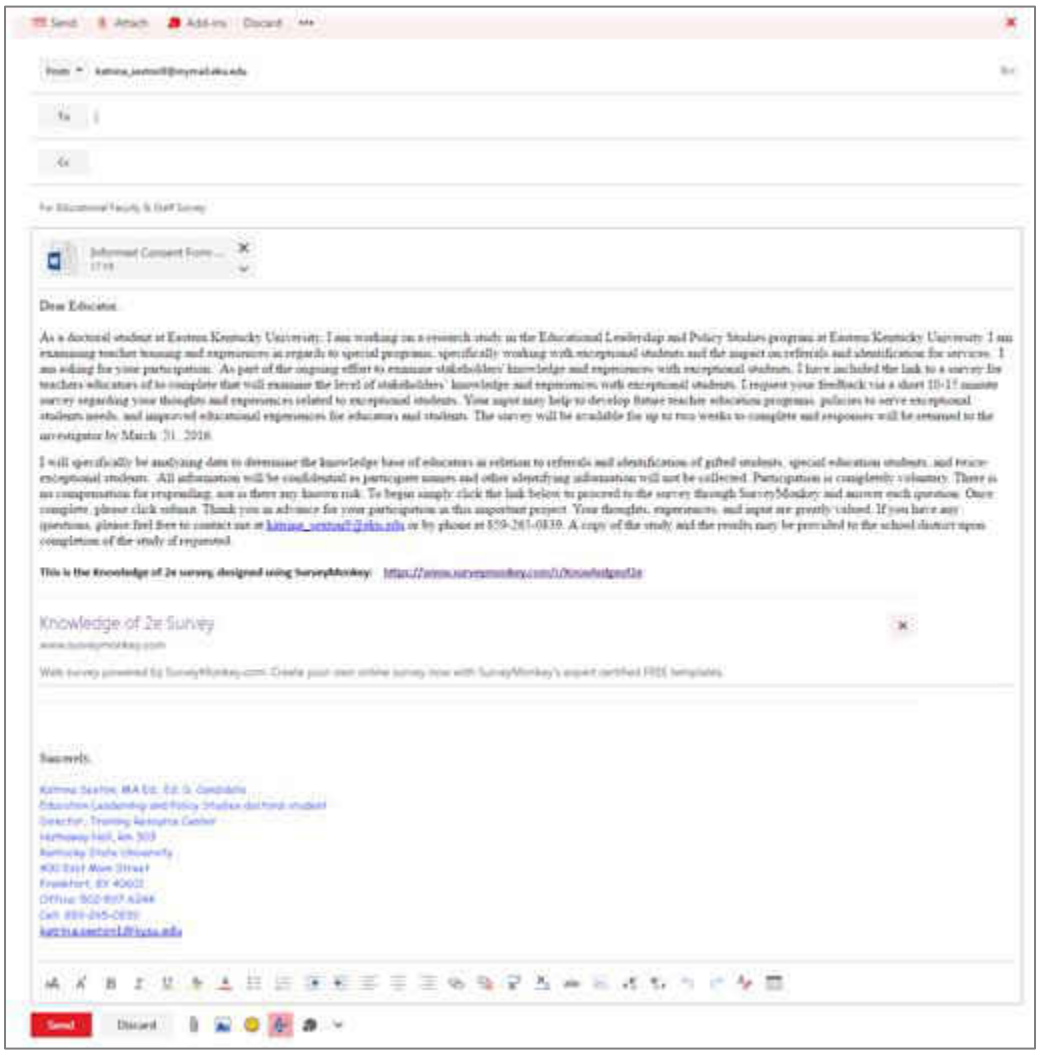
Recruitment Email

(Online Version)

Appendix E:

Recruitment Email

(Online Version)



APPENDIX F:

Recruitment Email

(Print Version)

Appendix F:

Recruitment Email

(Print Version)

Dear Educator,

As a doctoral student at Eastern Kentucky University, I am working on a research study in the Educational Leadership and Policy Studies program at Eastern Kentucky University. I am examining teacher training and experiences in regards to special programs, specifically working with exceptional students and the impact on referrals and identification for services. I am asking for your participation. As part of the ongoing effort to examine stakeholders' knowledge and experiences with exceptional students, I have included the link to a survey for teachers/educators of to complete that will examine the level of stakeholders' knowledge and experiences with exceptional students. I request your feedback via a short 10-15 minute survey regarding your thoughts and experiences related to exceptional students. Your input may help to develop future teacher education programs, policies to serve exceptional students' needs, and improved educational experiences for educators and students. The survey will be available for up to two weeks to complete and responses will be returned to the investigator by March 31st, 2016.

I will specifically be analyzing data to determine the knowledge base of educators in relation to referrals and identification of gifted students, special education students, and twice-exceptional students. All information will be confidential as participate names and other identifying information will not be collected. Participation is completely voluntary. There is no compensation for responding, nor is there any known risk. To begin simply click the link below to proceed to the survey through SurveyMonkey and answer each question. Once complete, please click submit. Thank you in advance for your participation in this important project. Your thoughts, experiences, and input are greatly valued. If you have any questions, please feel free to contact me at katrina_sexton9@eku.edu or by phone at 859-265-0839. A copy of the study and the results may be provided to the school/district upon completion of the study if requested.

This is the Knowledge of 2E survey, designed using SurveyMonkey: https://www.surveymonkey.com/r/Knowledgeof2E

Sincerely,

Katrina Sexton, MA Ed., Ed. D. Candidate
Director, Training Resource Center
Kentucky State University
400 East Main Street, Hathaway Hall, Rm 303
Frankfort, KY 40601
Office: 502-597-6244
Cell: 859-265-0839
katrina.sexton1@kysu.edu

APPENDIX G:

