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Relationship of Teacher Training Levels to Teacher Referrals for Twice Exceptional Students

Robin A. Jones
Walden University

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Walden University

College of Social and Behavioral Sciences

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Review Committee

Dr. Medha Talpade, Committee Chairperson, Psychology Faculty

Dr. Anthony Perry, Committee Member, Psychology Faculty

Dr. Kimberley Cox, University Reviewer, Psychology Faculty

Chief Academic Officer

Eric Riedel, Ph.D.

Walden University
2014

Abstract

Relationship of Teacher Training Levels to Teacher Referrals for Twice Exceptional

Students

by

Robin A. Jones

MSCIS, Boston University

MCPM, Boston University

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

General Education Psychology

Walden University

November 2014

Abstract

Although previous studies have acknowledged the role of teacher training in working with children with special needs, none have investigated the relationship between teacher training and referrals. There is a need to understand the factors that affect K-12 classroom teachers' referrals of twice exceptional (2E) students into gifted programs. Supported by the optimal stimulation theory, the purpose of this quantitative study was to determine if there is a relationship between teacher training and 2E student referrals. The survey method was used to collect data from 102 K-12 teachers in the Ohio school district on their teaching credentials, ranging from no training to being certified to teach gifted children. The teachers read a vignette about a hypothetical student who had an emotional behavior disorder and indicated their decision for referral. Phi and Cramer's V tested the validity of the hypothesis that teachers will make referrals according to their level of training. A binary logistic regression was performed to determine which factors predicted the referral of the hypothetical 2E student described in the vignette and the number of self-reported referrals during the previous year. Teachers who received training in the education and learning of exceptional students beyond the current level of degree for K-12 teachers were significantly more likely to refer 2E students to their school's gifted program. Teachers who received advanced training in working with exceptional students were significantly more likely to have made referrals of 2E students during the previous academic year. The results of this study can initiate positive social change by aiding teacher-educators or leaders in education to make specific recommendations for teacher training in an attempt to respond to the needs of 2E students.

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Dedication

This research study is dedicated to Nicholas Broderick Banks Jones and Kalista Elizabeth Jones for without their disabilities in ADHD, ODD, LD, and EBD along with their gifted intellect this study would never have taken place.

You see it was one bright day when Nicholas was removed from his sixth day care in six months that I noticed something very special about him as a child. Nicholas was only three years old, so I asked his mother to allow me to provide day care for Nicholas and she agreed. Within one week, Nicholas went from Kindergarten material to knowing and understanding second grade material. Teachers consistently told Nicholas mother that he had a disability and Nicholas was a slow learner. Although Nicholas has a dual disability, ADHD and ODD, in actuality Nicholas was a brilliant child and someone who was just bored in the general classroom.

Ten years later Nicholas skipped his last year of middle school, and he is now in high school and taking college level courses. Nicholas consistently scores at the top of the state assessment exams for his level.

Kalista on the other hand was diagnosed with ADHD and LD. Kalista was expelled in Kindergarten. How can you expel someone in Kindergarten? Through many tutoring sessions and enrollment into a private school, Kalista is now performing at or above grade level in her courses. Kalista does not allow her disability to overshadow her gift of fashion and design. She has a very special gift that does not translate into book knowledge.

You see, these two children laid the foundation for my study in twice exceptional children. Without training and a better understanding, there will be many children who will not have the chance to excel like Nicholas and Kalista.

Acknowledgments

While there were many people who helped shape this dream, first and foremost I must pause and give thanks to my Lord and Savior Jesus Christ for I am truly blessed.

To my father, John Alfred Jones, who with a sixth grade education understood the importance of getting a formal education. He always told me that college was not an option, it was a requirement. My dad (affectionately known as daddy) was my tutor from the second grade all the way through high school. It was not until after his death did I realize he was teaching himself as much as helping me.

To my mother, Elizabeth Banks Robinson Jones, who with a tenth grade education told me when I was in the 9th grade I was going to be a doctor some day. I recall looking at my mother (affectionately known as mom) and telling her, I did not want to be a doctor, I wanted to be a child psychiatrist. Little did I know that I was speaking into my future.

To my family, Stephanie Jones Weatherspoon, Khandi Jones, Stewart, and John David Jones for their unyielding support and commitment to help me succeed to reach this point.

To my nieces and nephews, and one special niece, Angela Jones, who if it were not for her two children Nicholas and Kalista this special accomplishment would not have taken place.

To my friends, and one very special friend, Kim Kirkland, who bet me one dollar in our undergraduate years that we would finish together. Kim Kirkland – we made it.

To my most very forgiving committee, Dr. Medha Talpade, Committee Chair, Dr. Anthony Perry, Committee Methodologist, Dr. Kimberley Cox, Committee URR, Walden University staff, and the Dean's office I would like to show my gratitude to

everyone who extended a supportive hand in the completion of this dissertation. You all have availed yourselves upon request and for that I will be forever grateful for your patience and review of this dissertation.

Lastly, to myself, by overcoming odds I have lived to see my greatest achievement. I was born in rural Ohio, Appalachia territory. Appalachia is a settlement that includes a body of people who are targeted by the general population as ignorant, uneducated, and living among themselves without an ability to associate with "folks" outside of their comfort zone. There are 88 Ohio counties, of which 24 are considered Appalachia. In Ohio, today, college completion rates according to the most current census for Americans is 24.4%, Ohioans 21.1%, Appalachia – 12.3%. As a Black female graduating high school and attending college in the 70's Black Americans attending and graduating from college was 2%.

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Chapter 1: Introduction to the Study

Introduction

Children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) and Dyslexia or Learning Disabilities (LD) can also be gifted and talented, which is known as twice exceptional (2E) according to the Individuals with Disabilities Education Act (IDEA, 1990, 2004) and the No Child Left Behind Act (Colker, 2011). In the recent decade, the United States education sector has been proactive in providing an inclusion setting for students with 2E because their condition requires the training of teachers who can provide appropriate teaching interventions (Bianco & Leech, 2010). Identification of 2E children is important to direct them to the available resources. Such identification is possible only if teachers are trained to do so (Montgomery, 2007).

Being diagnosed as 2E can be a detriment because it also carries the stigma of a disability (Daley, 2006). For the purpose of this study, disabilities were limited to the following: children diagnosed with ADHD, which is also considered an Emotional Behavior Disorder (EBD), and Dyslexia, also a form of LD. Zentall and Lee (2012) reported that students specifically diagnosed with ADHD and Dyslexia demonstrates a lag in an area of specific subject matter such as reading, but they excel in another subject matter such as math. For all individuals, there is an optimal level of arousal toward any relevant subject matter or information (Zentall & Lee, 2012). However, students with ADHD were known to have a greater than normal need for stimulation in order to optimize arousal (Zentall & Lee, 2012). The term twice exceptional or 2E refers to

children who are intellectually gifted and have some form of associated disability (IDEA, 2004).

According to the Center for Disease Control (CDC, 2009), characteristics of children with ADHD include inattentiveness, hyperactivity, and impulsiveness. Children with LD have a brain-based style of learning disability that impairs reading and comprehension (CDC, 2009), and children with LD also process information differently by varying degrees (NIND, 2011). Both ADHD and LD are considered neurological diseases (CDC, 2009; NIND, 2011), and children can potentially have one or both of the diagnosed disabilities, and still be considered 2E with giftedness.

The National Research Center on the Gifted and Talented at the University of Connecticut (NRCGTUC, 2012) reported that only recently it has become common to find a child with both giftedness and disabilities. It was reported that estimates showed as many as 20% of students have a disability of the 2E population, but they are never identified (NRCGTUC, 2012). Identification of the 2E children is important to direct them to the available resources; however, such identification is possible only if teachers are trained to do so.

For the first time in 2004, IDEA acknowledged the needs of 2E students by granting priority to the U.S. Department of Education to guide research, personnel preparation, and technical assistance as measured by the state's standardized testing and assessments by 2014 through the No Child Left Behind Act. Montgomery (2007) defined 2E to refer to students who are placed in a category of gifted and talented and expanded it to be identified by one or more areas of exceptionality, which includes specific

academics, general intellectual ability, creativity, leadership, visual, spatial, or performing arts. Identification of the 2E student is thus difficult for teachers and may explain the low rate of identification. This study, therefore, investigated the relationship between teacher training and referrals of the 2E students to gifted programs.

Understanding the relationships facilitated positive social change by identifying the appropriate adjustments needed for 2E students to facilitate their access to the resources associated with the gifted programs. This chapter will introduce the background, the problem statement, and the purpose of the study. In line with the purpose and problem, the research question and hypotheses and the variables to be studied will also be discussed, followed by the assumptions, limitations, and delimitations.

Background

With the increase of inclusion in today's school systems, all educators, whether novice or experienced, need to be well aware of the challenges and rewards that are set forth in front of them when having students with disabilities in their classrooms (Montgomery, 2007). Meeting the needs of students who are 2E has recently been elevated in the field of education as an important goal by supporting the view of constructivism (Leonard, 2002). Constructivism is a theory that suggests that children learn best when they use their own knowledge and memories to connect to and interact with the subject matter they are being taught (Coleman et al., 2005). Constructivist curriculum is highly individualized, and the student's developmental level is taken into consideration in the selection of curriculum and instruction. The type of curriculum that

is the most productive choice for 2E and gifted children is known as the constructivist approach (Coleman et al., 2005).

Castellanos and Tannock (2005) reported that the constructivist approach for gifted students with disabilities, or 2E, is at-risk because their educational and social/emotional needs will often go undetected. The results from this research served to bring more attention to the educational awareness for 2E students within our academic institutions. By taking into consideration these academic issues, which refer to the special needs of and challenges for students who have disabilities such as ADHD, educators can differentiate instructional methods that best meet these students' needs. There is a growing concern about the lack of training for teacher-educators to teach to 2E students. Some school districts are mandating that teacher-educators obtain gifted certification as well as certifications for special education (Hong, Greene, & Higgins, 2006). Starting in 2011, the United States accepted the ideology of mandating curriculum provisions for 2E students in the general classroom (USED, 2011). The mandates being encountered by teacher-educators are due to the increased population of 2E students in the classroom. Schools are making an attempt to gain more knowledge and to transition 2E students into gifted programs, thereby moving further away from the label of ADHD. As a result of the increase in the 2E student population, there also comes an increased responsibility for the teacher-educator to differentiate classroom instruction to address 2E student needs and to take a closer look at 2E characteristics (Montgomery, 2007).

Today, there are 2E students residing at every grade level. This raises the enrollment of the gifted class from the traditional number of 10 to 12 students upward to

14, and in some cases as high as 20 students (Shaunnessy, 2007). Therefore, it is almost essential for teacher-educators to build more creative solutions to prepare 2E students for the challenges ahead of them. These students are the leaders of tomorrow in the fields of science, technology, engineering, and math, better known as STEM, as well as other disciplines. Acknowledging the needs of the 2E students helps practitioners understand the complexity and challenges of the 2E students given their unique characteristics and traits (Shaunnessy, 2007). While most schools are supporting provisional education for students who are 2E via an array of service supported programs, the most common models of support are given to students who are directly gifted and not 2E or ADHD/gifted. However, the literature has suggested that between 2% to 5% of students who are considered gifted have disabilities and vice versa (Montgomery, 2007).

The National Association for Gifted Children (NAGC; 1998) recommended the following for teachers to better prepare themselves for the 2E student: (a) provisions for students who are gifted, (b) encouragement to policymakers and educators to consider educational provisioning, and (c) provisions to delivering better curriculum and teacher-educator awareness. However, Montgomery (2007) noted the NAGC concept is nothing more than an individual education plan, or IEP, which is a customized education intervention plan for children with disabilities. However, the IEP guides the delivery for the student by individual design for those who are considered special education and not necessarily gifted and/or 2E (Montgomery, 2007). For some 2E students, the behavior becomes the focus of intervention rather than the course of academic change. While the behavior management is put into place, the gifted talents go unnoticed for the highly

gifted. This is where school becomes frustrating for everyone, including students, teachers, educators, and parents.

Today's educators are faced with the problem of teaching to children who are considered 2E (Montgomery, 2007). Twice exceptional students who are gifted are not limited to just ADHD; they may also be identified with disabilities such as learning, emotional, physical, sensory, or autism (IDEA, 2004). Students who are known as 2E or 2X are identified as gifted and talented in one or more areas of exceptionalitiy, including specific academics, general intellectual ability, creativity, leadership, visual, spatial, or performing arts (IDEA, 2004; Montgomery, 2007). The gifted child who underachieves or cannot grasp what is happening in his or her life becomes one of the greatest losses to our society. Unfortunately, the unique needs of these students are not always met by educators. For example, if a student is diagnosed with ADHD, there is no provision that requires an assessment to determine whether they are gifted with intelligence and just bored or whether they really have an ADHD diagnosis. In the United States education system, gifted children with ADHD struggle to receive the type of education avaiialble to their gifted peers (Montgomery, 2007).

Montgomery (2007) reported that over half of children with ADHD in the mainstream classroom fail at least one grade before adolescence. As they approach high school, over one-third do not graduate. The influx of students who are considered 2E in the main classroom setting places more demands on teacher-educators who do not have the capacity or training (Montgomery, 2007). As a result, provisions for interventions are considered challenting and are often inadequate. This is not due to a lack of sensitivity for

2E students; the teacher-educators are just ill-prepared for differentiated instruction (Hong et al., 2006). While reviewing the plethora of intervention methodologies and assessments, there are very few which recognize the related issues for 2E children. As a result, the lack of processes both in and out of the classroom demonstrated the need for this research.

The critical point in 2E children is the development and encouragement of a positive self-concept (Bianco & Leech, 2010). For example, if a student has a disability or disorder, he or she often expresses feelings of failure or exhibits low-self esteem. Even a brilliant 2E student will be self-convincing that he or she is just "stupid" (Bianco & Leech, 2010). A child who exhibits intelligence, and possibly extraordinary intelligence giftedness, may have extreme difficulty in school; as a result, performing at grade level is very difficult.

The focus for the teacher-educator within the educational system should be the provision of a quality and equitable education for all students, which includes 2E students. In most cases, 2E students with unique characteristics such as disabilities are considered special populations, which excludes them from being admitted into the gifted and talented developmental services (Montgomery, 2007). When teacher-educators begin to identify the characteristic behaviors and psychological makeup of 2E students and to avoid having options of creating labels of special education, it will increase the likelihood that remediation will put into place, students will no longer fall through the cracks, and they will start to achieve at grade level and higher. Moon, Swift, and Shallergerger

(2002) reported that teacher-educators are accountable for the promotion and growth of 2E students by delivering a differentiated modified curriculum.

Problem Statement

The gap in this area of research is related to the level of teachers training and the relationship of 2E referrals into gifted programs for the proper delivery of instruction.

Teachers in the inclusion classroom have the eminent role to uplift self-esteem, develop sequential ability, decrease the attention of deficit problems, and replace the skipping deficit of students with specific learning difficulties (Allison, 2011; Kazmi & Pervez, 2011). Recognizing these roles forced the United States government to provide measures for identifying children with learning disabilities to appropriately provide an environment conducive for learning (Colker, 2011; Hauerwas, Brown, & Scott, 2013). While there is available measurement and teachers' training in the identification of students with learning disabilities (Lecavalier, Gadow, Devincent, & Edwards, 2009; Tariq, 2010), little is known concerning how this knowledge and training of teachers are related for referrals of 2E students (Dapudong, 2013; Wellington & Stackhouse, 2011).

The influx of students who are considered 2E in the main classroom setting highlights the need for proper training in terms of handling 2E students in the classroom (Montgomery, 2007). As a result, provisions for interventions are considered challenging and often inadequate. This study reported whether there is a relationship between specialized teacher training and their ability to diagnose and refer 2E students to gifted programs.

Purpose of the Study

The purpose of this quantitative study was to investigate the relationship between teacher training and 2E student referrals. The variables of interest were type of teacher training and frequency of referrals of 2E students into gifted programs. Due to the limitations within each classroom, teacher preparation and training is paramount to understand the necessity of student referrals and recommendations of interventions for 2E children. This study explored the level of educator preparedness to identify and meet the learning needs of children who are gifted with combined 2E characteristics, such as ADHD. Students who exhibit 2E behavior can be challenging for a teacher-educator if he or she is not adequately trained or prepared to understand children with ADHD (Montgomery, 2007). For some educators, they may only recently have heard the term “twice exceptional,” “2E” or “2X,” and some may not even know what it means (Bianco & Leech, 2010). Identifying 2E students can be problematic because their strengths may camouflage their weaknesses, while their weaknesses hide their strengths (Graham, 2007). In most cases, the 2E student’s disability affects their ability to show their gifted talents (Montgomery, 2007).

Just because students have disabilities does not mean they are not gifted. Currently, 2E characteristics confuse the situation, making appropriate interventions more problematic. This study sought to better understand the relationship between the type of teacher training and its relationship to referrals of teacher-educators of 2E students to gifted programs.

Research Question and Hypotheses

This quantitative study aimed to investigate the relationship between teacher training and 2E student referrals to meet the learning needs of 2E children. Guiding the conduct of this study are the following research questions and hypotheses:

RQ1: Is there a relationship between type of teacher training and referral of a 2E student described in a hypothetical vignette?

H₀1: There is no significant relationship between type of teacher training and referral of a 2E student as measured by a referral response to a hypothetical vignette.

H₁1: There is a significant relationship between type of teacher training and referral of a 2E student as measured by a referral response to a hypothetical vignette.

RQ2: Is there a relationship between type of teacher training and the self-report of number of 2E students referred to gifted programs during the previous year?

H₀2: Teacher training has no significant relationship to the number of 2E students referred to gifted programs as measured by self-reported number of referrals made during the previous year.

H₁2: Teacher training has a significant relationship to the number of 2E students referred to gifted programs as measured by self-reported number of referrals made during the previous year.

Variables

Teacher training

Teachers identified their type of training from among the following types with relationship to teaching gifted children according to the following testable research

question: “What types of training are needed to give referrals of 2E students into gifted programs?: (1) no training, (2) specialized seminar, (3) internship training, and (4) certified”.

Referrals

Teacher referrals were measured with the following question: “How many students did you refer to gifted programs during the past academic year?” The option for this question was designed to contain an open-ended response for numerical data.

Referrals were also assessed by teacher responses to a vignette based on the previous study by Bianco and Leech (2010) describing a student known as “A.K.” (Appendix E), who was not labeled as EBD or gifted. Teachers responded to questions about the vignette, on a Likert-type scale ranging from *strongly agree* to *strongly disagree*. The key responses on this scale were collapsed into a dichotomous response, with *strongly agree* and *agree* being coded as a “Yes” and *strongly disagree* and *disagree* being coded as a “No” for referral. Thus, a chi-square non parametric test was used to test the hypotheses.

The analyzed data and specific methodology used to collect and formulate the results of the data collection are presented in Chapter 3. The research questions and hypotheses were analyzed with SPSS 22.0 for Windows. Descriptive statistics were conducted to describe the sample population. Frequencies and percentages are presented in Chapter 4 for gender, age, teaching assignment, and highest degree earned. Means and standard deviations are presented for number of years of total teaching experience.

Theoretical Framework

The theoretical framework for this quantitative study was optimal stimulation theory (OST), which seeks to explain the role of stimulation modulation in the behavior of disordered children (Zentall & Zentall, 2010). OST is a feedback model for arousal theory based on the assumption that response output functions homeostatically to regulate the level of stimulus input of students with behavior disorders and learning disabilities, that is, students who are 2E (Hoover, 2011).

The theory of OST postulates that the individual maintains the needed stimulation for cognitive and behavioral functions (McAllister, 2012). While normal students strive to maintain the normal functioning of learning arousal, students with learning disabilities particularly those with ADHD, had difficulty maintaining a similar level of learning arousal as others do from similar learning sources (Chitiyo, Makweche-Chitiyo, Park, Ametepee, & Chitiyo, 2011). Children with ADHD in particular tend to crave high stimulus situations, are usually emotionally volatile, and may not have much awareness of their impact on others (Odom, Buysse, & Soukakou, 2011). Teachers who may suspect ADHD students in the classroom reinforce good behavior, implement flexible approaches, and use continuous learning segments with little verbal instruction to keep students on-task (Fallon, Zhang, & Kim, 2011).

The study for this particular research focused on OST or arousal theory, which aids educators in identifying 2E students who are ADHD and gifted. Zentall (2006) stated that arousal theory evaluation is done through a psychological measure that translates into an arousal that cannot be observed. This study also provided substance as an appropriate

intervention to include educational training (educators) and curricular modifications for referrals that develop the uniquely gifted and talented abilities of 2E students and at the same time accommodate behaviors associated with ADHD and learning disabilities (Montgomery, 2007).

If a child is diagnosed with ADHD, there are further assessments to evaluate his or her intelligence by recommended professionals such as school psychologists. As it relates to ADHD and gifted students (2E), a number of different theories could be used to understand the 2E characteristics (Graham, 2007). These theories can be helpful for the diagnosis of ADHD, but there is some doubt whether they are true and testable. Three of the nine ADHD characteristics considered useful for the diagnosis of ADHD for EBD are inattention, hyperactivity, or impulsivity, and each one relates to theory models.

According to Zentall and Javorsky (2007), for students diagnosed with ADHD, many times, the teacher will become compassionate and show empathy towards these individuals diagnosed. Zentall and Javorsky (2007), presented their theory based on specific classroom data to include curriculum for ADHD students who were considered special education or slow learners and intervention therapy, which deals with student IQs of about 90. Additionally, the lack of teacher training for referrals, which was the focus of this research, does not include interventions for 2E students; this study dealt with 2E students who test with IQs that range from 125 to 140. Based on the concepts of OST and arousal theory, training affects teachers' identification and assessment of a particular special need. In this study, the objective was to determine whether the relationship of training would enable teachers to identify and refer 2E children to gifted programs.

Nature of the Study

This study investigated the relationship between the type of teacher training and referral of a 2E student into a gifted program, and between the type of teacher training and the number of 2E students referred into gifted programs. Because the study sought to study relationships of variables and perform hypothesis testing, a quantitative method was more appropriate than a qualitative study. The survey method is useful to identify relationships between variables. The specific quantitative method selected was an electronic survey method to allow ease of access and response for the participants. The variables in this study were (a) the type of teacher training, (b) referral of the student described in the vignette to gifted programs, and (c) number of 2E student referrals. Data were collected through a convenience sample of teachers at a K-12 school for general education, gifted instruction, special education, and certified in one or more of the aforementioned classrooms. I delivered the surveys to 400 teacher participants through electronic medium (Qualtrics), which contained the following documentation: (a) a brief explanation of the general purpose of the study and instructions for participation, (b) letter consenting school participation, (c) consent forms, (d) demographic data sheet, (e) vignette, (f) survey instrument, and (g) questionnaire for training. Analysis of the data were conducted using chi-square analysis performed using SPSS 22.0.

Definitions

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. Webb and

Amend (2005) defined ADHD, in relation to the DSM-IV-TR definition, as a condition of incidents found to be more prevalent in young boys, specifically school age children. CDC (2009), defined ADHD as someone who (a) lacks attention to detail, (b) is easily distracted, (c) does not listen, (d) lacks follow through, (e) is unorganized, (f) lacks focus, and (g) is forgetful, which are all identified as core symptoms which includes inattention, impulsivity, distractibility, and hyperactivity (APA, 2000; CDC, 2009).

Behavior disorder: In the context of this study, behavior disorder was defined as a student who is diagnosed with ADHD, yet has a gifted intelligence, not necessarily just ADHD.

Dual diagnosis: This is a term that is often 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, & Lykke, 2011).

Gifted: 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 directly associated with academics (Freeman, 2001).

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, person, and interpersonal skill, visual, and performing arts or any combination thereof (Gardner, 1991).

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 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).

No Child Left Behind(NCLB): NCLB is 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 considered the federal law that impacts K-12 education.

Referrals: Referral is the variable used to measure the teacher's act of referring 2E students with disabilities into gifted programs. This was assessed as the referral response to the vignette as well as the number of students referred to gifted programs annually.

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.

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, while exhibiting the stronger trait (Bianco & Leech, 2010).

Assumptions

Several assumptions were taken into consideration as related to this study. It was assumed that the data collected and reported from each of the teachers would be a response without bias. For purposes of this study, the assumptions are listed below:

- The surveys were an appropriate technique for data collection.
- The surveyed participants were a representative sample of teachers in the general K-12 education setting engaged with gifted children and children with disabilities.
- The participant responses were recorded in a valid and reliable manner to ensure no researcher bias would affect data gathering and documentation.

Scope and Delimitations

Scope

The study included teachers working with children in the general K-12 education setting. The teachers were surveyed according to the type or level of training they received when working with children who are diagnosed with ADHD and considered 2E. The teachers were selected for the study from a group of participants who either interact or teach children in the general education setting to yield an understanding of their perceptions and practices within the mainstream classroom.

Delimitations

The study was confined by the choice of site and the convenience sample. As a result, the study may not be generalized to other schools. The following delimitations are noted:

- The survey was distributed to teachers in one school setting and one school system.
- The survey was extended to teachers who only worked in elementary education.
- The research for the study was performed for 3 months within 1 academic school year.
- The study focused on the attitudes and beliefs of general education teachers.

Limitations

There were limitations to the current research study. First, the teachers surveyed provided instruction to gifted students in mainstream classrooms. Second, the study focused on how teachers who work with children with disabilities differentiated instruction without any framework or certified knowledge in the general education setting. Third, the convenience sampling of participants for the study provided data to yield a better understanding of the referral practices and decisions of general education teachers about students within the elementary school level who are comingled with gifted students in the classroom.

The research consisted of a survey which may affect the following:

- Interpretation of the questions,
- Bias in teacher responses,
- Attendance the day of the survey,
- Null responses to the survey,
- Willingness of participants, and

- Responses at different grade levels.

Included in the limitations of the study were threats to validity (Creswell, 2009; Podsakoff, MacKenzie, & Podsakoff, 2012). One threat to the external validity or the generalizability of this study involved determining whether the teachers' responses to the vignette about the referral were related to actual referral. Moreover, threats to the internal validity of this study may have included the following: (a) participant selection bias because only those who feel strongly about referring students to the gifted programs participated, and (b) attrition as some participants may have decided to not complete the survey.

Significance of the Study

The significance of this research was that it served to provide a deeper understanding about the role of training of educators for 2E students. It was an effort to demonstrate that identification of the 2E students and its related factors is important. It is important to delve into the instructional practices that are delivered to 2E students and provide professional development as it relates to curricula, learning styles, instructional strategies in the classroom, and necessary interventions. Overall, the instructional practices used for students who are 2E are guided according to the diagnosis of the student, either ADHD or gifted, but not as a combined condition (Montgomery, 2007). It is important for educators and professionals to maximize identification and instructional strategies for 2E students in order to better address their special needs and guide them properly in their academic progress. The results of this research served to help teacher-educators and educational personnel to recognize the best way to identify and help 2E

students. Twice exceptional students are gifted, so they need challenges to strengthen their gifts, yet their unique situations require interventions and educators who are trained to nurture their academic and social development (Baum & Olenchak, 2002).

Social Change Implications

The United States is the leader of the free world, making strides for social change. Therefore, schools should be the priority, and teacher-educators should be viewed as the social change agent leading children into the future (Shaffer, 2005). Making changes in the school's learning environment affects positive social change as teacher-educators have a strong influence toward student achievement in the general classroom. By ensuring America's future, teacher-educators need to maximize the learning power in the general classroom for 2E students (Montgomery, 2007).

In regard to the different strategies of learning and assessment, recent studies are beginning to demonstrate that children who are 2E learn better in localized environments (Park Academy, 2010). The results of the current study revealed information to aid teacher-educators or leaders in education with information to make specific recommendations in an attempt to identify the educational needs of 2E students.

Summary

The United States education system provides an inclusion setting for students who are exceptional yet with learning disabilities, particularly those diagnosed with ADHD and dyslexia (IDEA, 1990, 2004; Zentall & Lee, 2012). While children can potentially have one or both of the diagnosed disabilities and still be considered 2E with giftedness (NRCGTUC, 2012), identification of these students has been a challenging task for

teachers. Identification of the 2E children is important to direct them to the available resources; however, identification is possible only if teachers are trained to do so (Guarino et al., 2006; Montgomery, 2007).

While research has shown that most referrals are based on assumptions in the classroom according to behavior, it should also be noted that research indicated teacher training significantly increases a more accurate identification of the 2E student (Bianco & Leech, 2010). The knowledge and training of teachers have an effect on the differentiating instruction for the students with disabilities (Allison, 2011). Teachers develop receptiveness when appropriate training and administrative support are provided (Allison, 2011). It is essential that teachers are trained in the skills and strategies to support behavior management in the classroom as well as the ability to differentiate instruction for students with special needs (Akalin, Sazak-Pinar, & Sucuoglu, 2010).

Chapter 1 presented the problem associated with the need to train the teachers in the identification of students with learning disabilities and the accurateness of the referral system in providing appropriate learning modalities for students. The chapter discussed the background of the study, the purpose, the research questions, definitions of the terms, assumptions, delimitations, and limitations of the study. These sections guided the conduct of the study.

In the subsequent chapters, a review of the literature concerning the study, the results of the study, and the discussion for future impact will be presented. In particular, in Chapter 2, there is a review of the known empirical information about children who are 2E and government provisions to meet the learning needs of these students. In Chapter 3,

the quantitative study to collect the data from the participants of the research questions is presented and the background of the methodology used for the research. . The findings of the study are presented in Chapter 4, , and in Chapter 5, the data results collected from the study are presented as a discussion concerning the implication of the outcome.

Chapter 2: Literature Review

Introduction

The empirical literature on children who exhibit 2E behavior details the challenges among educators to effectively identify and refer them to the appropriate support systems. Twice exceptional students are children with distinctive or exceptional learning needs who show a pattern of extreme strengths combined with areas of significant difficulty (Montgomery, 2007). Children who are diagnosed with emotional and behavior disabilities (EBDs) such as ADHD and Dyslexia, also known as LD, for learning disabilities, and at the same time defined as gifted are considered 2E (IDEA, 2004). For children who are known as 2E students, there are teaching modalities that will enhance learning and academic success through IEP plans, curriculum modifications, tutorials, and interventions. However, the levels of educator preparedness to identify and meet the learning needs of children who are gifted with combined 2E characteristics such as ADHD may be limited within each classroom (Montgomery, 2007). Meeting the diverse needs of the 2E students, educators must use differentiated instruction.

Because 2E students present a unique identification and a service delivery dilemma for educators, the challenge to recognize their differences forces an awareness for educators to make choices by choosing an exceptionality, thus leaving the 2E student both under identified and under served in today's schools (Brody & Mills, 2007). Gallagher and Gallagher (as cited in NEA, 2006) wrote, "Failure to help the gifted child reach his potential is a societal tragedy; they are the difference between what we are, and what we could be as a society" (p. 5). If teachers do not have an understanding of the 2E

student, the emphasis to develop a comprehensive educational plan or an integrated curriculum model for a 2E student does not build on the improvement of education in the heterogeneous classroom. There needs to be an emphasis to focus upon a student's strengths as well as their challenges (Gallagher & Gallagher, as cited in NEA, 2006).

Research has suggested that there should be strategic educational planning for a continuum of services. The planning of the continuum of services should include the identification of the student's strengths, abilities, challenges, and concerns (Graham, 2007). It is important to recognize 2E students because they are found within every socioeconomic, cultural, racial, and ethnic population present in most classrooms. Regrettably, at this time there is no federal agency or organization that collects 2E statistics, resulting in a lack of available empirical prevalence data. Without appropriate education and services, 2E discoveries, innovations, breakthroughs, leadership, and other gifts to American society go unrealized (NEA, 2006).

The purpose of this quantitative study is to investigate the relationship between teacher training and 2E student referrals. In this chapter, I present known studies that are relevant in exploring the level of educator preparedness to identify and meet the learning needs of children who are gifted with combined 2E characteristics. This chapter contains 10 sections: (a) literature search strategy, (b) background and history of students with special needs, (c) methodologies of existing studies on twice exceptional students (d) history of twice exceptional gifted students, (e) history of ADHD, (f) history of gifted with intelligence, (g) teacher educators, (h) theoretical orientation, (i) teacher training and identification of the twice exceptional child, and (j) chapter summary. The sections shed

light on information that could be added and further explained using the results of the present study.