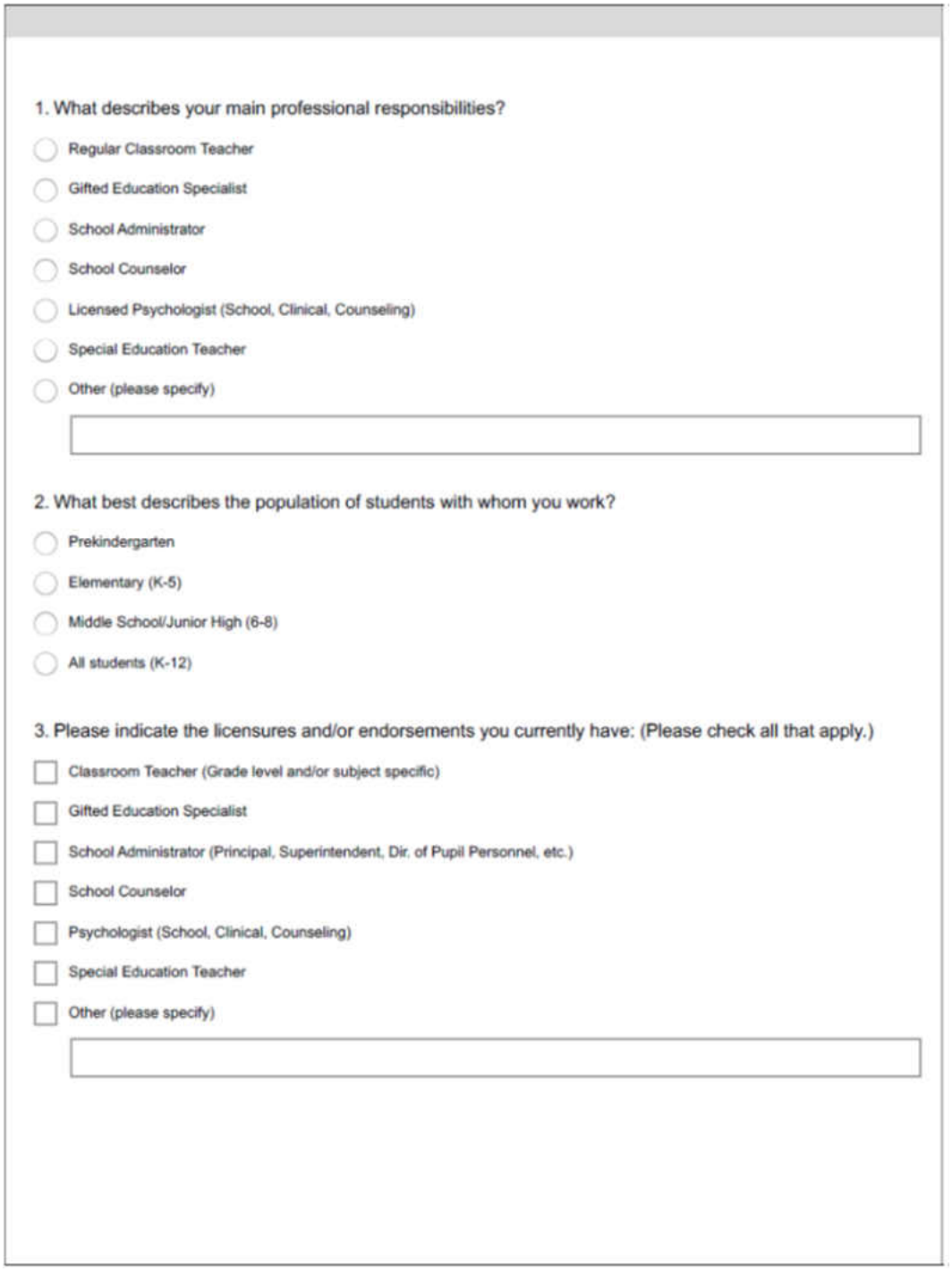
Knowledge of Twice-Exceptional Needs Survey

(Online Version)

Appendix G:

Knowledge of Twice-Exceptional Needs Survey

(Online Version)



1. What describes your main professional responsibilities?

- ○ Regular Classroom Teacher
- ○ Gifted Education Specialist
- ○ School Administrator
- ○ School Counselor
- ○ Licensed Psychologist (School, Clinical, Counseling)
- ○ Special Education Teacher
- ○ Other (please specify)

2. What best describes the population of students with whom you work?

- ○ Prekindergarten
- ○ Elementary (K-5)
- ○ Middle School/Junior High (6-8)
- ○ All students (K-12)

3. Please indicate the licensures and/or endorsements you currently have: (Please check all that apply.)

- ☐ Classroom Teacher (Grade level and/or subject specific)
- ☐ Gifted Education Specialist
- ☐ School Administrator (Principal, Superintendent, Dir. of Pupil Personnel, etc.)
- ☐ School Counselor
- ☐ Psychologist (School, Clinical, Counseling)
- ☐ Special Education Teacher
- ☐ Other (please specify)

4. How would you describe the area your school/district services?

- ○ Rural
- ○ Suburban
- ○ Urban
- ○ Other (please specify)

5. How many courses have you completed in a teacher education program catalogued as a gifted-talented education course?

6. How many courses have you completed in a teacher education program catalogued as a special education course?

7. How many courses have you completed in a teacher education program that covered twice-exceptional education?

8. How many years of classroom teaching experience do you have in Kentucky? (Click the appropriate # in the drop down menu up to 20+ years).

9. How would you define eligibility for the gifted-talented student? Select only one.

- ○ Exceptional students who are identified as possessing demonstrated or potential ability to perform at an exceptionally high level in intellect (IQ), creativity (visual/performing arts), or other leadership skills.
- ○ Exceptional students who are identified as possessing demonstrated or potential ability to perform at an exceptionally high level in general intellectual aptitude, specific academic aptitude, creative or divergent thinking, psychosocial or leadership skills, or in the visual or performing arts.
- ○ Exceptional students who are identified as possessing demonstrated or potential ability to perform at an exceptionally high level in any academic area.
- ○ Exceptional students who are identified as possessing demonstrated or potential ability to perform at an exceptionally high level in intellectual aptitude (IQ).
- ○ I don't know.

10. How would you define eligibility for the special education student? Select only one.

- Any student with any physical or mental impairment that may limit life activity and need special education.
- Any student with a physical, mental, or social-emotional impairment that may need special education.
- Any student having one or more disabilities and need special education as a result of a specific learning disability, serious emotional disturbance, speech impairment, mental retardation, visually impaired/blind, hard of hearing/deaf, orthopedically impairment, other health impairment, multiply handicapped.
- Any student with a diagnosed impairment that may limit academic aptitude and need special education.
- I don't know.