Literature Search Strategy

The research studies chosen for this literature review focused on evidence that 2E students can be both gifted and disabled simultaneously, and the limited awareness (or lack thereof) causes many school systems not to provide services to students who are 2E. It was reasonable to assume the cause is due to (a) inadequate educator training, (b) lack of identification procedures, and (c) inappropriate educational experiences that would allow educators to teach the whole child (Montgomery, 2007).

The keywords used to conduct the literature search were *twice exceptional, 2E, 2X, ADHD, EBD, twice gifted, gifted with disabilities, education, special education, classroom, barriers, teacher training and teacher certification*. The initial search yielded a total of 92 articles. After including additional keywords such as *IDEA, characteristics of twice exceptional, 2E and ADHD, curriculum for 2E, gifted children, 2E children, what is 2E and giftedness, 2E interventions, twice exceptional, and working with 2E students*, an additional search yielded 10 articles, some of which were actual research studies, and others that were descriptive articles or summaries. Additional search criteria for the terms *teacher training, teacher groups, special education, general education classroom, and correlation study* yielded an additional 16 articles. Included in the findings of this literature review were three dissertation studies because each of the publications was between 2010 and 2011.

Out of the 102 articles and studies reviewed for this dissertation, there were 74 chosen for this review. Each of the articles represented research methods to include (a) qualitative methods, (b) case studies, (c) quantitative studies, (d) two mixed methods, and (e) longitudinal studies (multiple) that spanned over a period of 9 years to include short-answer questions. The interviews of the participants were face-to-face and conducted in a qualitative manner (Montgomery, 2007); of the quantitative methods, the studies employed standard surveys either by regular mail or via an online website (Stevenson et al., 2005; Zang et al., 2002). The studies included various educational settings, home environments, or the office of the psychologist (Bianco & Leech, 2010; Guarino, Santibanez, & Daley, 2006).

The EBSCO Host service through Walden Research Library was used to search multiple databases for relevant research studies. Out of the variety of databases that were available, this research included the following: ERIC, Medline with Full Text, Mental Measurements Yearbook, Sage Publishing, PsycARTICLES, PsycBOOKS, PsycCRITIQUES, PsycEXTRA, PsycINFO, and Teacher Reference Center. The selection of literature was relatively current, not older than 10 years, with most articles appearing within the past 5 years. Therefore, the range of dates for the dissertation research was between 2000 and 2011, with the majority of literature published between 2005 and 2011. Another source of valuable information articles included the American Psychological Association (2013).

Background and History of Students With Special Needs

The rules for defining 2E students are similar to walking a tight-rope to make a perfect balancing act. According to law (ODE, 2005), 2E students must conform to a set of rules that include discussions of the services that should be provided to them. As a result, it is highly recommended that teachers as well as administrators who are involved in the identification process be adequately prepared and trained in the unique needs of the delivery for 2E students (Rizza & Morrison, 2007). However, teachers are often confused because there are situations where the diagnosis is complicated by the fact that the student's areas of ability and disability mask each other (Bianco & Leech, 2010).

Methodologies of Existing Studies on Twice Exceptional Students

The research reported by Montgomery (2007) consisted of a mixed method approach, which included a longitudinal study. The target audience included educators who taught or had exposure to students diagnosed with ADHD and gifted intelligence, thus targeting who is ADHD and who is gifted. Baum and Owen (2004) used the qualitative method of interviewing to determine whether students were 2E. In the research, Baum and Owen studied children who were 2E to determine how to build a foundation that would allow them to rise to eminence because of their exceptionality. They conducted interviews with parents, teachers, and students that focused on gifted children from special populations, such as 2E students who were (a) gifted and at risk for development due to learning and attention difficulties, (b) gifted with emotional disorders, and (c) gifted and economically disadvantaged, which resulted in published peer reviewed articles.

In Montgomery's (2007) research respondents were drawn from a single school district. The school teachers and counselors handled the identification of the selected students and contacted the parents to ask their permission as approval or denying the involvement of their children. There were three students identified as 2E according to characteristics displayed as asynchronous development and who were able to meet the criteria for the schools gifted program. Three male students who were clinically identified as ADHD by a certified physician and placed on medication represented the general education classroom.

VanTassel-Baska et al. (2009) examined the profiles of students considered gifted academically with the following prototypes: low-income students (White, African American, and minorities), and high nonverbal and low verbal students, as well as 2E students. There were a total of 37 vignettes developed and analyzed based on interviews with selected students, their teachers, and parents. The research consisted of cross prototype themes. The results of the research suggested the implementation of a gifted program with a significant impact on children with special needs identified through both traditional and alternative assessments. There was an impact that suggested the power of a gifted program with higher skill levels for building self-confidence for communication and thinking. According to research outcomes reported by VanTassel-Baska et al. (2009), the purpose was qualitative as a follow-up to prior quantitative analyses. Guiding the typologies for this particular audience of sub analysis were low income 2E students.

In the research methods according to Baum and Owen (2004), the participants of this study were 2E and special populations of 2E students. There were three populations:

(a) 2E students who are gifted and at risk for development because of their inability or difficulty in learning and attention, (b) gifted with gender issues that inhibits their ability to function socially, and (c) gifted and at risk of school drop outs along with a low socio economic status. Baum and Owen (2004) believed that far too many students who are considered gifted but carry the nontraditional status will continue with an underrepresentation in programs for gifted and talented students, due to the lack of appropriate programs with approved interventions. Baum and Owen labeled the participants for this research as gifted students at risk. The outcome of this research suggested that schools create an environment for gifted students who may be considered hostile, or in other words, exacerbating the appearance of a child who has ADHD behavior tendency. The research suggested that the appropriate diagnosis should depend on assuring the learning environment aligns with the students' learning style or in this case giftedness (Baum & Owen, 2004).

History of Twice Exceptional (Gifted Students With Disabilities)

2E children can be recognized as gifted and talented children who are diagnosed with ADHD, which is defined as a disability under the Individuals with Disabilities Education Act (IDEA; 1994, and reauthorized in 2004). For the first time in 2004, IDEA acknowledged the needs of 2E students by granting priority to the U.S. Department of Education to guide research, personnel preparation, and technical assistance as measured by the state's standardized testing and assessments by 2014, through the No Child Left Behind Act. According to research conducted by Montgomery (2007), 2E students refers to children who are placed in a category of gifted and talented identified by one or more

areas of exceptionality, including specific academics, general intellectual ability, creativity, leadership, visual, spatial, or performing arts. The few research studies that supported the guiding principles of 2E students were defined as anecdotal evidence as identified by the Children's Defense Fund (2008).

Even with the mounting literature that describes the gifted students and EBD, little has been published to describe the 2E characteristics and needs of their gifted ability (Bianco & Leech, as cited in Morrison & Omdal, 2000). Over the years, various case studies have described an emerging profile in an attempt to aid the education of students categorized as 2E with EBD and gifted (Bianco & Leech, as cited in Morrison & Omdal, 2000).

Much of the literature and research has exhibited an over reliance on negative characteristics with an omission of positive traits that could conceivably combine the positive and successful characteristics for 2E students who are described as EBD (Bianco & Leech, 2003). Bianco and Leech (2010) reported in their research about a student who was not especially smart or intelligent at school, yet the student received straight As on his progress report and scored in the Very Superior range on the Wechsler Intelligence Scale for Children (WISC-IV) – Fourth Edition (Kaufman, Flanagan, Alfonso, & Mascolo, 2006) Achievement Assessment; prior to the WISC-IV exam, the school diagnosed the student as EBD, and after the student received high marks on the exam, the school considered the student gifted.

For children who are diagnosed emotional and behavior disabilities (EBDs) such as ADHD and Dyslexia, also known as LD for learning disabilities, and at the same time

defined as gifted are considered 2E (IDEA, 2004). Over the past 2 decades, the literature on children with ADHD and gifted abilities of 2E children supports research for the pedagogical teaching of gifted and special education children. However, educational and social emotional needs for these unique students remain in a condition of flux and are not being met (Weinfeld, Barnes-Robinson, Jeweler, & Roffman-Shevitz, 2006). The unfortunate situation of 2E students is that they are faced with a culture that provides only remediation for an intervention without enrichment. Academic success is indeed possible when educators focus on strengths rather than weaknesses, and when 2E students are provided appropriate coping strategies to meet their needs (Montgomery, 2007). When a child is considered 2E, the studies by VanTassel-Baska, Feng, Quek, and Struck (2004) and Montgomery (2007) reported that the consideration for cause is sometimes race dependent with minorities being diagnosed with ADHD and Whites (Caucasians) being considered gifted.

History of ADHD

Hoffman first described ADHD in 1845 (Gerada & Ashforth, 1997). No one knows the exact cause of ADHD. It may be partially heritable, it may be lead exposure, and brain injury is another concern as well as food digestion and additives. ADHD is a medical term that describes a pattern of behaviors associated with particular symptoms such as inattention, impulsiveness, and hyperactivity (Gerada & Ashforth, 1997). This medical hyperactivity became visibly described as “mental restlessness” during the 18th century by Sir Alexander Crichton (as cited by Finger & Palmer, 2001). Over the years, the phrase endured many changes such as “minimal brain damage, minimal brain

dysfunction, learning/behavioral disabilities, and hyperactivity” (Finger & Palmer, p. 1). Although Sir Crichton is noted for identifying the symptoms, in the 20th century, George Still, a well-known pediatrician, is noted for taking the reviews and forging them into practice (Finger & Palmer, 2001). ADHD has evolved through multiple interpretations depending on who was interpreting and which agency is supporting the interpretation. However, for the past 50 years, it has remained consistent with a core set of symptoms including “impulsivity, inattention, and motor restlessness, with earlier terms like minimal brain dysfunction, hyperactive child syndrome and attention deficit disorder” (Guarino et al., 2006, p. 1).

In 1968, the American Psychiatric Association’s Diagnostic and Statistical Manual (DSM) published the DSM-II introducing the disease as “Hyperkinetic Reaction of Childhood” (Finger & Palmer, 2001, p. 1). After further study of the disease, the DSM III changed the name to ADD or Attention Deficit Disorder, which left many to believe it could be identified with or without the level of hyperactivity. In 1987, the DSM-III-R and subsequent versions have noted the hyperactivity and restlessness as ADHD that follows suit with the most current version of American Psychiatric Association’s Diagnostic and Statistical Manual-IV, Text Revision (DSM-IV-TR), released in 2000 (Finger & Palmer, 2001), and supported the theory of Sir Alexander.

Further studies demonstrated that there has been a ten-fold increase in the number of children diagnosed with ADHD (Graham, 2007). ADHD is described as one of the most common mental disorders affecting between three to five percent of children under seven years of age (CDC, 2009). For children who are considered 2E, the referral factor

is mixed depending on their race according to the Montgomery (2007), VanTassel-Baska et al. (2009), and (Baum & Owen, 2004) studies.

According to Montgomery (2007), VanTassel-Baska et al. (2009), and Guevera et al. (2005), minorities are not treated with an equal due process when 2E is a diagnosing factor; and it will not be fixed in any short time frame. Guarino et al. (2006) also supported this research by suggesting the inclusion of an additional factor, possibly school or home as a condition to reduce the number of Caucasians who are receiving a diagnosis of gifted and minorities who are receiving a diagnosis of ADHD.

In 1937 psychologists introduced the use of medication to treat the cause of emotional disorders which remains a controversy today (Finger & Palmer, 2001). However, in 2006, Daley's research compared the balance of psychosocial counseling with the combined efforts of medication to determine the outcome of the core symptoms either alone or together from the Multi-modal Treatment Study of ADHD (MTS). Guarino et al. (2006) reported, "Interventions for ADHD are a relatively controversial topic, and dominated by the results of the MTS" (p. 6).

Palmer and Finger (2001), along with Guarino et al. (2006), and other researchers as early as 1978 all shared a common conceptual understanding about ADHD as the fundamental behavioral and neuropathological deficit for an underlying disorder. For the researchers the depictions and etiological theories were similar to describing ADHD as a mental illness or an excessive hyperactivity, inattiveness, and impulsive disorder.

History of Gifted With Intelligence

The word gifted is used in several ways in American society; the meaning carries different associations to different people; it is complex and often controversial (Davis & Rimm, as cited by Hobson & Bianco, 2011). Gifted influences physical, cognitive, and socio-emotional development. Most people have an intuitive notion of what defines the term gifted and the use within the English Language to distinguish between different levels of giftedness sets apart intellectual skills such as smart, slow, bright, dull, and stupid. When a person is considered gifted, a person is considered intelligent. Referencing intelligence is usually a comparison to an assessment or an intelligence score (Kaufman, Flanagan, Alfonso, & Mascolo, 2006). The question seems to remain whether or not intelligence is the property of the brain, set of knowledge and skills or does intelligence have several independent systems of abilities (Delisle, 2006). However, there does not appear to be a universally accepted definition of intelligence that exists and educators as well as psychologists continue to debate what intelligence is exactly (Davis & Rimm, as cited by Hobson & Bianco, 2011).

Intelligence is an umbrella term used to describe a property of the mind that encompasses many related abilities such as the capacities to reason, comprehending ideas to use language, to plan, to solve problems, to think abstractly, and to learn. Environmental and heredity factors contribute to intelligence and its development. Intelligence influences physical, cognitive, and socio-emotional development, and according to Delisle (2006) provides the student who is identified with gifted characteristics such as intelligence to remain in a silo of elitist culture.

Teacher Educators

Bianco and Leech (2010) reported that frequently cited research articles noted lack of teacher training as obstacles in the fight for effective student referrals (as cited in Baum, Owen & Dixon, 1991; Clark, 1997; Cline & Schwartz, 1999; Davis & Rimm, 2004; Johnson et al., 1997). Yet, there is an ongoing practice to call upon and include these same teachers to utilize their most commonly used screening methods for student referrals as teacher's observations and nominations. Teacher-educators have an uphill battle with the identification of 2E students, because trying to work with the disability is problematic (Guarino et al., 2006). These are the issues which create difficulty, because the population of 2E students are not easily identifiable, as a result they are randomly included in the standardized assessments (Finger & Palmer, 2001). The current assessments, and process for checklists are very inadequate, and do not have a standard measurement (Montgomery, 2007). The process is not limited to children who are ADHD, but also children who are diagnosed with a learning disability with the potential to use high-level vocabulary, but is not able to create the same expression in writing. Students with disabilities can be brilliant, creative thinkers; yet frustrated, due to a different thought process (Graham, 2007). Teacher judgment for setting student referrals has consistently demonstrated that lack of adequate training for teachers does not accurately identify the 2E student in the classroom (ODE, 2005). While research has shown that most referrals are based on assumptions in the classroom according to behavior, it should also be noted that research indicated teacher training significantly increases a more accurate identification of the 2E student (Bianco & Leech, 2010).

Special Education Teacher

When it comes to the special education teacher, the training and teaching style of the teacher is typically identifying and working with children who have disabilities (Tomlinson, 2003). These children do not have characteristics of students with giftedness. As a result there is a focus that may prohibit any recognition of noticeable strength for the gifted student, because the teacher is concentrating on the detection of the disability while establishing some type of remediation (Bianco & Leech, 2003). The Children's Defense Fund (2008) reported that students with disabilities are generally under-represented in gifted programs or classrooms (as cited in Coleman, Gallagher & Foster, 1994; Johnson, Karnes & Carr, 1997).

Gifted Education Teacher

Similar to the likes of special education teachers, gifted education teachers have little to no training in the classroom or characteristics of children with disabilities (Shaunessy, 2007). Very few classroom teachers have the training to recognize the characteristics of students who are gifted (Park Academy, 2010). If there is an obscurity of teacher capacities to identify the gifted abilities of students beyond disabilities, there will be many gifted students with disabilities who will remain unidentified and unserved due to the misconceptions of gifted students and biases toward students with disabilities (ODE, 2005).

The general education teacher is probably the most important role when relating to students in academia. The general education teacher documents the incoming learning style and behavior pattern or characteristics while examining the work of the student and

guiding information for assessments (Kaufman, Flanagan, Alfonso & Mascolo, 2006). When a student is noted as having a disability, there is a referral into special education services the general education teacher will participate and become involved in the decision making of an appropriate goal and objective for the student (Bianco & Leech, 2010). Unfortunately for the student with disabilities, (Minner, Prater, Bloodworth & Walker, 1987) research demonstrated that general education teachers held biases toward students with disabilities for referrals into the gifted programs. General education teachers are considered a valuable contribution in the initial review and assessment of students with disabilities and gifted students. Therefore, Montgomery (2007) reported that further research toward additional training was necessary to reduce their bias on the effect of their willingness to refer students with disabilities to gifted programs.

Theoretical Orientation

Early research on the learning disability of children explored the type of motivation and levels of motivation required for students even with learning disabilities to function and process the information required for learning (Al- Khateeb & Hadidi, 2010). Two of the most renowned theories in explaining the motivations of learning among students with disabilities include Strauss and Lehtinen's (1947) overflow theory and the Optimal Stimulation theory

Strauss and Lehtinen's (1947) overflow theory to account for the excess activity attributed to hyperactive children, assumes that an increase in stimulus input will result in corresponding increase in response output. Strauss and Lehtinen postulated that the behavior of hyperactive children is a reaction of the stimulation that exceeds beyond the

child's processing capacity. The theory focuses on the overflow of stimulus input that is manifested only in the stimulus output. In this theory, hyperactive behavior of children is random, undirected, and uncontrolled.

However, as years of clinical and educational management of hyperactive children practices evolved and that assumption of hyperactive behaviors is due to the overstimulation of input stimulus (Tariq, 2010), scholars such as Zentall (1975) postulated that that hyperactive behavior may result from a homeostatic mechanism that functions to increase stimulation for a child experiencing insufficient sensory stimulation. Zentall (1975) Optimal Stimulation Theory was designed as a feedback model based on an assumption that output could be regulated with the functions of output (Lecavalier, Gadow, Devincent, & Edwards, 2009). It is suggested that the effectiveness of drug and behavior therapies, as well as evidence from the field of sensory deprivation, further support the theory of a stable mechanism that attempts to optimize sensory input.

Several studies concerning the educational management of students with learning disabilities utilized theory of optimal stimulation. McAllister (2012) used the theory of optimal stimulation to propose the need for self-stimulation in managing the completion of tasks among students with learning disabilities. McAllister opined that teachers' indicators concerning task completion before, during, and after the lessons could stimulate arousal among students.

Sagvolden, Johansen, Aase, and Russell (2005) utilized the OST to postulate the need of educators to adjust with the students' limitations and to maximize the students' potentialities to create optimal learning environment. Sagdølven et al. (2005) claimed that

positive behavior intervention could be used by teacher educator in guiding these students reach their optimum mental capacity. Shillingford-Butler and Theodore (2013) similarly used OST in identifying appropriate strategies in managing the behavior as well as the learning of students with ADHD. These authors postulated that hyperactive behaviors of students are to be managed and controlled in a way that could best meet their optimum learning competencies.

Optimal Stimulation Theory

Zentall (2006) defined arousal theory as only evaluated through psychological measures which translates into an arousal that cannot be observed. Therefore, the most admired of arousal theories according to Zentall (2006) is the optimal stimulation theory (OST). According to Zentall (2006), children who are diagnosed with ADHD change activities on a more frequent basis to allow for more brain stimulation. If the brain stimulation activity is sufficiently stimulated, there will be less repeated activity. Children who are diagnosed with ADHD have a constant need for additional arousal beyond the normal desire to focus. OST will aid educators in identifying 2E students and provide an appropriate intervention such as educational training (educators) and curricular modifications for referrals that develop the uniquely gifted and talented abilities of 2E students and at the same time accommodate behaviors associated with ADHD (Montgomery, 2007).

Zentall (2007) when testing the relationship between OST and understanding of the student's behaviors, reports a lack of evidence in showing that teacher knowledge combined with an understanding of student's with EBD behavior positively changes

teacher behaviors. As reported in Reid, McGuire, and ERIC (1995), the teacher's behavior changed because of the student size being larger than the teacher. As a result the teacher felt intimidated. Zentall (2007) argued that inservice education should be a useful tool in the preparation of teachers who have students with challenging behavior (as cited in Shapiro, Miller, Sawka, Gardill, & Handler, 1999). Zentall (2007) went on to report that students with ADHD represent a large number within the general education population of students who have behavioral challenges in addition to the reported EBDs.

In the study of Antrop, Roeyers, VanOost, and Buysse (2000), the OST was tested for its applicability to the performance of children diagnosed with ADHD. Results of their study showed that ADHD in children with EBDs and LD displayed more activity than non-ADHD children in the no-stimulation environment, but not in the stimulation condition. Similarly, in the study of Zentall, Tom-Wright, and Lee (2013), students with ADHD associated EBDs and LD demonstrated greater responsiveness to psychostimulants through improved reading recognition and math calculations. Also, added sensory stimulation produced gains for in-reading recognition and comprehension and in math calculations and problem solving (Zentall et al., 2013). The theoretical framework for this quantitative study was the OST, which seeks to explain the role of stimulation modulation in the behavior of disordered children which has been documented by Zentall et al. (2010).

This current study supports the theory of Optimal Stimulation (Zentall, 1975) arguing that behavior of 2E students can be controlled, directed, and managed. The researcher of the study opined that when teachers received appropriate training in the

identification of 2E students, he or she could provide effective referrals that could provide basis in planning appropriate interventions for students with learning disabilities. Alternative approaches such as overstimulation theory is not applicable in this study as the goal of providing training to teachers is not to introduce input stimulation activities but rather analyze the condition and motivational learning factors of 2E children to optimize their learning potentials.

Teacher Training and Identification of the Twice Exceptional Child

While some states have tried to foster training for teachers who work with 2E children, albeit with mixed results, there is no process in place that required long and intensive training to certify them to work with 2E students (USED, 2011). According to the USED there is a growing population of students who, historically, are not being adequately educated due to improper training of educators (2011).

VanTassel-Baska et al. (2009) reported that working with gifted students who have special needs is a curriculum and program challenge. Identifying the characteristics of 2E students is dependent on the degree of teacher's training and their experience according to their understanding and categorization of students' characteristics and student behaviors (VanTassel-Baska et al., 2009). For this research, the review and inclusion of past empirical reviews focused on the teacher training for 2E students and the misguided understanding about how to meet their needs to provide the most optimal educational experience for these students. In prior studies, teachers reported that the prominent characteristics of gifted students were creativity with strong critical thinking skills, and sociability, and defining innovative processes (VanTassel-Baska et al., 2009).

However, they also noted the characteristics which are typically associated with students who exhibit emotional disorders such as including impulsive behaviors, distractibility, and lack of organizational skills (ODE, 2005). They also had a tendency to focus on identifying factors of 2E students who exhibited characteristics which included strength in problem solving (Silverman, 1989), a strong verbal vocabulary, creativity, a sophisticated sense of humor, and intense interests in specific areas (Nielsen & Higgins, 2005).

According to ODE (2005), there is so little training provided to the teachers who work with 2E children that few administrators know what to do or how to incorporate the most optimal educational experience for these students. Some of the interviewees, such as teachers, noted the following: gifted students appeared to have a stronger work ethic, while other teachers reported gifted students possess confidence, and high esteem (Bianco & Leech, 2010). On the flip side, some teacher respondents reported students with low self-esteem, and also having a lack of confidence; and struggling with perfectionism. Other teacher-educators reported students with a strong time management, and organizational skills (Baum & Owen, 2004).

Baum and Owen (2001) argued deficits should be remediated before enrichment can occur is common in schools. Silverman (2003) reported that teachers need to identify the secret to reaching 2E children by teaching to their strengths. Reis and Ruban (2005) referred to several studies that underscore the importance of concentrating on the gifts rather than the disability in order to foster creative and productive students. Nielsen, and Higgins (2005), and Weinfeld et al. (2006) concurred, arguing that these students should

first and foremost be seen as gifted learners. This is a construct to strengthen teacher training that will deliver assistive technology and improved accommodations in the classroom with interventions to possibly include untimed tests and individual assignments (Bianco & Leech, 2010). A dichotomy which depicts a pattern of strengths, and weaknesses demonstrated by twice-exceptional children, as well as teacher's who are more appropriately trained is the issue that must be addressed to enable social and academic success (Weinfeld et al., 2006).

Through the years, different programming models, and options for twice-exceptional students' have been identified. According to Brody, and Mills (2007) four aspects included for ADHD students: (a) gifted programming in/ the areas of strength, (b) developmental instruction in subjects of average growth, (c) remedial teaching in areas of disability, and (d) adaptive instruction in areas of disability. Researchers agree that twice-exceptional students' unique educational, and emotional needs require an individualized approach. The effect of teacher training and/ or certification would make a stronger difference for options based on individual student needs for referrals rather than follow a one-size fits-all approach (Silverman, 2003). Research indicated that better educational planning for the 2E student to further train and equip today's teachers is paramount (ODE, 2005). There needs to be access to information that includes either formal or informal methods to deliver in-service training, mandated workshops and conferences, and/or university courses (ODE, 2005). An effective tool that has been demonstrated to show positive delivery is collaboration among the teacher's and professional administrators in each area of concern within the culture of the school, which supports

rules and services outlined by law and provided by each school district (Rizza & Morrison, 2007).

Factors Related to Referrals of Twice Exceptional Students

For students who are 2E, what determines the referral factor of teachers who are responsible for teaching them? Are teachers actually prepared with the appropriate education tools that will support their referral of students to gifted and special education programs? The results of the research provided teacher-educators with additional knowledge about student referrals for children who are diagnosed as ADHD, yet they are 2E or gifted. The results demonstrated that teacher-educators, who are certified, should be able to provide more exact referrals than teacher-educators who are not certified.

Referrals are a major component for children who need special education services. Typically each school district has a standard referral process and in some cases, pre-referral (Chu, 2005). State laws govern the pre-referral and referral processes from state to state. As a result, the protocol to determine the referral or pre-referral procedure is arranged and managed by the school district liaison and what is considered the ‘team family’ (ODE, 2012). There are multiple professionals and care takers who comprise the ‘team family’: principal, teachers, counselors, psychologists, primary care physicians, vocational specialists, and social workers (Silverman, 1989). The referral is merely a suggestion for an evaluation and it is the most important first step for the student. Unfortunately, because of lack of training and understanding about 2E children, many are not referred for evaluations of gifted abilities and are merely discharged back into the same school program (USED, 2011).

Factors Associated With Student Characteristics

Christenson, Ysseldyke, Wang, and Thurlow (1983) have acknowledged the discrepancy in referrals based on student characteristics. While VanTassel-Baska et al. (2004) reported their lack of referrals on participants who included low income African-American and low income Caucasians. In many or most cases the reasons given for referrals or lack thereof are relative to the student's grade level, age, sex, the size of the school system and the source of the referral (ODE, 2005). Although research demonstrated that twice as many boys as girls are given referrals, the relationship that exists between each sex and the attributions for each child were not significant (VanTassel-Baska et al., 2009). In other words, the relative causes for the problems were similar in nature regardless of the sex of the child. The teachers felt as though there were several explanations that attributed to the cause of the difficulties from classroom settings, to external factors outside of the instructional and class settings (VanTassel-Baska et al., 2009). While other studies reported that student referrals were due to behavior problems, along with home and background as factors playing a significant role, only 10 percent believed that academic problems could potentially be a cause for a referral (VanTassel-Baska et al., 2009). Hobson and Bianco (2011) referred to the discrepancy paradigm as the "wait-to-fail" syndrome due to a lack of focus on the student's needs and more on test scores (p.10).

Factors Associated With Teacher Characteristics

According to Hoffman (as cited by McIntyre, 2012), high levels of aggression (such as boy behavior) weakens the confidence of female teachers. Studies identified that

as many as 91 percent of elementary school teachers from nine states were White women who held an average number of 11 years of teaching (USED, 2011). According to the surveyed participants, there were two and a half times more boys given referrals than girls (USED). Seventy percent of the students referred were in the primary grades from kindergarten through three, and 30 percent were in the intermediate grades with the average age of the referrals was about eight and a half years old (USED).

School professionals should understand the areas of strengths and challenges that are typical of the child in the general classroom. Twice-exceptional children almost always perform at grade level which poses the unique challenges for identifying their exceptionality (Jones, 2011). According to Bianco and Leech (2010), the degree to which attributions influence the classroom teacher's referral decisions remains unclear. The research by Bianco and Leech indicated a degree of relationship between two specific reasons for resistance to referral and the teachers understanding of students who are 2E. However, over the years the potential impact of influencing teachers' referrals and their decisions to make a difference in the lives of students is apparent according to related research. Teachers and education professionals are carelessly driven to misdiagnosis by not recognizing the dual differentiation to meet the needs of the 2E student; in lieu of measuring the discrepancy between the student's academic assessment and academic performance (Hobson & Bianco, 2011). According to Jones (2011), by digging deeper into the exceptionality of the child, the school instructor or professional may find a student who has a creative side for writing but cannot write or exhibit their thoughts from

pen to pad. They may have a student who learns complex math but struggles with simple problems, or who cannot remember a simple history quote (Hobson & Bianco, 2011).

Factors Associated With Environment

Teachers have recognized the role of the external environment (outside the classroom) in the student classroom behaviors. This attribution has an impact on student referrals. Furthermore, school policies have also had an impact on teachers referring students to the 2E programs. Attributions to external factors are evidenced by the conclusions of researchers Hobson and Bianco (2011), Montgomery (2007), and VanTassel-Baska, et al. (2009). For example a child who has college-educated parents would receive a referral, because of the attitude of the parents. Students whose parents are not college-educated (e.g., high school dropouts) would not receive a referral, because in most cases the parent does not speak up or know enough information to be more inquisitive. A child who is living in a homeless shelter with low income would not normally receive a referral, but a child who has a high-income household would receive a referral.

According to Renzulli (as cited by Hobson & Bianco, 2011), and ODE (2012), teachers who play a role as advocate for the use of test scores and non-test criteria will receive teacher nominations for rewards in the identification of gifted or 2E students. For example, in Ohio the Office of Exceptional Children has started thinking outside the ‘class’ to try and get teachers to advocate more for the student’s academic performance and less for the assessment and environmental setting (ODE, 2012). This is the fourth year for the ongoing leadership award, ‘Kathe Shelby Leadership Award’, for teachers

who demonstrate exceptional and effective programming for children with disabilities (ODE, 2012). This emphasis on identification of the 2E child is expected to increase referrals to the 2E programs.

Chapter Summary

To date, there has been little to no evidence to accelerate the process of interventions that will identify and address the needs of children who are 2E (Hobson & Bianco, 2011). “Most recently the Council for Exceptional Children (CEC) specifically addressed the needs of gifted students with disabilities and, by doing so, invited gifted education professionals to be part of the dialogue exchange” (Hobson & Bianco, 2011, p. 104). The CEC recognizes that the access to an accelerated curriculum for 2E students must advance to a point that will allow it to be challenging. The process needs to be conceptualized not only to meet the needs of students, but also to meet the needs of all persons who engage with 2E students; hence, the need for a constructive framework (Hobson & Leech, 2011).

Thus, educators should be aware of these children and their characteristics related to both giftedness and ADHD so proper interventions are implemented for appropriate educational provisions (Edwards, 2009). Teachers who lack the knowledge to recognize and teach children who are considered 2E need appropriate training and understanding to build effective learning environments. Edwards (2009) reported that children who are gifted can become bored and are seen as underachieving, fidgety, and impulsive, which can also be labeled as ADHD. However in the setting of a corrected learning environment there is a possibility that the teacher could have the potential of identifying the child’s

gifted abilities. When the teacher does not recognize a child who is gifted it may imply that there is a lack of knowledge on their behalf. While it is understood that teachers are not the authority or source to identify a child's diagnosis; the teacher is the source of information and feedback recognizing the characteristics of the child and providing them with a referral to much needed services.