11. How would you define eligibility for the twice-exceptional student? Select only one.

- A pupil who is identified as gifted and talented in two or more areas of exceptionality.
- A pupil who is identified in two or more categories of identification under special education criteria.
- A pupil who is identified as gifted and talented in two or more areas of exceptionality regardless of disability.
- A pupil who is identified as gifted and talented in one or more areas of exceptionality and is also identified with a disability.
- I don't know

12. How familiar are you with the following?

	No familiarity	Little familiarity	Some familiarity	Specific familiarity
Federal/state guidelines for special education services.				
Your state's position on Response to Intervention (RtI) as a model for special education services.				
Your state's guidelines for gifted education services.				
Your state's position on Response to Intervention (RtI) as a model for gifted education services.				
Twice-exceptionality in your state.				
Gifted students with Attention-Deficit/Hyperactivity Disorder (ADHD)				
Gifted students with Autism Spectrum Disorder (ASD)				
Gifted students with emotional difficulties (anxiety, depression)				
Gifted students with learning disabilities (math, reading, etc.)				

13. How would you describe your experience in working with the following populations?

	No experience	Little experience	Moderate experience	Extensive experience
Gifted with Attention-Deficit/Hyperactivity Disorder (ADHD)	○	○	○	○
Gifted students with Autism Spectrum Disorder (ASD)	○	○	○	○
Gifted students with emotional difficulties (anxiety, depression)	○	○	○	○
Gifted students with learning disabilities (math, reading, etc.)	○	○	○	○
Students identified for/receiving services in the gifted program	○	○	○	○
Students identified for/receiving services in special education (with an IEP or 504 plan)	○	○	○	○
Twice-exceptional students	○	○	○	○

14. How confident are you that your current understanding of and experience with gifted-talented students enables you to make appropriate evaluation referrals of gifted-talented students?

- ○ I am not confident at all that I would appropriately refer gifted-talented students.
- ○ I am not very confident that I would appropriately refer gifted-talented students.
- ○ I am somewhat confident that I would appropriately refer gifted-talented students.
- ○ I am very confident that I would appropriately refer gifted-talented students.

15. How confident are you that your current understanding of and experience with special education students enables you to make appropriate evaluation referrals of special education students?

- ○ I am not confident at all that I would appropriately refer special education students.
- ○ I am not very confident that I would appropriately refer special education students.
- ○ I am somewhat confident that I would appropriately refer special education students.
- ○ I am very confident that I would appropriately refer special education students.

16. How confident are you that your current understanding of and experience with twice-exceptional students enables you to make appropriate evaluation referrals of twice-exceptional students.

- ○ I am not confident at all that I would appropriately refer twice-exceptional students.
- ○ I am not very confident that I would appropriately refer twice-exceptional students.
- ○ I am somewhat confident that I would appropriately refer twice-exceptional students.
- ○ I am very confident that I would appropriately refer twice-exceptional students.

17. Please check all of the following factors you think should be considered in order to make appropriate referrals for evaluation of gifted-talented students.

- [ ] Behavioral difficulties in the classroom
- [ ] Outside/non-academic activities (ex. piano lessons, community sports, etc.)
- [ ] Parental concerns
- [ ] Peer relationships
- [ ] Performance on class tests
- [ ] Performance on class work
- [ ] Performance on ability/IQ test(s)
- [ ] Performance on achievement test(s)

18. Of the 8 factors above, please select the three most important factors to consider in order to make appropriate referrals for evaluation of gifted-talented students.

	Most Important	Second Important	Third Important
Behavioral difficulties in the classroom	○	○	○
Outside/non-academic activities (ex. piano lessons, community sports, etc.)	○	○	○
Parental concerns	○	○	○
Peer relationships	○	○	○
Performance on class tests	○	○	○
Performance on class work	○	○	○
Performance on ability/IQ test(s)	○	○	○
Performance on achievement test(s)	○	○	○

19. Please check all of the following factors you think should be considered in order to make appropriate referrals for evaluation of special education students.

- [ ] Behavioral difficulties in the classroom
- [ ] Outside/non-academic activities (ex. piano lessons, community sports, etc.)
- [ ] Parental concerns
- [ ] Peer relationships
- [ ] Performance on class tests
- [ ] Performance on class work
- [ ] Performance on ability/IQ test(s)
- [ ] Performance on achievement test(s)

20. Of the 8 factors above, please select the three most important factors to consider in order to make appropriate referrals for evaluation of special education students.

	Most Important factor	Second most Important factor	Third most Important factor
Behavioral difficulties in the classroom	○	○	○
Outside/non-academic activities (ex. piano lessons, community sports, etc.)	○	○	○
Parental concerns	○	○	○
Peer relationships	○	○	○
Performance on class tests	○	○	○
Performance on class work	○	○	○
Performance on ability/IQ test(s)	○	○	○
Performance on achievement test(s)	○	○	○

21. Please check all of the following factors you think should be considered in order to make appropriate referrals for evaluation of twice exceptionality.

- ☐ Behavioral difficulties in the classroom
- ☐ Outside/non-academic activities (ex. piano lessons, community sports, etc.)
- ☐ Parental concerns
- ☐ Peer relationships
- ☐ Performance on class tests
- ☐ Performance on class work
- ☐ Performance on ability/IQ test(s)
- ☐ Performance on achievement test(s)

22. Of the 8 factors above, please select the three most important factors to consider in order to make appropriate referrals for evaluation of twice exceptionality.