Conclusion

According to Fox, Brody, and Tobin (1983), little has been established for identifying and aiding students who are diagnosed as gifted, with a behavior disorder, or as ADHD. Although studies have been ongoing since the early 1970s, few accomplishments can be recognized to this day. However, Bracamonte (2010) noted that "the participants who attended the colloquium concluded that 2E students do, in fact, exist but are often overlooked when assessed as a population which special characteristics, and needs" (as cited by Fox et al., 1983, p. 1). Although this is a growing population and a growing awareness, 2E students continue to fall through the cracks within the educational system for three reasons: (a) the educators are not familiar with the student type, (b) schools cannot keep pace with research, and (c) gifted and special education programs are considered mutually exclusive activities (Krochak & Ryan, 2007).

Over the years, teachers' complaints about students diagnosed with both ADHD and giftedness noted the absence of a school program that is available to support both exceptionalities (Bracamonte, 2010). These profiles demonstrate that there are many expressions considered as 2E that merits a strong intervention that is not one of the more

conventional approaches in today's classroom setting. It is important to identify specific recommendations for teacher-educator's and leaders in the field of education to help identify and address the needs of the 2E students.

The 2E students have a specific need and should be given treatment as a separate learning population. When administering one of the more conventional intervention methodologies to 2E students it typically becomes a multi process approach such as (a) review of ADHD tendencies, (b) assessment of WISC IV, and (c) intervention with an IEP (CDC, 2009). When analyzing records of 2E students there is a noticeable mention of performing very high on certain gifted screening levels and very poorly or low on standardized assessments (Bracamonte, 2010). For the 2E students to reach a level of success there needs to be a consortium of teachers with a common level of understanding. According to Bracamonte (2010), the classroom teacher must have support from both gifted educators, and special educators to implement effective strategies. As a result, it becomes a collaborative effort from all affected parties such as the homeroom or class teacher, the gifted teacher the special education teacher, the parent, and the student.

The fear for this audience of children notes that achievement at grade level may create a catastrophic impact by not being served at all because no one knows where to put them (Montgomery, 2007). Do they follow routine for special education or are they considered a candidate for the educational gifted, and intellectually talented (GAIT), by asking the question, are they disabled or are they gifted (Montgomery, 2007)? Underachievement is, and has been noted for centuries since Piaget posited the usefulness of intelligence testing, and the outcome of the instrument to address the minimal or

marginal delivery of the tool, (Montgomery, 2007). Piaget found that intelligence testing merely determines whether the response or answer to the problem is correct or incorrect, therefore in his mind, it was a “one size fits all approach to intellect testing” (Montgomery, 2007, p. 23). There needs to be deeper and more thorough studies to bring more awareness to these children, the educational professionals, and medical psychological practice (Jones, 2009). Montgomery (2007) noted, “To understand these students more fully, it is important to discover what characteristics comprise their psychological makeup and what self-concept, learning, and motivational issues they face” (p. 23).

Silverman’s (1989) research pointed out that the level of training was paramount for teachers to make competent decisions and referrals regarding ADHD and giftedness. Silverman (2003) went on to report that without training teachers made decisions based on their attitudes and mind-set of the child with likes and dislikes. Some teacher’s believe that 2E is a dual classification which is increasingly becoming a concern due to a possible over identification of giftedness among the ADHD population therefore they question whether further training would enable them to differentiate the difference between ADHD and giftedness (Baum & Olenchak, 2002). To create the appropriate balance of the child’s strengths and also compensate for their deficits is to provide authentic and challenging curricula which is a stage for an appropriate learning balance by targeting the assessment and a comprehensive evaluation that will demystify the contradictory learning needs of the 2E learner (Hobson & Bianco, 2011).

Today, teacher's attitudes and chronic belief fears that there is an ongoing crisis of EBD student development in the world of gifted abilities which is unsettling. 2E children, who are gifted with above average abilities, and also diagnosed with a behavior disorders have special education needs (Montgomery, 2007). To better deliver the effective reform to meet the educational measures of 2E students, it is important to apply concerted efforts to expand and identify the strategies that need to be implemented in the mainstream classroom. This expansion would allow for the improvement of academic achievement levels for all students.

Current research showed that teachers are not equipped to accept responsibility to provide referrals due to a lack of training or knowledge of 2E behavior (ODE, 2005). Some teachers do not support or believe that children can be both gifted and disabled while others just resist assuming responsibility for differentiating instruction for students with an exceptionality or 2E (Bianco & Leech, 2010). Many teachers believe that some children just do not test well, while others just have a general misconception of 2E altogether (USED, 2011). The need to train teachers to give adequate 2E student referrals to effective special service programs is paramount. Teachers are often the first line of defense in working with 2E students and the special services programs. McIntyre (2012) reported that justification of a referral may be determined according to the teacher's standards and whether the teacher believes the student needs a referral. The intent of the referral process is to attend to the issue for those eligible students who are considered 'different' so that they will be placed into an academic program that will identify with both their strength and their disability.

Chapter 2 demonstrated the gap in the literature to study the impact of teacher training on teacher referrals. There is a detailed review of relevant literature of teacher characteristics, student characteristics, and referrals for students who are 2E. The quantitative methodology is discussed in Chapter 3, and provides the research design and methodology used in testing the hypotheses as well as a description of the measures, the collection of data, and the sampling.

Chapter 3: Research Method

Introduction

The literature review demonstrated that teachers in general education classrooms do not have a consistent approach when referring students with disabilities into gifted programs (Bianco & Leech, 2010). The empirical literature on children who exhibit 2E behavior details the challenges among educators to effectively identify and refer them to the appropriate support systems.

Chapter 3 includes a description of the specific methodology, sampling of participants, research design and data collection, analyses, participants' rights, and ethical considerations. This chapter contains the discussion of the parameters regarding the collection of the data, the statistical analyses, and expectations for data quality threats to validity and reliability.

Research Design and Rationale

This study provided information about the relationship of teacher training with referrals of 2E students. Although previous studies have acknowledged the role of teacher training in working with children with special needs, none have investigated this relationship (Montgomery, 2007; USED, 2011; VanTassel-Baska et al., 2009). Identifying the role of teacher training in the referrals of 2E students is important to guide future interventions for referring 2E students.

This study included variables that studied the relationship between teacher training and student referrals into gifted programs by noting whether the hypothetical student in the vignette would be referred to the gifted program and the number of referred

students (see Appendix G). The referral variable determined whether the child who is diagnosed with ADHD fits the parameters for students who are gifted, and in this case, just bored, and acting with impulse. The vignette included statements about student's behavior in the classroom, and their specific learning abilities.

The two research questions for this study were as follows:

RQ1: Is there a relationship between type of teacher training and referral of a 2E student described in a hypothetical vignette?

RQ2: Is there a relationship between type of teacher training and the self-report of number of 2E students referred to gifted programs during the previous year?

The variables of interest for this quantitative research were teacher training and referrals of 2E students into gifted programs.

Quantitative methodology was appropriate for this study to answer the research question whether teacher training was related to referrals of 2E children. Quantitative methods are a means for testing objective theories by examining relationships among variables (Creswell, 2009). Moreover, quantitative methods are used for hypothesis testing (Creswell, 2009). On the other hand, the qualitative method for research attends to the experience of individuals as a whole, and not as separate variables (Creswell, 2009). This study sought to study the relationship between the type of teacher training and referral of a 2E student into a gifted program, and between the type of teacher training and the number of 2E students referred into gifted programs. In that case, the study had respective hypotheses for these relationships. Because the study sought to study relationships of variables and perform hypothesis testing, a quantitative method was thus

appropriate, rather than a qualitative study. This quantitative study used the survey method, specifically the electronic survey method. Survey methods are used to identify relationships between variables, and the electronic survey method is useful due to its ease of access and response for participants.

Research Methodology

The purpose of this quantitative study is to investigate the relationship between teacher training and 2E student referrals among the convenient sample of 122 teacher participants. This study was a quantitative method based on the previous study by Bianco and Leech (2010) with a request to reuse the approved instruments and surveys from their original authors as seen in Appendix H. The study by Bianco and Leech (2010) identified the effects of the disability labels for children with LD/EBD handicaps and the teacher-educator willingness to provide a referral to a gifted program. The results of the study showed that teachers were not willing to provide referrals for children who were identified as having behavior disorders. If a child was perceived as having ADHD, there were no further referrals or interventions established (Bianco & Leech, 2010).

Population

The population for this study included a convenience sample of general education teachers engaged with children considered 2E or gifted with disabilities. A minimum of 148 teachers were identified from a school list of school teachers and administrators and potential participants who replied based on surveys delivered to the school. The online survey asked teachers to list or identify their current credentials relative to their referrals of gifted children who are 2E in the classroom.

Sampling

The research focused on the Ohio school system. Ohio is one of the states currently selected for the “Race to the Top Program” by the United States Department of Education (2012). The State of Ohio offers an entire department within the State of Ohio Department of Education System for Twice Exceptional Children, Office of Exceptional Children (ODE/OEC). As such, the only schools included in the study were those designed specifically for 2E students.

The recruitment of participants included teacher-educators in K-12 grades. There was a distribution of consent forms for permission to conduct the survey and to be included as a valid participant (see Appendix C). To recruit participants, I used convenience sampling. The recruitment was started with the school’s permission of the working teachers. The acknowledgement was sent to the schools and administrative offices to conduct or allow the teacher-educators to participate in the collection of data for teacher training as related to referrals of 2E students with an explanation of the purpose of the research, the apparent necessity of the research, and the availability of the researcher if needed to respond to further questions.

The identified potential participants were presented with electronic surveys according to the list I obtained from the school. Convenience sampling was used to collect the data from school teachers and administrators who are potential participants according to their current position as a teacher. Data collection was in the form of electronic surveys I emailed to the school. Informed consents were sent to the participants and distributed through the school. The informed consent briefly explained why I felt this

area was important and how parents, teachers, and administrators could find it beneficial as well. Furthermore, the informed consent included contact numbers and email addresses, should there have been questions. Upon agreeing to participate, teachers needed to sign the forms and submit them to me or the school administration with whom I was in contact. Upon receiving the signed consent, I emailed the survey link to the participant. Teacher-educators completed an online questionnaire based on a Likert scale of *strongly agree* to *strongly disagree*, after reading a vignette about a hypothetical student. Once all surveys and questionnaires (materials) were completed, they were separated from the consent forms and stored in a secured location for 5 years in order to ensure confidentiality. Upon completion of the materials, I followed up with contact data if the results were requested by the school(s).

Sample Size

The analysis was a 2 x 4 chi square analysis. Phi coefficient was used as a method of measurement. G*Power 3.1.2 was used to calculate the appropriate sample, using a medium effect size (ω) of .30, an alpha of .05, a recommended power of .80, and 3 degrees of freedom (Erdfelder, Faul, & Buchner, 1996). A conservative effect size of .30 was used for the analyses due to the lack of literature and empirical evidence on this topic. Depending on the number of cells in the contingency table after collection of the actual data, Cramer's V or Cramer's Phi (ϕ_c) was used. The recommended sample size to achieve empirical validity was calculated to be 122 teacher participants. (Cohen's d is not sufficient for this study).

The variables of interest were type of teacher training and referrals of 2E students to gifted programs. The goal of the research was to determine the relationship between the two variables of interest when one or both of the variables are ordinal in measurement. The question that measures type of training was assessed using four types of training; “What types of training are needed to give referrals of 2E students into gifted programs?” (1) no training, (2) specialized seminar, (3) internship training, and (4) certified; all data were categorical. The dependent variable was the teacher’s responses to the vignette on a Likert type scale, ranging from strongly agree to *strongly disagree*. Participants’ responses on this scale were collapsed into a dichotomous response, with *strongly agree* and *agree* being coded as a Yes and *strongly disagree* and *disagree* being coded as a No for referral. Referrals were measured with the question, “How many students did you refer to gifted programs during the past academic year?” The response options for this question were open-ended numerical data. Factors that contributed to the weight of the teacher referrals were measured with the question, “Which factors contributed to your decision for referral to the gifted program services?”

Data Collection

Data were collected from a convenience sample of teachers at a K-12 school for exceptional learning. I delivered the surveys to participants through an electronic medium, which contained the following documentation: (a) a brief explanation of the general purpose of the study (mentioning only my interest about the recommendations teachers identify for the students) and instructions for participation (Appendix A); (b) letter consenting school participation (Appendix B) ; (c) consent forms (Appendix C); (d)

demographic data sheet (Appendix D); (e) vignette (Appendix E); (f) survey instrument (Appendix F); and (g) questionnaire for training (Appendix G).

Instrumentation and Surveys

To effectively gauge the impact of the training for the participants, the research design included the distribution of a vignette that described a student with emotional and behavior disorders but did not have a label for the student associated with the vignette (i.e., “A.K. a fourth grade student with emotional and behavior disorders is currently attending your school”; Bianco & Leech, 2010). The vignette was distributed to an audience of teachers with six questions on a 4-point Likert-type scale (1 = *strongly agree*, 2 = *agree*, 3 = *disagree*, and 4 = *strongly disagree*). One of the six questions looked at the teacher and his/her willingness to make a referral of the student described in the vignette for possible entry into a gifted program: “I would recommend that this student receive a referral for placement into our school’s gifted program.” The remaining five questions listed in Appendix F served as distractor questions and served no meaning or relevance to the process. Teachers were also asked to identify the number of 2E students referred annually. The results of this study revealed whether classroom teachers provided referrals for 2E students according to their level of training.

After reading the vignette, participants were asked to complete a survey consisting of six questions on a 4-point Likert scale ranging from *strongly agree* to *strongly disagree*. One of the six questions addressed the teachers’ willingness to refer the student described in the vignette for possible placement in gifted programs. Participants were asked to complete a survey to identify their level of certification to

work with children who had special needs. The survey questions in Appendix G asked the participants to identify their following levels of training, depending on the group of students from gifted to special education to the general/mainstream classroom: (a) no training, (b) specialized seminar, (c) internship training, and (d) certified. Teachers with no training had a minimum of a bachelor's degree. Teachers who attended a workshop or seminar for working with students who are special education or gifted had a certificate of completion for the specialized seminar. Teachers who were able to seek an internship at a school for gifted children or children who were considered special education selected internship training. Teachers who were certified in working with students who are gifted or students who are considered special education selected certified. Additional details to operationally define the categories of teacher training are listed in the following section, Operationalization of Variables. Moreover, referrals were measured with the question, "How many students did you refer to gifted programs during the past academic year?" The response options for this question were open-ended numerical data.

The Demographic Data Sheet (Appendix D) included the following: gender, age, teaching assignment to include highest degree earned, teaching certification, number of years teaching experience, and the number of students referred into special services programs in a school year.

Operationalization of Variables

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. Responses from Appendix G, research question: “Which factors contributed to your decision for referral to the gifted program services?” aided effectively in the cause of this study to determine the necessary level of training. Because there are no training programs to date to satisfy the needs of teachers who teach 2E children, there are no interventions or curricula for teachers, specifically. Some states are in the process of building the content for curriculum delivery, but it needs state approval at this time. The State of Ohio is the most current with their Office of Exceptional Children program (NEA, 2006), which will offer a certification for teachers who teach 2E by 2014. At that time, the training will determine the curricula. The types of training are listed below:

- **No Training** – Delivers regular class-based curriculum with no interaction or experience working with referrals for 2E students.
- **Specialized Seminar** – Delivers in-service training components such as screening and identification procedures, curriculum and recommended referrals for interventions of 2E students (Karnes, Shaunessy, & Bisland, 2004).
- **Internship Training** – Delivers expertise in the role of teachers to assist with practicum of understanding and categorization of the characteristics/ behaviors for referrals of 2E students (CDC, 2009; Nielsen, Higgins, Hammond, & Williams, 1993).

- **Certified Training** – Delivers an outcome for teachers to include strategies and accommodations that are considered “best” practices for referrals of 2E students (Rogers, 2009).

Referrals

Referral is the variable used to measure the teacher’s act of referring students with disabilities into gifted programs. This was assessed as the referral response to the vignette. This was in response to one of the six questions of which five of the questions serve as distracters. Referrals were also assessed by the number of students referred to gifted programs annually.

Data Analysis Plan

Data were transferred into SPSS 22.0 for Windows for analysis. Descriptive statistics were conducted to describe the sample population. Frequencies and percentages were presented for gender, age, dominant teaching assignment, training, and highest degree earned. Means and standard deviations were presented for number of years of total teaching experience and number of referrals per year.