	Most Important factor	Second most Important factor	Third most Important factor
Behavioral difficulties in the classroom	○	○	○
Outside/non-academic activities (ex. piano lessons, community sports, etc.)	○	○	○
Parental concerns	○	○	○
Peer relationships	○	○	○
Performance on class tests	○	○	○
Performance on class work	○	○	○
Performance on ability/IQ test(s)	○	○	○
Performance on achievement test(s)	○	○	○

23. Who, in your opinion, is usually the best choice to provide primary support for the gifted-talented student?

- ○ Classroom Teacher
- ○ Gifted Education Specialist
- ○ Parent
- ○ Psychologist (School, Clinical, Counseling)
- ○ School Administrator
- ○ School Counselor
- ○ Special Education Teacher
- ○ Other (please specify)

24. Who, in your opinion, is usually the best choice to provide primary support for the special education student?

- Classroom Teacher
- Gifted Education Specialist
- Parent
- Psychologist (School, Clinical, Counseling)
- School Administrator
- School Counselor
- Special Education Teacher
- Other (please specify)

25. Who, in your opinion, is usually the best choice to provide primary support for the twice-exceptional student?

- Classroom Teacher
- Gifted Education Specialist
- Parent
- Psychologist (School, Clinical, Counseling)
- School Administrator
- School Counselor
- Special Education Teacher
- Other (please specify)

26. What percentage of students in your school do you estimate are gifted-talented?

- Less than 1%
- 1%-5%
- 6%-10%
- 11%-15%
- Greater than 15%
- Unknown/No idea

27. What percentage of students in your school do you estimate are eligible for special education?

- ○ Less than 1%
- ○ 1%-5%
- ○ 6%-10%
- ○ 11%-15%
- ○ Greater than 15%
- ○ Unknown/No idea

28. What percentage of students in your school do you estimate are twice-exceptional?

- ○ Less than 1%
- ○ 1%-5%
- ○ 6%-10%
- ○ 11%-15%
- ○ Greater than 15%
- ○ Unknown/No idea

29. What are the areas of difficulty that you observe for gifted-talented students? Check all that apply.

- ☐ I have not observed gifted-talented students
- ☐ Academic difficulties
- ☐ Social difficulties with peers
- ☐ Social difficulties with adults
- ☐ School personnel coordination with parents
- ☐ Coordination of care among professionals working with the student
- ☐ Behavioral difficulties in the classroom
- ☐ Outside/non-academic activities (ex. piano lessons, community sports, etc.)
- ☐ Parental concerns
- ☐ Peer relationships
- ☐ Performance on class tests
- ☐ Performance on class work
- ☐ Performance on ability/IQ test(s)
- ☐ Performance on achievement test(s)

30. What are the areas of difficulty that you observe for special education students? Check all that apply.

- [ ] I have not observed gifted-talented students
- [ ] Academic difficulties
- [ ] Social difficulties with peers
- [ ] Social difficulties with adults
- [ ] School personnel coordination with parents
- [ ] Coordination of care among professionals working with the student
- [ ] Behavioral difficulties in the classroom
- [ ] Outside/non-academic activities (ex. piano lessons, community sports, etc.)
- [ ] Parental concerns
- [ ] Peer relationships
- [ ] Performance on class tests
- [ ] Performance on class work
- [ ] Performance on ability/IQ test(s)
- [ ] Performance on achievement test(s)

31. What are the areas of difficulty that you observe for twice-exceptional students? Check all that apply.

- [ ] I have not observed twice-exceptional students
- [ ] Academic difficulties
- [ ] Social difficulties with peers
- [ ] Social difficulties with adults
- [ ] School personnel coordination with parents
- [ ] Coordination of care among professionals working with the student
- [ ] Behavioral difficulties in the classroom
- [ ] Outside/non-academic activities (ex. piano lessons, community sports, etc.)
- [ ] Parental concerns
- [ ] Peer relationships
- [ ] Performance on class tests
- [ ] Performance on class work
- [ ] Performance on ability/IQ test(s)
- [ ] Performance on achievement test(s)

32. Please indicate where the majority of your knowledge pertaining to gifted-talented education has been obtained.

- Bachelor degree program
- Master degree program
- Other graduate school program/certification
- School, district, or state offered professional development
- Attending a conference
- On-the-job teaching
- No knowledge of gifted-talented education

33. Please indicate where the majority of your knowledge pertaining to special education has been obtained.

- Bachelor degree program
- Master degree program
- Other graduate school program/certification
- School, district, or state offered professional development
- Attending a conference
- On-the-job teaching
- No knowledge of gifted-talented education

34. Please indicate where the majority of your knowledge pertaining to twice exceptional education has been obtained.

- Bachelor degree program
- Master degree program
- Other graduate school program/certification
- School, district, or state offered professional development
- Attending a conference
- On-the-job teaching
- No knowledge of special education

35. Did you complete all of your teaching coursework in the state of Kentucky?

- Yes
- NO

36. Please share any additional comments:

APPENDIX H:

Knowledge of Twice-Exceptional Needs Survey

(Print Version)

Appendix H:

Knowledge of Twice-Exceptional Needs Survey

(Print Version)

The following questions are intended to rate educators' knowledge, experience, perceptions, and/or awareness of special programs for exceptional students. Research indicates there is a relationship between student success and teachers' knowledge and education. This survey should take about 15 minutes to complete.

The main purpose of *The Knowledge of Twice-Exceptional Needs Survey* is to determine educational professionals' familiarity with gifted education, special education, as well as knowledge and awareness about twice-exceptional students.

1. What describes your main professional responsibilities?
   - o Regular Classroom Teacher
   - o Gifted Education Specialist
   - o School Administrator
   - o School Counselor
   - o Licensed Psychologist (School, Clinical, Counseling)
   - o Special Education Teacher
   - o Other (Please specify): _____

2. What best describes the population of students with whom you work?
   - o Prekindergarten
   - o Elementary (K-5)
   - o Middle School/Junior High (6-8)
   - o All students (K-12)

3. Please indicate the licensures and/or endorsements you currently have: (Please check all that apply.)
   - o Classroom Teacher (Grade level and/or subject specific)
   - o Gifted Education Specialist
   - o School Administrator (Principal, Superintendent, Dir. of Pupil Personnel, etc.)
   - o School Counselor
   - o Psychologist (School, Clinical, Counseling)
   - o Special Education Teacher
   - o Other (Please specify): _____

4. How would you describe the area your school/district services?
   - o Rural
   - o Suburban
   - o Urban
   - o Other (please specify): _____

5. How many courses have you completed in a teacher education program specific to gifted-talented education? *(Drop down menu provided on the online version)*

- 0
- 1
- 2
- 3
- 4 or more

6. How many courses have you completed in a teacher education program specific to special education? *(Drop down menu provided on the online version)*

- 0
- 1
- 2
- 3
- 4 or more

7. How many courses have you completed in a teacher education program that covered twice-exceptional education? *(Drop down menu provided on the online version)*

- 0
- 1
- 2
- 3
- 4 or more

8. How many years of classroom teaching experience do you have in Kentucky? (Click the appropriate # in the drop down menu up 20+ years).