A 2x4 chi-square test was used for analysis. Chi square is the appropriate statistic when the researcher is interested in the relationship between two categorical variables. The variables of interest for the analysis were teacher training and 2E referrals to a gifted program. For the analysis, training was assessed with the question, “What types of training are needed to give referrals of 2E students into gifted programs?” The question that measured training was assessed using four types of training: (a) no training, (b) specialized seminar, (c) internship training, and (d) certified; data were categorical. The

dependent variable was the responses of the teachers to one of the six questions based on the vignette. Five of the questions were distracters. The response to question 5, which is the target question, “I would recommend that this student be referred for placement into our school’s gifted program” was on a Likert scale that was collapsed into a dichotomous response, with *strongly agree* and *agree* being coded as a Yes and *strongly disagree* and *disagree* being coded as a No for referral. Referrals were measured with the question, “How many students did you refer to gifted programs during the past academic year?” The response options for this question were open-ended numerical data.

Research Questions and Hypotheses

The research questions and corresponding hypotheses of this study focused on teacher training and 2E student referrals. The research questions were:

RQ1: Is there a relationship between type of teacher training and referral of a 2E student described in a hypothetical vignette?

H₀1: There is no significant relationship between type of teacher training and referral of a 2E student as measured by a referral response to a hypothetical vignette. .

H₁1: There is a significant relationship between type of teacher training and referral of a 2E student as measured by a referral response to a hypothetical vignette. .

RQ2: Is there a relationship between type of teacher training and the self-report of number of 2E students referred to gifted programs during the previous year?

H₀2: Teacher training has no significant relationship to the number of 2E students referred to gifted programs as measured by self-reported number of referrals made during the previous year.

H₁₂: Teacher training has a significant relationship to the number of 2E students referred to gifted programs as measured by self-reported number of referrals made during the previous year.

To test hypothesis one, and to determine the relationship between type of teacher training and referrals of 2E students into gifted programs, a chi square analysis was conducted. Thus, a 2x4 chi-square non-parametric was used to test the hypothesis. The chi square is the appropriate statistic when the researcher is interested in the relationship between two categorical variables. The variables of interest for the analysis were training and referrals. Training was assessed with the question, “What types of training are needed to give referrals of 2E students into gifted programs?” Respondents reported their type of training from among 4 categories; (a) no training, (b) specialized seminar, (c) internship training, and (d) certified with six degrees of freedom ($k-1 = 6$). The dependent variable was the responses of the teachers to the vignette on this Likert scale, which were collapsed into a dichotomous response, with strongly agree and agree being coded as a Yes and strongly disagree and disagree being coded as a No for referral with three degrees of freedom ($k-1 = 3$).

The second hypothesis was tested to determine the relationship between type of teacher training and the number of 2E students referred to gifted programs during the previous academic year. Teacher training was assessed by teacher reports about their type of training and the dependent variable, number of referrals was measured with question number 5 on Appendix G, “Which factors contributed to your decision for referral to the gifted program services?” This determined the frequency of referrals of 2E students into

gifted programs. Degrees of freedom were determined based on the participant responses to the above question.

In the chi square analysis, row and column percentages were interpreted for each variable. To determine significance, the calculated chi-square coefficient (χ^2) and the critical value coefficient were compared; a significant relationship existed when the calculated value was larger than the critical value, given the degrees of freedom and an alpha of .05. If a significant relationship existed, the null hypothesis would be rejected in favor of the alternative hypothesis. The degrees of freedom for a chi-square were determined by the following equation: $(r - 1) \times (c - 1)$, where r equaled the number of rows and c equaled the number of columns (Howell, 2010).

The assumptions of the chi square were assessed prior to conducting the analysis. The assumptions included that data must come from a convenience sample of multinomial mutually exclusive distribution and the expected frequencies could not be too small. Traditionally, caution needs to be taken that expected frequencies below five should not compose more than 20% of the cells and no cell had an expected frequency of less than one (Pagano, 2009). Additionally, observations should be independent of one another; participants can only contribute one observation to the data (the row and column totals should be equal to the number of participants; Howell, 2010).

Threats to Validity

Threats to External Validity

External validity refers to the generalizability of the results of a quantitative study (Creswell, 2009; Bracht, & Glass, 1968). Hence, threats to validity are any factor that

reduces generalizability for the study. One threat to the external validity of this study involved determining if the teacher's response to the vignette about the referral was related to actual referrals, and whether the results could be generalized to other settings and samples. The researcher addressed this threat to external validity by asking the teachers how many students they had referred. Therefore, although one cannot identify the actual behavior, a reliability check was put in place.

Threats to Internal Validity

Internal validity refers to the extent to which the results obtained from the study are indeed a function of the variables being measured (Bracht & Glass, 1968; Creswell, 2009). Threat to internal validity of this study included (a) participant selection bias because only those who feel strongly about referring students to the gifted programs had participated, and (b) attrition, as some participants had decided not complete the survey. The researcher minimized the possibility of occurrence of the threat of selection by inviting all teachers and increasing their motivation to participate by an appeal for the beneficence of all children. The researcher also addressed the threat of attrition by using a short survey (not time consuming), and by allowing the teachers to answer the survey at their own convenient time and pace because of the use of an online survey platform.

Ethical Considerations

The American Psychological Association (APA, 2002) created several guidelines for researchers to help ensure that studies are designed and conducted in a way that considers ethical and legal implications of the research. Details of the procedure on how to adhere to ethical guidelines are discussed in the succeeding sections. For this study, the

main considerations were informed consent and confidentiality. IRB permission was obtained and permission from Bianco and Leech (2010) was obtained and made available for the participants (Appendix H). The fundamental principles undermining the ethical conduct of research are that participants should be guarded against any foreseeable threats to the participant's well-being, values, and dignity. The efforts of this research included the highest standards of academic rigor. There was a delivery of honesty and integrity without bias.

According to Jones (2011), guidelines help a researcher ensure the protection of participants' rights through the consideration of the following four areas when planning for, and conducting research: (a) Ethical Standards 9.03 Informed Consent in Assessments that identifies the process psychologists can obtain informed consent for assessments evaluations, or diagnostic services, as described in Standard 3.10, Informed Consent that identifies the exceptions to the testing parameters (MTS tests); (b) Standards 4.01, Maintaining Confidentiality, demonstrates that psychologists had a primary obligation to take reasonable precautions to protect confidential information obtained through or stored in any medium (IEP plans); (c) Standards 8.08 Debriefing, reports that psychologists provide a prompt opportunity for participants to obtain appropriate information about the nature, results, and conclusions of the research, and to take any reasonable steps to avoid data mismanagement; and (d) Principle C - Integrity of the project is paramount. Care was taken to file and transcribe the data in a way that allows a retrospective audit if necessary (APA, 2002). It was important to conduct the research in

a way to demonstrate that there was no cheating, stealing, or any intentional misrepresentation of the facts (APA, 2002).

Informed Consent

An informed consent was provided to participants to ensure that they were informed of their rights as a part of the study. More specifically, the informed consent stated that the study ensured confidentiality of the participants. The participants were ensured that participation was voluntary and non-participation would not have any repercussions on the part of the participant. The participants were made aware of the research objectives, and any potential benefits received from the data. Copies of the dissertation were distributed accordingly.

Creswell (2005) reported that informed consent is an integral part of any research process. The investigator's role is to educate participants in the process of the research, the role of the participant, and any possible implications that could impede their progress to make informed decisions about their participation. According to Creswell (2005) and Neuman (2005), participants should make their decisions freely without coercion with the understanding that participation is considered a convenience and not a requirement. In this study, there was an assurance of compliance with all ethical concerns obtained from the participants.

Confidentiality

Creswell (2009) wrote that confidentiality is a significant factor in any research process. In order to ensure confidentiality in this study, the collection of data remained anonymous for each participant. The accessibility of data was limited to those conducting

the research, along with the access and maintenance of secured files. Electronic data are kept in a password-protected computer with all records held in a vault or safe deposit box.

Summary

In this chapter, the research methodology was presented. A quantitative design was chosen for this study that sought to determine the relationship between teacher training levels and student referrals to gifted programs through data from online surveys that teachers completed. The chapter also presented the (a) research question, (b) hypotheses, that focused on the relationship of the type of training the teacher received and their number of 2E referrals to the gifted program. In addition, population, sample, and sampling procedure were discussed to focus on teachers of K-12 school that offered special education. The data collection plan involved online data gathering through email, or some type of electronic medium. The instrument used for data collection was an online survey focusing on the variables being studied. Data analyses were conducted with SPSS 22.0.

Chapter 4: Results

Introduction

The purpose of this quantitative study was to investigate the relationship between teacher training and 2E student referrals. This study explored the level of educator preparedness to identify and meet the learning needs of children who are gifted with combined 2E characteristics, such as ADHD. The study sought to better understand the relationship between the type of teacher training and referrals of teacher-educators of 2E students to gifted programs. The study consisted of 148 respondents who participated in this study, with only 102 respondents who finished the survey.

Research Questions and Hypotheses

The following research questions and their respective hypotheses were investigated:

RQ1: Is there a relationship between type of teacher training and referral of a 2E student described in a hypothetical vignette?

***H₀₁*:** There is no significant relationship between type of teacher training and referral of a 2E student as measured by a referral response to a hypothetical vignette.

***H₁₁*:** There is a significant relationship between type of teacher training and referral of a 2E student as measured by a referral response to a hypothetical vignette.

RQ2: Is there a relationship between type of teacher training and the self-report of number of 2E students referred to gifted programs during the previous year?

H₀₂: Teacher training has no significant relationship to the number of 2E students referred to gifted programs as measured by self-reported number of referrals made during the previous year.

H₁₂: Teacher training has a significant relationship to the number of 2E students referred to gifted programs as measured by self-reported number of referrals made during the previous year.

Description of Demographic and Study Variables

There were 148 participants in the study; however, only 102 of these participants completed the entire survey; thus, only data from those participants were used in the analyses. This section describes the sample, which consisted of 102 individuals who completed the surveys, with regards to their demographic information as well as the study variables. The demographic variables include gender, age, current teaching assignment, highest degree earned, and total number of years of teaching experience. The study variables included (a) teacher training type, (b) student referral to schools, (c) gifted program (hypothetical vignette), and (d) referral of 2E students to gifted program in the previous academic year.

The majority of the sample was female (67.6%). Table 1 presents the frequency data for each age group. Table 2 presents the frequency data for the current teaching assignment of the participants. Table 3 presents the frequency data for the highest degree earned of the participants. Table 4 presents the frequency data for the range of total number of years teaching experience.

Table 1

Frequency Data for Age

Age	Frequency	Percent
20-30	18	17.6
31-40	33	32.4
41-50	20	19.6
51-60	21	20.6
61 and older	10	9.8
Total	102	100.0

Table 2

Frequency Data for Current Teaching Assignment

Grade	Frequency	Percent
1st Grade	11	10.8
2nd Grade	8	7.8
3rd Grade	10	9.8
4th Grade	7	6.9
5th Grade	13	12.7
6th Grade	7	6.9
Special Education	12	11.8
Other	34	33.3
Total	102	100.0

Table 3

Frequency Data for Highest Degree Earned

Degree	Frequency	Percent
Bachelor's Degree	40	39.2
Master's Degree	49	48.0
Doctorate Degree	3	2.9
Specialist	10	9.8
Total	102	100.0

Table 4

Frequency Data for Total Number of Years of Teaching Experience

Years of experience	Frequency	Percent
1-5 years	29	28.4
6-9 years	16	15.7
10-13 years	17	16.7
14-17 years	6	5.9
More than 17 years	34	33.3
Total	102	100.0

Tables 5 to 7 presents the frequency data for the study variables of teacher training type, student referral to school gifted program (based on the hypothetical vignette), and actual referral of 2E students to gifted program during the previous academic year. Table 5 shows that more than half (56.9%) of the participants received no training in regards to working with 2E children.

Table 5

Frequency Data for Teacher Training Type

Training	Frequency	Percent
No training	58	56.9
Specialized seminar	27	26.5
Internship training	7	6.9
Certified	10	9.8
Total	102	100.0

In terms of the frequency of teachers' referral, Table 6 shows that more than half of the sample (58.8%) had chosen to refer students to their school's gifted program, while 41.2% have chosen not to.

Table 6

Frequency Data for Student Referral to School's Gifted Program (Hypothetical Vignette)

Referral made	Frequency	Percent
Yes	60	58.8
No	42	41.2
Total	102	100.0

Table 7 shows that more than half (56.9%) of the sample had referred one or more 2E students to the gifted program in the previous academic year.

Table 7

Frequency Data for Referral of 2E Students to Gifted Program in the Previous Academic Year

Number of referrals	Frequency	Percent
None	44	43.1
More than zero	58	56.9
Total	102	100.0

Data Analysis

Results

To address the research questions, the association between the study variables of teacher training type and student referrals 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 both variables should be measured categorically. Another assumption of the chi-square is that the expected frequencies are 10 or greater. This assumption was also satisfied since the average expected frequency for the 2 x 4 contingency table was 12.75. The variables of teacher training type, referral of a 2E student (hypothetical vignette), and referral of 2E students to self-reported number of referrals made during the previous year all contain categorical responses. The second assumption is that both variables should consist of at least two categorical, independent groups. The variable of teacher training type is a categorical variable with four independent groups, while both referral of a 2E student (based on the hypothetical vignette) and referral of 2E students to self-reported number of

referrals made during the previous year are categorical variables containing two independent groups.

Research Question 1. Is there a relationship between type of teacher training and referral of a 2E student described in a hypothetical vignette? The alternative hypothesis for this research question was accepted, and therefore there is a significant relationship between type of teacher training and referral of a 2E student as measured by a referral response to a hypothetical vignette. The hypothesis was investigated through a chi-square test.

Table 8 presents the cross tabulation matrix of the variables of teacher training type and referral of a 2E student (based on the hypothetical vignette). Out of the 148 studied participants and 102 completed results, there were a total of 58 participants who received no training in regards to working with 2E students. Only 38.3% of those who had no training chose to refer 2E students to the school's gifted program. There were 39.7% who had no training. In the entire sample, 22.5% had no training and chose to refer 2E students to the gifted program. Out of the 148 studied participants, there were a total of 27 participants who attended specialized seminar in regards to working with 2E students. The majority of the 85.2% who attended specialized seminar chose to refer 2E students to the school's gifted program. In the entire sample, 38.3% attended a specialized seminar. However, 22.5% attended a specialized seminar and chose to refer 2E students to the gifted program. Out of the 148 studied participants, there were a total of seven participants who received internship training in regards to working with 2E students. Out of the seven participants, only 57.1% of those who had internship training

chose to refer 2E students to the school's gifted program. The results showed that participants who chose to refer 2E students to the gifted program, 6.7%, had internship training while only 3.9% had internship training. Out of the 148 studied participants, there were a total of 10 participants who had certified training in regards to working with 2E students. All 10 participants who had certified training chose to refer 2E students to the school's gifted program. From these 10 participants, 16.7% had certified training, yet only 9.8% had certified training and chose to refer 2E students to the gifted program.

The crosstabulation matrix showed that compared to teachers who had no training (56.9%) with regards to working with 2E students those who had training (43.1%) were significantly more likely to refer 2E students to their school's gifted program. Those who had certified training were most likely to refer students, followed by those who attended a specialized seminar, and then by those who had internship training. Those who had no training were more likely to not refer 2E students to their schools gifted program; χ^2 23.55, $p < 0.05$.