9. How would you define eligibility for the gifted-talented student? Select only one.

- Exceptional students who are identified as possessing demonstrated or potential ability to perform at an exceptionally high level in intellect (IQ), creativity (visual/performing arts), or other leadership skills.
- Exceptional students who are identified as possessing demonstrated or potential ability to perform at an exceptionally high level in general intellectual aptitude, specific academic aptitude, creative or divergent thinking, psychosocial or leadership skills, or in the visual or performing arts.
- Exceptional students who are identified as possessing demonstrated or potential ability to perform at an exceptionally high level in any academic area.
- Exceptional students who are identified as possessing demonstrated or potential ability to perform at an exceptionally high level in intellectual aptitude (IQ).
- I don’t know.

10. How would you define eligibility for the special education student? Select only one.
    - o Any student with any physical or mental impairment that may limit life activity and need special education.
    - o Any student with a physical, mental, or social-emotional impairment that may need special education.
    - o Any student having one or more disabilities and need special education as a result of a specific learning disability, serious emotional disturbance, speech impairment, mental retardation, visually impaired/blind, hard of hearing/deaf, orthopedically impairment, other health impairment, multiply handicapped.
    - o Any student with a diagnosed impairment that may limit academic aptitude and need special education.
    - o I don't know.

11. How would you define eligibility for the twice-exceptional student? Select only one.
    - o A pupil who is identified as gifted and talented in two or more areas of exceptionality.
    - o A pupil who is identified in two or more categories of identification under special education criteria.
    - o A pupil who is identified as gifted and talented in two or more areas of exceptionality regardless of disability.
    - o A pupil who is identified as gifted and talented in one or more areas of exceptionality and is also identified with a disability.
    - o I don't know

12. How familiar are you with the following?

	No familiarity	Little familiarity	Some familiarity	Specific familiarity
Federal/state guidelines for *special education* services.				
Your state's position on Response to Intervention (RtI) as a model for *special education services*.				
Your state's guidelines for *gifted education services.*				
Your state's position on Response to Intervention (RtI) as a model for *gifted education services.*				
Twice-exceptionality in your state.				
Gifted students with Attention-Deficit/Hyperactivity Disorder (ADHD)				
Gifted students with Autism Spectrum Disorder (ASD)				
Gifted students with emotional difficulties (anxiety, depression)				
Gifted students with learning disabilities (math, reading, etc.)				

13. How would you describe your experience in working with the following populations?

	No experience	Little experience	Moderate experience	Extensive experience
Gifted with Attention-Deficit/Hyperactivity Disorder (ADHD)				
Gifted students with Autism Spectrum Disorder (ASD)				
Gifted students with emotional difficulties (anxiety, depression)				
Gifted students with learning disabilities (math, reading, etc.)				
Students identified for/receiving services in the gifted program				
Students identified for/receiving services in special education (with an IEP or 504 plan)				
Twice-exceptional students				

14. How confident are you that your current understanding of and experience with gifted-talented students enables you to make appropriate evaluation referrals of gifted-talented students?

- o I am not confident at all that I would appropriately refer gifted-talented students.
- o I am not very confident that I would appropriately refer gifted-talented students.
- o I am somewhat confident that I would appropriately refer gifted-talented students.
- o I am very confident that I would appropriately refer gifted-talented students.

15. How confident are you that your current understanding of and experience with special education students enables you to make appropriate evaluation referrals of special education students?

- o I am not confident at all that I would appropriately refer special education students.
- o I am not very confident that I would appropriately refer special education students.
- o I am somewhat confident that I would appropriately refer special education students.
- o I am very confident that I would appropriately refer special education students.

16. How confident are you that your current understanding of and experience with twice-exceptional students enables you to make appropriate evaluation referrals of twice-exceptional students?

- o I am not confident at all that I would appropriately refer twice-exceptional students.
- o I am not very confident that I would appropriately refer twice-exceptional students.
- o I am somewhat confident that I would appropriately refer twice-exceptional students.
- o I am very confident that I would appropriately refer twice-exceptional students.

17. Please check all of the factors you think should be considered in order to make appropriate referrals for evaluation of gifted-talented students?

- ☐ Behavioral difficulties in the classroom
- ☐ Outside/non-academic activities
- ☐ Parental concerns
- ☐ Peer relationships
- ☐ Performance on class tests
- ☐ Performance on class work
- ☐ Performance on ability/IQ test(s)
- ☐ Performance on achievement test(s

18. Of the 8 factors above, please select the three most important factors to consider in order to make appropriate referrals for evaluation of gifted-talented students?

	Most Important	Second Important	Third Important
Behavioral difficulties in the classroom			
Outside/non-academic activities			
Parental concerns			
Peer relationships			
Performance on class tests			
Performance on class work			
Performance on ability/IQ test(s)			
Performance on achievement test(s)			

19. Please check all of the factors you think should be considered in order to make appropriate referrals for evaluation of special education students?

- ☐ Behavioral difficulties in the classroom
- ☐ Outside/non-academic activities
- ☐ Parental concerns
- ☐ Peer relationships
- ☐ Performance on class tests
- ☐ Performance on class work
- ☐ Performance on ability/IQ test(s)
- ☐ Performance on achievement test(s

20. Of the 8 factors above, please select the three most important factors to consider in order to make appropriate referrals for evaluation of special education students?

	Most Important	Second Important	Third Important
Behavioral difficulties in the classroom			
Outside/non-academic activities			
Parental concerns			
Peer relationships			
Performance on class tests			
Performance on class work			
Performance on ability/IQ test(s)			
Performance on achievement test(s)			

21. Please check all of the factors you think should be considered in order to make appropriate referrals for evaluation of twice-exceptional students?

- ☐ Behavioral difficulties in the classroom
- ☐ Outside/non-academic activities
- ☐ Parental concerns
- ☐ Peer relationships
- ☐ Performance on class tests
- ☐ Performance on class work
- ☐ Performance on ability/IQ test(s)
- ☐ Performance on achievement test(s

22. Of the 8 factors above, please select the three most important factors to consider in order to make appropriate referrals for evaluation of 2E students?