Table 8

Cross Tabulation of Teacher Training Type and Referral of a 2E Student (Hypothetical Vignette)

		Teacher referral of student to the gifted program		Total	
		Yes	No		
Teacher Training	No Training	Count	23	35	58
		% within Teacher Training	39.7%	60.3%	100.0%
		% within Student Recommendation to School's Gifted Program	38.3%	83.3%	56.9%
		% of Total	22.5%	34.3%	56.9%
	Specialized Seminar	Count	23	4	27
		% within Teacher Training	85.2%	14.8%	100.0%
		% within Student Recommendation to School's Gifted Program	38.3%	9.5%	26.5%
		% of Total	22.5%	3.9%	26.5%
	Internship Training	Count	4	3	7
		% within Teacher Training	57.1%	42.9%	100.0%

Table Continues

		Teacher referral of student to the gifted program		Total
		Yes	No	
Internship Training	Count	4	3	7
	% within Student Recommendation to School's Gifted Program	6.7%	7.1%	6.9%
	% of Total	3.9%	2.9%	6.9%
Certified	Count	10	0	10
	% within Teacher Training	100.0%	0.0%	100.0%
	% within Student Recommendation to School's Gifted Program	16.7%	0.0%	9.8%
	% of Total	9.8%	0.0%	9.8%
Total	Count	60	42	102
	% within Teacher Training	58.8%	41.2%	100.0%
	% within Student Recommendation to School's Gifted Program	100.0%	100.0%	100.0%
	% of Total	58.8%	41.2%	100.0%

The findings of the crosstabulation matrix results are presented in Table 9.

Table 9

Chi-Square Test Table of Teacher Training Type and Referral of a 2E Student (Hypothetical Vignette)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.55	3	.000
Likelihood Ratio	28.09	3	.000
Linear-by-Linear Association	15.83	1	.000
N of Valid Cases	102		

Table 10 shows the Phi and Cramer's V, which indicate the strength of the relationship between the two variables, and as observed, the relationship between the variables was moderate and statistically significant ($p < 0.05$). The alternative hypothesis was accepted in that there was a significant relationship between type of teacher training and referral of a 2E student as measured by a referral response to a hypothetical vignette.

Table 10

Symmetric Measures Table of Teacher Training Type and Referral of a 2E Student (Hypothetical Vignette)

		Value	Approx. Sig.
Nominal by	Phi	.48	.000
Nominal	Cramer's V	.48	.000
N of Valid Cases		102	

To identify whether a certain type of teacher training was associated with significantly more referrals, chi-square goodness-of-fit tests were conducted. Results indicated that significantly more referrals were made by teachers with specialized seminar training, $\chi^2(1, N = 27) = 13.37, p < 0.05$; and those who were certified, $\chi^2(1, N = 10) = 7.36, p < 0.05$.

Research Question Two. Is there a relationship between type of teacher training and the self-report of number of 2E students referred to gifted programs during the previous year? The alternative hypothesis for this research question was accepted: Teacher training has a significant relationship to the number of 2E students referred to gifted programs as measured by self-reported number of referrals made during the previous year. The hypothesis was investigated through a chi-square test.

Table 11 presents the cross tabulation matrix of the variables of teacher training type and the self-reported number of actual referrals made during the previous year. A total of 58 participants received no training in regards to working with 2E students. Of these participants, only 44.8% of those who had no training recommended at least one student to the gifted programs in the last academic year. Of the participants who had recommended at least one student to the gifted programs in the last academic year, 44.8% had no training. Of the samples, 25.5% had no training and had recommended at least one student to the gifted programs in the last academic year. A total of 27 participants attended specialized seminar training in regards to working with 2E students. Of these participants, 63% had recommended at least one student to the gifted programs in the last academic year. Of the participants who had recommended at least one student to the gifted programs in the last academic year, 29.3%

attended specialized seminar training. Of the samples, 16.7% had attended specialized seminar training and had recommended at least one student to the gifted programs in the last academic year. A total of 7 participants had internship training in regards to working with 2E students. Of these participants, 71.4% had recommended at least one student to the gifted programs in the last academic year. Of the participants who had recommended at least one student to the gifted programs in the last academic year, 8.6% had internship training. Of the samples, 4.9% had internship training and had recommended at least one student to the gifted programs in the last academic year. A total of 10 participants had certified training in regards to working with 2E students. All of those who had certified training had recommended at least one student to the gifted programs in the last academic year. Of the participants who had recommended at least one student to the gifted programs in the last academic year, 17.2% had certified training. Of the samples, 9.8% had certified training and had recommended at least one student to the gifted programs in the last academic year.

The crosstabulation matrix showed that, compared to teachers who had no training with regards to working with 2E students, those who had training are more likely to have referred 2E students to their school's gifted program in the previous academic year. Those having certified training were most likely to have referred students, followed by those who had internship training, and then by those who attended specialized seminar training. Those who had no training were more likely to not have referred 2E students to their school's gifted program in the previous academic year .

Table 11

Cross Tabulation of Teacher Training Type and Referral of 2E Students to Self-Reported Number of Referrals Made During the Previous Year

			Referred Students to Gifted Programs in the Last Academic Year		Total
			None	More than zero	
Teacher Training	No Training	Count	32	26	58
		% within Teacher Training	55.2%	44.8%	100.0%
		% within Referred Students to Gifted Programs in the Last Academic Year	72.7%	44.8%	56.9%
		% of Total	31.4%	25.5%	56.9%
	Specialized Seminar	Count	10	17	27
		% within Teacher Training	37.0%	63.0%	100.0%
		% within Referred Students to Gifted Programs in the Last Academic Year	22.7%	29.3%	26.5%
		% of Total	9.8%	16.7%	26.5%
	Internship Training	Count	2	5	7
		% within Teacher Training	28.6%	71.4%	100.0%
		% within Referred Students to Gifted Programs in the Last Academic Year	4.5%	8.6%	6.9%
		% of Total	2.0%	4.9%	6.9%
Certified	Count	0	10	10	
	% within Teacher Training	0.0%	100.0%	100.0%	
	% within Referred Students to Gifted Programs in the Last Academic Year	0.0%	17.2%	9.8%	
	% of Total	0.0%	9.8%	9.8%	
Total	Count	44	58	102	
	% within Teacher Training	43.1%	56.9%	100.0%	
	% within Referred Students to Gifted Programs in the Last Academic Year	100.0%	100.0%	100.0%	
	% of Total	43.1%	56.9%	100.0%	

A chi-square test determined if the association between the variables was significant. The results are presented in Table 12. The chi-square test result shows a chi-square value of 12.03, $p < 0.05$, which indicated that there was a statistically significant relationship between teacher training type and the self-reported number of referrals made during the previous year. Table 13 shows the Phi and Cramer's V which indicate the strength of the relationship between the two variables, and as can be observed, the relationship between the variables was moderate and statistically significant ($p < 0.05$). The alternative hypothesis was accepted in that teacher training has a significant relationship to the number of 2E students referred to gifted programs as measured by self-reported number of referrals made during the previous year.

Table 12

Chi-Square Test Table of Teacher Training Type and Self-Reported Number of Referrals Made During the Previous Year

	Value	<i>df</i>	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.03	3	.007
Likelihood Ratio	15.72	3	.001
Linear-by-Linear Association	11.68	1	.001
<i>N</i> of Valid Cases	102		

Table 13

Symmetric Measures Table of Teacher Training Type and Self-Reported Number of Referrals Made During the Previous Year

		Value	Approx. Sig.
Nominal by	Phi	.34	.007
Nominal	Cramer's V	.34	.007
N of Valid Cases		102	

To identify whether a certain type of teacher training was associated with significantly more referrals, chi-square goodness-of-fit test was conducted. Results indicated that significantly more referrals were made by teachers who were certified, $\chi^2(1, N = 10) = 7.36, p < 0.05$.

Other Findings

This section investigates whether other factors such as demographic characteristics of the child, knowledge of a theory that explains 2E behaviors, behaviors of the child, consultation, and others would predict the referral of a 2E student and self-reported number of referrals. To examine the relationship between these variables, binary logistic regression was performed.

Table 14 shows the binary logistic regression model summary table of the factors contributing to decision for referral and referral of a 2E student with the Cox and Snell R Square and Nagelkerke R Square values. Both of these are methods of calculating the explained variation of the model. Taking into account both methods, the explained variation in the dependent variable based on the model ranges from 52.2% to 70%.

Table 14

Model Summary of Factors Contributing to Decision for Referral and Referral of a 2E Student (Hypothetical Vignette)

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	64.26	.52	.70

Table 15 shows the classification table of the model. As observed, the model correctly predicted 90.2% of the cases.

Table 15

Classification Table of Factors Contributing to Decision for Referral and Referral of a 2E Student (Hypothetical Vignette)

Observed		Predicted			Percentage Correct
		Referred Students to Gifted Programs in the Last Academic Year		None	
Step	Referred Students to Gifted Programs in the Last Academic Year	None	More than zero		
1	Referred Students to Gifted Programs in the Last Academic Year	None	38	6	86.4
		More than zero	4	54	93.1
	Overall Percentage				90.2

Table 16 shows the variables in the equation table. As observed, the only significant predictor was behaviors of the child, $p < 0.05$, with an Exp(B) value of 70.71. This meant that the odds of referring more than zero 2E students to the program than none at all was 70.71 times greater for those who considered the behaviors of the child (e.g., disruptive behaviors, academic performance) than those that did not.

Table 16

Variables in the Equation Table of Factors Contributing to Decision for Referral and Referral of a 2E Student (Hypothetical Vignette)

		B	SE	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1a	Demographic characteristics of the child (1)	-1.518	1.583	.919	1	.338	.219	.010	4.880
	Knowledge of a theory that explains 2E behaviors (1)	1.235	1.015	1.481	1	.224	3.438	.471	25.115
	Behaviors of the child (1)	4.259	.897	22.564	1	.000	70.713	12.201	409.841
	Consultation (1)	-.602	.988	.372	1	.542	.547	.079	3.799
	Other (1)	-.990	.884	1.254	1	.263	.372	.066	2.102
	Constant	-1.234	.865	2.035	1	.154	.291		

Table 17 shows the binary logistic regression model summary table of the factors contributing to decision for referral and self-reported number of referrals with the Cox and Snell R Square and Nagelkerke R Square values, both of these are methods of calculating the explained variation of the model. Taking into account both methods, the explained variation in the dependent variable based on the model ranges from 39.5% to 53.2%.

Table 17

Model Summary of Factors Contributing to Decision for Referral and Self-Reported Number of Referrals Made During the Previous Year

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	86.966	.395	.532

Table 18 shows the classification table of the model. The model correctly predicted 81.4% of the cases. Table 19 shows the variables in the equation table. The significant predictors were behaviors of the child ($p < 0.05$, $\text{Exp}(B) = 0.02$), consultation ($p < 0.05$, $\text{Exp}(B) = 0.19$), and other ($p < 0.05$, $\text{Exp}(B) = 0.11$). This meant that the odds of not referring 2E students to their school's gifted program in the previous academic year was 0.02 times greater for those who considered the behaviors of the child (e.g., disruptive behaviors, academic performance) than those that did not, 0.19 times greater for those who considered the consultation (with parents, school psychologist, etc.) than those that did not, and 0.11 times greater for those who considered other factors than those that did not, where other factors include the following but not limited to: child's interests, creativity, grades, etc.

Table 18

Classification Table of Factors Contributing to Decision for Referral and Self-Reported Number of Referrals Made During the Previous Year

Observed			Predicted		Percentage Correct
			Teacher Referral of Student to the Gifted Program Yes	No	
Step 1	Student Recommendation to School's Gifted Program	Yes	49	11	81.7
		No	8	34	81.0
Overall Percentage					81.4

Table 19

Variables in the Equation Table of Factors Contributing to Decision for Referral and Self-Reported Number of Referrals Made During the Previous Year

		B	SE	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step	Demographic	3.672	2.238	2.693	1	.101	39.341	.490	3158.984
1a	characteristics of the child (1)								
	Knowledge of a theory that explains 2E behaviors (1)	-2.682	1.474	3.313	1	.069	.068	.004	1.229
	Behaviors of the child (1)	-3.719	.924	16.189	1	.000	.024	.004	.148
	Consultation (1)	-1.639	.818	4.015	1	.045	.194	.039	.965
	Other (1)	-2.234	1.070	4.357	1	.037	.107	.013	.873
	Constant	3.281	1.030	10.150	1	.001	26.593		

Summary

Two research questions were investigated to determine whether relationships exist between teacher training type and referral of a 2E student (hypothetical vignette), and between teacher training type and self-reported number of referrals made during the previous year. Chi-square tests were performed to address both research questions and their respective hypotheses. For research question 1, it was found that there was a significant relationship between type of teacher training and referral of a 2E student as measured by a referral response to a hypothetical vignette where teachers who had training were more likely to refer 2E students to their school's gifted program. For research question 2, it was found that teacher training had a significant relationship to the

number of 2E students referred to gifted programs as measured by self-reported number of referrals made during the previous year, where teachers who had training were more likely to refer 2E students to their school's gifted program in the previous academic year.

Other findings using logistic regression analysis showed that behaviors of the child were a significant predictor in referring more than zero 2E students to the program. In addition, behaviors of the child, consultation, as well as other factors (e.g., child's interests, creativity, grades, etc.) were significant predictors to referring 2E students to the schools gifted program. The implications of these results will be discussed in the subsequent chapter. The subsequent chapter also presents the conclusion and recommendation of the study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

In Chapter 5, I summarize the entire dissertation and discuss its findings in relation to current literature on making 2E referrals. The results of the study may help teachers refer 2E students to programs that would match their specific needs. Current literature has failed to identify whether training programs influence the likelihood that a teacher will make a 2E referral to a gifted program as well as provide an in-depth understanding on how teachers recognize that a student is 2E. At the beginning of this chapter, I present an overview of the study and then restate the purpose and significance of the topic. Next, I discuss the two main research questions. Then, the results of the analyses are discussed in relation to existing current research. Afterwards, I discuss the implications of the results on educators and for positive social change. Finally, I make recommendations for the benefit of future researchers before making a conclusion.

Twice exceptional or 2E refers to children who are intellectually gifted and have some form of associated disability (IDEA, 2004). Being diagnosed with 2E may at times be a detriment because it carries a stigma that the person has a disability such as ADHD and Dyslexia (Daley, 2006; Shillingford-Butler & Theodore, 2013). Students diagnosed with ADHD and Dyslexia often experience difficulty in one area or subject matter but excel in another (Zentall, 2006). According to the NRCGTUC (2012), it has only recently become common to find a child with both giftedness and disabilities with as many as 20% of students of the 2E population having a disability but having never been identified. Castellanos and Tannock (2005) further explained that the educational, social, and

emotional needs of 2E students often go undetected. As the population of 2E students increases, the responsibility of teacher-educators to differentiate classroom instruction to address 2E needs also increases (Montgomery, 2007). Acknowledging the needs of 2E students helps educators understand the complexity and challenges that 2E students have, given their unique characteristics and traits (Shaunnessy, 2007). The study investigated the relationship between teacher training and referrals of 2E students to gifted programs. Identification of the 2E children is important to properly match the method of instruction to their specific needs as well as to provide quality and equitable education for all students. Teachers are accountable for the promotion and growth of 2E students through a differentiated modified curriculum (Moon et al., 2002). Therefore, it is imperative for teachers to be armed with the necessary training to detect 2E children and to refer these children to gifted programs of their respective schools.

Current literature lacks inquiry on the likelihood of making 2E referrals by teachers with various levels of training. The study sought to address this gap by exploring the level of educator preparedness to identify and meet the needs of gifted children combined with 2E characteristics. The two main research questions in this study determined the level of educator preparedness to identify and meet the needs of gifted children combined with 2E characteristics: (a) Is there a relationship between type of teacher training and referral of a 2E student described in a hypothetical vignette? (b) Is there a relationship between type of teacher training and the self-report of number of 2E students referred to gifted programs during the previous year? The null hypothesis for both research questions was that teacher training had no significant relationship on the

number of 2E student referred as measured by a hypothetical vignette and self-reported number of referrals during the previous year, respectively, with the alternative hypothesis for both stating otherwise. The results were expected to highlight the role of training of educators for 2E students together with arming teachers with the ability to better address the special needs and guidance of 2E students in their academic progress. This quantitative study followed the theoretical framework of OST, a feedback for arousal theory, which explained the role of stimulation modulation in the behavior of disordered children (Zentall & Zentall, 2010). In particular, OST and arousal theory were used to explain how training affects the ability of educators to identify 2E students who are ADHD and gifted and assess their special needs.

The results revealed that teachers who received training in education and learning beyond the current level of degree for teachers dealing with exceptional students were more likely to refer 2E students to their school's gifted program. Meanwhile, teachers who had no training had the least likelihood to refer a 2E student to their school's gifted program. In addition, teachers who received advanced training in dealing with exceptional students were most likely to made referrals of 2E students during the previous academic year.