	Most Important	Second Important	Third Important
Behavioral difficulties in the classroom			
Outside/non-academic activities			
Parental concerns			
Peer relationships			
Performance on class tests			
Performance on class work			
Performance on ability/IQ test(s)			
Performance on achievement test(s)			

23. Who, in your opinion, is usually the best choice to provide primary support for the gifted-talented student?

- Classroom Teacher
- Gifted Education Specialist
- Parent
- Psychologist (School, Clinical, Counseling)
- School Administrator
- School Counselor
- Special Education Teacher
- Other (please specify): _____

24. Who, in your opinion, is usually the best choice to provide primary support for the special education student?

- Classroom Teacher
- Gifted Education Specialist
- Parent
- Psychologist (School, Clinical, Counseling)
- School Administrator
- School Counselor
- Special Education Teacher
- Other (please specify): _____

25. Who, in your opinion, is usually the best choice to provide primary support for the twice-exceptional student?

- Classroom Teacher
- Gifted Education Specialist
- Parent
- Psychologist (School, Clinical, Counseling)
- School Administrator
- School Counselor
- Special Education Teacher
- Other (please specify): _____

26. What percentage of students in your school do you estimate are gifted-talented?

- Less than 1%
- 1%-5%
- 6%-10%
- 11%-15%
- Greater than 15%
- Unknown/No idea

27. What percentage of students in your school do you estimate are eligible for special education?

- Less than 1%
- 1%-5%
- 6%-10%
- 11%-15%
- Greater than 15%
- Unknown/No idea

28. What percentage of students in your school do you estimate are twice-exceptional?

- Less than 1%
- 1%-5%
- 6%-10%
- 11%-15%
- Greater than 15%
- Unknown/No idea

29. What are the areas of difficulty that you observe for gifted-talented students? Check all that apply.

- Academic difficulties
- Social difficulties with peers
- Social difficulties with adults
- School personnel coordination with parents
- Coordination of care among professionals working with the student
- Behavioral difficulties in the classroom
- Outside activities
- Parental concerns
- Peer relationships
- Performance on class tests
- Performance on class work
- Performance on ability/IQ test(s)
- Performance on achievement test(s)

30. What are the areas of difficulty that you observe for special education students? Check all that apply.

- Academic difficulties
- Social difficulties with peers
- Social difficulties with adults
- School personnel coordination with parents
- Coordination of care among professionals working with the student
- Behavioral difficulties in the classroom
- Outside activities
- Parental concerns
- Peer relationships
- Performance on class tests

- Performance on class work
- Performance on ability/IQ test(s)
- Performance on achievement test(s)

31. What are the areas of difficulty that you observe for twice-exceptional students? Check all that apply.

- Academic difficulties
- Social difficulties with peers
- Social difficulties with adults
- School personnel coordination with parents
- Coordination of care among professionals working with the student
- Behavioral difficulties in the classroom
- Outside activities
- Parental concerns
- Peer relationships
- Performance on class tests
- Performance on class work
- Performance on ability/IQ test(s)
- Performance on achievement test(s)

32. Please indicate where the majority of your knowledge and experience pertaining to gifted-talented education has been obtained.

- Bachelor degree program
- Master degree program
- Other graduate school program/certification
- School, district, or state offered professional development
- Attending a conference
- On-the-job teaching
- None knowledge of gifted-talented education

33. Please indicate where the majority of your knowledge and experience pertaining to special education has been obtained.

- Bachelor degree program
- Master degree program
- Other graduate school program/certification
- School, district, or state offered professional development
- Attending a conference
- On-the-job teaching
- None knowledge of gifted-talented education

34. Please indicate where the majority of your knowledge and experience pertaining to gifted-talented, special education, and/or twice exceptional education has been obtained.

- Bachelor degree program
- Master degree program
- Other graduate school program/certification
- School, district, or state offered professional development
- Attending a conference
- On-the-job teaching
- None knowledge of gifted-talented education

35. Did you complete all of your teaching coursework in the state of Kentucky?

- Yes
- No

36. Please share any additional comments:

APPENDIX I:

Map of Kentucky Counties Surveyed With Corresponding List of Counties/School Districts Surveyed in Proximity to a Kentucky College/University

Appendix I:

Map of Kentucky Counties Surveyed With Corresponding List of Counties/School Districts Surveyed in Proximity to a Kentucky College/University

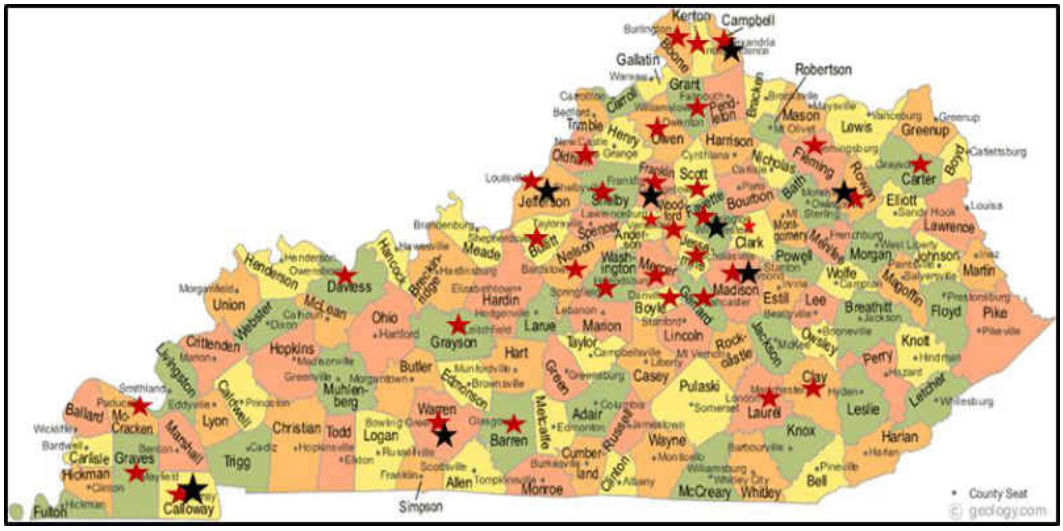


Figure 5 *Map of Kentucky Counties Surveyed*

District/County ★	Location	University ★
Calloway, Graves & McCracken	Calloway	Murray State University
Carter, Fleming, & Rowan	Rowan	Morehead State University
Boone, Campbell, Grant, & Kenton	Campbell	Northern Kentucky University
Clark, Fayette, Jessamine, Scott, & Woodford	Fayette	University of Kentucky
Bullitt, Jefferson, Nelson, Oldham	Jefferson	University of Louisville
Barren, Grayson, Daviess & Warren	Warren	Western Kentucky University
Anderson, Franklin, Owen, & Shelby	Franklin	Kentucky State University
Boyle, Clay, Garrard, Laurel, & Madison	Madison	Eastern Kentucky University
Mercer, Washington		
* Surveyed a total of 34 out of 120 counties.		* Focused around 8 public universities with COE.
* Total of 7,874 surveys sent to P-12 schools.		* Per KDE, more than 40k public school teachers in KY.

Figure 6 *List of Counties/School Districts Surveyed in Proximity to a Kentucky College/University.*

APPENDIX J:

Curriculum Vitae

Appendix J:

Curriculum Vitae

KATRINA A. SEXTON, ED. D.
Director, UTC Training Resource Center
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Kentucky State University
Hathaway Hall, 303
400 E. Main Street
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PO Box 196
315 North 1st Street
Burgin, KY 40310-0196
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EDUCATION

Doctor of Education, Educational Leadership and Policy Studies, Eastern Kentucky University, Richmond, KY. Major: Gifted and Special Education. Coursework: teaching with digital media, curriculum in gifted-talented education, gifted-talented youth development, quantitative methods, model programs of gifted-talented education, cultural and contextual leadership, leadership for change in organizations, leadership in rural settings, qualitative methods, college teaching, social and political leadership, advanced research methods, organizational behavior and justice, seminar on rural schools and communities, practicum in gifted-talented education, and field studies (prospectus development & teaching in STEM camp). Research topic: impact of teacher training on twice-exceptional students. Chair/Advisor: Professor Charles Hausman, Ph. D. Committee members: Asst. Professor Tara Shepperson, Ph. D., Asst. Professor Deborah West, Ed. D., and Associate VP Mary Spor, Ph. D.

Master of Arts in Education, Elementary Education, Eastern Kentucky University, Richmond, KY. Major Field: Middle Grades Education. Non-thesis coursework: elementary education teaching, curriculum and instruction in middle school, human development and learning, discipline and classroom management, state and local politics, social studies, reading, economics, and language arts curriculum. Research interests: political activism in education. Chair/Advisor: Professor Rodney White, Ed. D. July, 2008.

Bachelor of Arts, Secondary Education, Eastern Kentucky University, Richmond, KY. Major: History Teaching. Coursework: secondary education teaching, curriculum and instruction in education, human development and learning, secondary curriculum classroom organization and management, assessment in education, exceptional learners inclusive, principles of politics and government, history, social studies, reading, and economics curriculum. Advisor: Professor Rodney White, Ed. D. May, 2004.

Associate of Arts and Sciences, History, Saint Catharine College, Saint Catharine, KY. Major: History teaching. Coursework: curriculum and instruction in education, human development and learning, secondary curriculum classroom organization and management, assessment in education, principles of politics and government, U.S. and world history, social sciences, reading, and health-nutrition. Activities: NAIA women's fast-pitch softball team. Advisor: Professor David Wallace, Ph. D. May, 2000.

ACADEMIC RESEARCH PAPERS & PUBLICATIONS

Sexton, K. and Thompson, S. (2015). Compassion Leads to the Creation of the Backpack Program in Kentucky. *Kentucky Journal of Excellence in College Teaching and Learning, 13,* pp. 9-20. ISSN 1943-7943 Print, ISSN 1943-7935 Online.

(Spring, 2015). Compassion: The Heart's Response to Suffering - a literature review on compassion and the BackPack Food Program with commentary from one Kentucky FRYSC Coordinator (pp. 1-21). Professor Sherwood Thompson (Ph.D., Ed.), *Organizational Behavior and Justice EDL 925*. Richmond, KY: Eastern Kentucky University Graduate School.

(Spring, 2014). Bridging the Gap: How Does Parent Involvement Impact Achievement Scores for Special Populations of Students – a research study pilot project (pp. 1-33). Associate Professor Paul Erikson (Ph.D., Ed.), *Introduction to Quantitative Methods EDL 810.* Richmond, KY: Eastern Kentucky University Graduate School.

(Summer, 2008). Political Activism in Education. Associate Professor Jo Ann Ewalt (Ph.D., Ed.), *Political Science Independent Study* (pp. 1-25). Richmond, KY: Eastern Kentucky University Graduate School.

ADDITIONAL RESEARCH EXPERIENCE

U.S. Department of Education Striving Readers Project, Kentucky Content Literacy Consortium (KCLC), Washington County Schools (K. Belcher, Program Director). Participant in 2006 professional development seminar; observed group leaders as they administered literacy training program; designed, administered, and evaluated effectiveness of classroom/grade level programs designed to teach literacy/reading skills to middle/secondary students; participated in meetings with departmental and multi-disciplinary staff; reported progress of project to district literacy coach. 2005-2007.

The Kentucky Community Partners for Healthy Farming ROPS Project, Cost Effectiveness of ROPS in Classroom Laboratory, Washington County Schools and University of Kentucky (H. Cole, J. Muehlbauer, L. Piercy, S. Morgan, T. Struttmann, and V. Brandt). Administered program of materials and activities that explore cost effectiveness of ROPS retrofits, the impact on communities, and preserving farmers' health way of life and economy in classroom environment; interviewed students; collaborated in project meetings; reported progress of project to designers/authors. 2004-2005.

HONORS & AWARDS

Eastern KY University, 2008 Honorary Student Commencement Speaker
National Dean's List, 1998-2002.
KHEAA Teaching Scholarship, 1998-2002.
St. Catharine College, Freshmen History Award, 1998-1999.
Saint Catharine College, Full Academic Honors Scholarship, 1998-1999.
Burgin Christian Church Scholarship, 1998-1999.
Mercer Co. High School, Drugs Are Wrong Go Straight (D.A.W.G.S.) Scholarship, 1998-1999.

PROFESSIONAL DEVELOPMENT

Organizational & Public Service

Recording Secretary, Burgin Independent School Parent Teacher Organization, 2015
Burgin City Councilwoman, Burgin, KY, elected term of office 2009/2011.
Business Dept. Recognition Committee, Ephraim McDowell Health, Danville, KY, 2008.
Reviewer/Scorer, Commonwealth Accountability Testing System, Washington Co. Schools, 2006/07.
Discipline Committee, Washington County High School, 2005/06.

Continuing Education & Training Experience

Exploring Cultural Diversity and Prejudice, University Training Consortium, Kentucky State University, Training Resource Center, Director and Trainer, June 2014-Present.

Case Management for KY Transitional Assistance for Needy Families, EKU Training Consortium and KY Cabinet for Health and Family Services, June 2010-October 2013.

Food Benefits, EKU Training Consortium and KY Cabinet for Health and Family Services, January 2009-October 2013.

Introduction to Family Support, EKU Training Consortium and KY Cabinet for Health and Family Services, December 2008-January 2009.

Software Programs

SPSS, Microsoft Office Suite (Word, Excel, Access, PowerPoint, Publisher, Outlook), Glogster, Prezi, Banner, Adobe Reader, Internet Explorer, Google Chrome, Firefox.

Affiliations

National Association of Professional Women
National Education Association.
Kentucky Education Association.
Golden Key International Honor Society.
Phi Theta Kappa International Honor Society, St. Catharine College, KY Chapter.
Phi Alpha Theta History Honor Society, Eastern KY University, KY Chapter.
Kappa Delta Pi International Honor Society in Education, Eastern KY University, KY Chapter.

WORK EXPERIENCE

2016/Current **Eastern Kentucky University: Online Part-time Faculty.** Responsible for the instruction of assigned small groups of students in scheduled online courses at a minimum of 15 hours per week in fulfilling the teaching responsibilities. Schedule and moderate small group online chat sessions as specified. Monitor and respond to the assigned small group online discussion forums. Monitor and track student participation in the course, alerting the Program Director, Lead Instructor and Program Manager of at-risk students. Manage grading and review of assignments. Complete student assessments at the end of each course. Respond to student questions, interacting with the Lead Instructor or Program Director (academic issues) or Program Manager (administrative issues) on behalf of students where necessary. Provide course feedback and suggestions for course and program improvement to the Lead Instructor, Curriculum Specialist, and Program Director. Perform other duties related to teaching and managing the course as requested by the Lead Instructor.

2014/Current **Kentucky State University: Office of Research, Grants, and Sponsored Programs: University Training Consortium (UTC): Director of the Training Resource Center.** Provide quality and timely education/learning services; exhibit a spirit of true collaboration; demonstrate friendliness/sincerity; create positive work environments; curriculum development and training delivery. Facilitate training/teaching for organizations and professional growth for human services workers throughout the Commonwealth. Act as a valuable link between the Dept. of Community Based Services, universities, and community partners. Supply creative response to unique learning initiatives of the Cabinet and communities, including assistance in the development of Credit for Learning (CFL) courses. Provide direct-billing services by coordinating and forwarding lodging, per diem expenses, and other allowable costs arising from subcontractor services for approved training events to EKU Training Resource Center and the Commonwealth. Continue the development and support of the Learning Development Team, providing continuous quality improvement efforts to the service regions, and offer LDT training activities and support for regional/multi-regional training needs when indicated. Administer and monitor budgets and grant proposals/funding. Supervise support staff. Coordinate regional/state meetings and conferences as needed. Maintain reports and logs for grants accounting.

2013/2014 **KY Community and Technical College System: Bluegrass Community and Technical College: Academic Advisor.** Meet with students to develop educational plan and register for classes. Referrals to other departments for assistance with financial aid and admissions. Complete degree audits for graduation requirements. Complete Satisfactory Academic Progress (S.A.P) appeals documents for students' financial aid requirements.

2008/2013 **Commonwealth of KY Cabinet for Health and Family Services: Department for Community Based Services, Division of Family Support: Case Management Specialist II.** Determining eligibility for public assistance programs, providing job-readiness courses, assist with college and employment services, monitor participants and maintain reports for community service volunteers and work study participants, referrals for childcare and other program assistance to charitable organizations, monitor school attendance for minors and truancy reports, issue voucher for services and remit payment to third parties through grant funded program.

2007/2008 **Ephraim McDowell Health: Third Party Billing Specialist.** Reviewed and issued medical insurance claims to insurance companies. Maintained communications between customers and insurance providers. Met with patients/families to review and notarize legal documents (advance directives).

Fall 2007 **Washington County High School: Grades 9-12 Long-term Substitute Teacher Business/DECA.** Corresponded/collaborated with regular classroom teacher. Designed/implemented business, marketing, finance, and DECA lessons/materials. Coordinated/organized and advised DECA club. Monitored/reported progress and grades to administration. Participated in staff meetings and parent conferences.

2004/2007 **Washington County High School: Grades 9-12 Social Studies Teacher.** Completed teaching internship. Developed and scored writing portfolios for Kentucky CATS assessment. Developed and implemented curriculum aligned with KY 4.1 CC and Program of Studies. Researched, designed, and implemented lesson plans of unique learning experiences for teaching multiple areas of content: U.S. History, World Civilizations, Geography, Global Issues, Government/Economics, Law and Justice, Survey of History, Business, Marketing and Finance. Maintained classroom management and discipline. Collaborate with colleagues, parents, and community. Member of the Discipline Committee and Social Studies Department. Coordinated and sponsored PEP Club. Volunteer for Extended School Services.

Spring 2004 **Boyle County High School: Grade 11 Student Teacher** (Advanced Placement U.S. History and mainstream history courses). Maintained regular classroom teacher's curriculum. Design and implement lesson plans for A.P. course and regular classes. Maintain classroom management and discipline. Collaborate with colleagues. Attended staff meetings and parent conferences. Required to teach one course a day for a semester, but actually taught all of supervising teacher's classes for semester.

2002/2003 **Burgin Independent Schools: Grades P-12 Substitute Teacher.** Implement and maintain regular classroom teacher's lesson plans. Maintain classroom management and discipline.