The only significant predictor referral using a hypothetical vignette was behaviors of the child. At the same time, the significant predictors for referrals during the previous year were the demographic characteristics of the child and knowledge of a theory that explains 2E behaviors. The significant predictors for referrals during the previous year

were behaviors of the child, consultation, and other. Other factors include but were not limited to the following: child's interests, creativity, grades and socio economic status.

Interpretation of the Findings

The results of the study presented interesting ideas on the influence of teacher training on making 2E referrals given that all of the null hypotheses were rejected. Krochak and Ryan (2007) offered several reasons on why 2E students continued to be at a disadvantage in the current educational system, with teachers being unfamiliar with the student type being the first reason. The results offered a way to tackle this problem by targeting the people who had the greatest authority to somewhat control the future of a 2E student. Teachers should become the source of information and feedback on the characteristics of a child since the student spends a significant part of his or her day in school. The two other reasons were that schools cannot keep pace with research, and gifted and special education programs are mutually exclusive activities (Krochak & Ryan, 2007). Once teachers had adequate knowledge on spotting a 2E student, it would be fairly easy to tailor programs fit for the student, thus addressing the two other reasons previously mentioned. The training would provide teachers with different options for interventions placing them in a better position to situate 2E students in a setting of a corrected learning environment.

As stated by VanTassel-Baska et al. (2009), identifying the characteristics of 2E students is dependent on the degree of teacher's training and experience in categorizing student characteristics and behaviors. Bianco and Leech (2010) claimed that teachers are often confused in terms of their diagnosis of students because the areas of ability and

disability tend to mask each other. The influence that training has on the ability of teachers to spot 2E students makes a valid assessment of their condition, and the recommendation for these students to receive a specialized educational instruction has enough statistical credence. This is a testament that any form of formal training does increase the likelihood that a teacher would properly identify a 2E student and make a referral. This notion confirms the concerns of ODE (2006) that teachers are currently unable to provide referrals because they are not equipped to accept responsibility due to lack of training or knowledge on 2E behavior. In fact, only a few administrators know what to do or how to incorporate the most optimal educational experience for these students (ODE, 2006). Edwards (2009) further noted that educators should be aware of the characteristics related both to giftedness and ADHD so that proper interventions are implemented for appropriate educational provisions.

However, it is not enough that the teachers receive just any training. The results also revealed that teachers should undergo certified training instead of participating in internships or just attending seminars to maximize the likelihood of making a referral. Silverman (2003) explained that without proper training, teachers tend to make decisions based on personal attitudes and the mind-set of the child in terms of likes and dislikes. Minner et al. (1987) added that general education teachers held biases toward students with disabilities in terms of referrals to gifted programs while Baum and Olenchak (2002) argued that teachers may had a hard time differentiating between ADHD and giftedness. Therefore, the training should delve into the different ways on how a teacher can discover the characteristics that comprise the psychological makeup and the self-concept, learning,

and motivational issues that 2E children would face (Montgomery, 2007). This is essentially what the results of the binary logistic regression model revealed wherein teachers usually look into the behavior of students in order to assess whether they should make a referral. Behavior as a major predictor of making a referral also confirms the findings of VanTassel-Baska et al. (2009) who stated that behavior problems, along with home and background factors, play a significant role in being referred. Only a small number of researchers believed that academic problems may be used as a predictor or referrals. Academic problems surfaced as a predictor using the binary logistic regression since it was included in the behavior variable during testing.

The predictors of making a referral also hint at the influence of OST in the decision to make a referral of the teachers. The OST dictates that children who are diagnosed with ADHD change activities on a more frequent basis and require continuous stimulation. According to Zentall (2007), there is a lack of evidence showing that teacher knowledge combined with an understanding of EBD students behavior positively change teacher behaviors towards making a referral. The results indicated that behaviors of the child were present as a predictor in making a referral for both the hypothetical vignette and for those that made a referral during the previous year. Therefore, teacher knowledge and understanding enabled them to identify the role of stimulation on 2E students. A study by Antrop et al. (2000) showed that ADHD in children with EBDs and LDs displayed more activity than non-ADHD children in a no stimulation environment, but none in a stimulation environment. Teachers may build on this knowledge by subjecting

students to a no stimuli and then to a stimulating environment to properly identify which children are likely to be 2E based on their behavior.

It is also important to revisit the referral process that teachers had to adhere to when referring a 2E student. Since each school district has a standard referral process, school policies also had an impact on the way teachers would refer 2E students to gifted programs. Providing better training to teachers could altogether alter the referral process to make it more beneficial to the identification of 2E students. However, the external environment failed to make it as a referral predictor in the study. Crepeau-Hobson and Bianco (2011), Montgomery (2007), and VanTassel-Baska et al. (2009) also focused on student demographics as a predictor of making a referral. Low-income African-Americans and Caucasians usually failed to receive any referrals (VanTassel-Baska et al., 2004), while a student's grade level, age, sex, the size of the school system, and the source of the referral (ODE, 2005) influenced the chance of being referred. Again, these characteristics were not significant during the binary logistic regression.

After establishing that training is indeed important in the quest for increasing 2E referrals by teachers, it is also important to extend the discussion to the quality of the programs that 2E students are getting themselves into. The end goal is not just making a referral but enriching the lives of 2E students to make them significant contributors to society. Bianco and Leech (2010) echoed the idea that 2E students had unique educational and emotional needs require an individualized approach. Reis and Ruban (2005) suggested that the programs center on giving importance to the gifts rather than the disability. This aims to encourage more creative and productive students.

Limitations of the Study

Numerous limitations related to the participants, survey tool, and threats to validity were explained in Chapter 1. Two limitations pertained to the teachers surveyed, which include only those providing instructions to gifted students in mainstream classrooms and those working with children with disabilities without any framework or certified knowledge in the general education setting. Educators who teach special needs, work within a specific framework, or had certified knowledge were precluded from participating in the study. Despite trimming the population of possible participants, these limitations were necessary to focus on a school system in Ohio. Several limitations on using a survey as a research tool were also presented such as interpretation of results, bias in teacher responses, survey attendance, null responses, participant willingness, and responses at different grade levels. However, given the ease and cost of employing a survey, this still served as an appropriate tool to generate the data needed for analysis. The last limitations highlighted threats to validity. An external threat to validity is whether responses to the vignette regarding the referral were actual referrals. The teachers were asked how many actual referrals they made, which served as a reliability check to address external validity. Subsequently, internal validity issues included participant selection bias and attrition. Both these limitations were addressed by inviting all teachers in the participating institutions, increasing teacher motivation to participate by mentioning the benefits of the study on children, and by using a short survey that did not consume much of the participant's time.

Recommendations

The scope and limitations of the study had been focused on elementary educators in one school setting and one school system. 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 of the relationship between teacher training types and 2E referrals. At this point, I would like to recommend the following expansions or topics:

1. Examine a broader set of participants across multiple geographic locations.

This suggestion particularly targets the lack of general results. By examining a larger population across different states or countries, future researchers will be able to fully comprehend which specific training method encourages the highest likelihood of making a referral. This extension would also reveal whether training has been put in place to help teachers identify and assess 2E students in different states or countries.

2. Supplement the results with a qualitative analysis of how teachers view training and referrals. Other researchers may become interested in analyzing the responses of the teachers on how they think training enables them to make valid 2E referrals. Suggestions on how to make the training and programs more effective in helping teachers could be obtained by thorough interviewing of the educator's experiences.
3. Analyze the dynamics on how teachers make referrals of other learning disabilities. The study only focused on 2E students with ADHD or Dyslexia. It

would be motivating to understand what specific type of training could help other gifted students or students with various learning disabilities. Other disabilities experienced by 2E students include visual or auditory processing, obsessive-compulsive, or sensory processing disorder, or any disability that hinders the child from learning in a conventional school environment.

Implications

Positive social change can be initiated if parents, educational leaders, and policy makers would closely examine the results of this paper and its implication on the education of 2E children. The results underscored the need for teachers to be given the proper training in identifying which student is 2E and referring the student to a gifted program. Formal training greatly increases the likelihood that teachers will make referrals. Therefore, educational leaders should make it a point to provide their educators with certified training programs. A larger budget should be allocated to continuous teacher education. Similarly, the school should provide seminars to the students' parents to aid them in the identification of 2E students. Parents may build on the knowledge that teachers had on their child in order to make a valid and complete assessment of the child's competencies and capabilities. Since consultation plays a role in helping teachers determine whether a student is 2E, the parents should be consulted during parent-teacher conferences so that the teachers would be able to explain their position on the status of the child. This implication is also similar to the suggestion of Bracamonte (2010) that a collaborative effort is needed for 2E students to reach a level of success.

In terms of governance, policy makers should consider advocating for better and rigorous continuing teacher education. Legislators should make it a priority that teachers are provided the skills and resources necessary to fully comply with the objectives of the NCLB (2002) by allocating a budget for training in educational institutions. These programs should focus on how teachers would be able to analyze certain types of student behaviors to determine whether a student is 2E, is gifted, or has disabilities.

NCLB (2002) is an education reform act which is based on four defining principles: (a) accountability, (b) parent choices, (c) local control, and (d) emphasis on educational practices (USED, 2004). The positive social change the study contributed to was that appropriate identification of 2E students and referring them to programs adhered to the core tenets of the NCLB (2002). Intervention programs specifically designed to meet the 2E learning curve may help improve subject areas that the student is lagging. Furthermore, correctly referring 2E students support the view of constructivism which states that children learn best when they use their own knowledge and memories to connect to, and interact with the subject matter they are being taught (Coleman et al., 2005). With the results of the study, teachers would be provided with an understanding about curricular, IEP's and knowledge for 2E students academic achievement in both the special and general education classrooms.

From a long term and economic perspective, helping 2E children maximize their potentials provides these students with the skills needed to compete in a challenging global workforce. Building on the suggestion of Bianco and Leech (2010), 2E children should be encouraged to develop a positive self concept. This helps the unique population

veer away from the stigma that having a disability impairs them to live normal lives. By helping children of 2E character realize their competitive advantage; teachers are able to participate in the workforce that may provide them with stable and lucrative job prospects allowing them to better contribute to society through higher taxes paid and a sense of responsibility to give back to their community.

Conclusion

In conclusion, the participants' results of the study exposed the lack of adequate training in order to identify 2E children and make valid referrals to gifted programs. Oftentimes, the educational, social, and emotional needs of 2E students go undetected (Castellanos & Tannock, 2005). As the population of 2E students increases, it also becomes increasingly important for teachers to receive the necessary training to identify 2E children and refer them to programs that would better suit their individual and unique needs.

Each research question was tested using a chi-square test. Both tests for each research question rejected its respective null hypotheses which may indicate that a teacher who received advanced training in handling exceptional students were more likely to refer a 2E student to their respective school's gifted program. These teachers had the adequate knowledge to identify a 2E child and recommend programs that would suit a 2E child's needs. Additionally, the results showed that significantly more referrals were made by teachers who received certified training. The binary logistic regression illustrated that student behavior, consultation, and other factors such as demographic characteristics of the child, knowledge of a theory that explains 2E behaviors, behaviors

of the child, consultation, and others, play a significant role in whether a teacher referred the student to a gifted program.

Given these results, educators and policy makers should ensure that parents and teachers receive proper guidance and training in order to assess whether an individual is 2E. Adequate funding, particularly for certified training, should be accorded to teachers to open opportunities for 2E students to learn in their own pace. Not only will this benefit the teacher and student, but society as a whole once 2E students are given the chance to make a better future for themselves. Further research is recommended to examine a broader set of participants across multiple geographic locations, conduct a qualitative analysis of the experiences of teachers in making referrals, and analyze how teachers would make referrals of other disabilities.

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Appendix A: Explanation of Research and Instructions Distributed Via Electronic

Survey, Qualtrics

Dear Colleague,

As educators, we frequently use research information to help us become better teachers. In order for researchers to continue gathering information that benefits teachers and their students, it is important that professionals, such as you, are willing to take part in research studies. Your participation is a valued contribution to educational research and greatly appreciated. The research will examine important recommended referrals teachers make for students with disabilities, who may be considered gifted or better known as twice exceptional (2e).

I am writing to request participation in a research project that has been approved by Walden University and the Institutional Review Board (IRB). The proposed research is for my dissertation and partial fulfillment of the doctoral degree at Walden University. Participation is completely voluntary and anonymous. Participation in this research will take approximately twenty to twenty-five minutes of your time.

Instructions: Should you decide to participate, please continue to read this correspondence through to the end. At the end of the participation letter you will be asked to respond by selecting the link at the bottom of the page. The survey will include the following: review an online consent form, which will provide you with a selection to opt-out, or continue with the survey. By continuing with the survey you are providing the researcher with your implied consent to participate in the research. The survey will ask you as the participant to complete the following: a) demographic data sheet, and b) read a one (1) page vignette describing a student. After reading the vignette, you will be asked to answer all of the six questions on a Likert scale found following the vignette by selecting ONE of the four choices (strongly agree, agree, disagree, and strongly disagree). Please do not leave any question unanswered. After you complete the questions for the vignette, you will be asked to complete the addendum related to your recommended referrals and level of training. Within approximately two weeks after receiving your initial email you will receive a friendly reminder to either sign-in or complete your process, or do nothing. You will not receive any additional reminders, or spammed for your participation. Emails will not be distributed to a third-party recipient.

Confidentiality: Any information you provide will be kept anonymous. Information on personal identity will not be collected and the results of this study will not reflect your individual responses. The researcher will not use your information for any purposes outside of this research study.

>>>>>>> **Follow this link to the Survey: $\{l://SurveyLink?d=Take\ the\ Survey\}$**

>>>>>> **Or copy and paste the URL below into your internet browser:**
\${1://SurveyURL}

Thank you for your participation.
Robin A. Jones, Researcher
Doctoral Candidate, School of Psychology, General Education
College of Social and Behavioral Sciences
Walden University

Follow the link to opt out of future emails:
\${1://OptOutLink?d=Click here to unsubscribe}

Appendix B: Letter Requesting School Participation

Dear (school principal's name):

I am writing to request your school's participation in a research project that has been approved by the Walden University's Institutional Review Board (IRB). The proposed research is for my dissertation and partial fulfillment of the doctoral degree at Walden University.

The research will examine important recommended referrals from special education, general education, and gifted teachers make for their students. Participation in this research is completely voluntary and all data collected will remain confidential.

On behalf of your school, if you allow me to collect data from the teachers the results will be used to fulfill the requirements of my research study to assess the training levels of teachers and their recommended referrals of students who are diagnosed with disabilities and could be considered twice exceptional.

Upon approval of you, or your administrator, (as noted by your physical signature below) each participant will receive an email regarding the research study. It will be a completely anonymous online process to complete the survey. This online survey will only take approximately twenty minutes of your time.

I will call you this week to confirm receipt of this letter and to answer any questions you may have.

Thank you for your time,

Robin A. Jones, Researcher
Doctoral Candidate, School of Psychology, General Education
College of Social and Behavioral Sciences
Walden University

Appendix C: Consent Form (Online Version) – Print for Your Records

Principal Investigator: Robin A. Jones. I am a doctoral candidate and a Walden University student.

Purpose: The purpose of this research study is to examine recommended referrals made by teachers for students with disabilities, who may be considered gifted or better known as twice exceptional (2e).

Procedures: Participation in this study is completely voluntary and will take approximately 20 - 25 minutes of your time. Should you decide to participate you will be asked to:

Review an online consent form, which will provide you with a selection to opt-out, or continue with the survey. By continuing with the survey you are providing the researcher with your implied consent to participate in the research. The survey will ask you as the participant to complete the following: a) demographic data sheet, and b) read a one (1) page vignette describing a student. After reading the vignette, you will be asked to answer all of the six questions on a Likert scale found following the vignette by selecting ONE of the four choices (strongly agree, agree, disagree, and strongly disagree). Please do not leave any question unanswered. After you complete the questions for the vignette, you will be asked to complete the addendum related to your recommended referrals and level of training. Within approximately two weeks after receiving your initial email, you will receive a friendly reminder to either sign-in and complete your process, or do nothing. You will not receive any additional reminders, or spammed for your participation. Emails will not be distributed to a third-party recipient.

Scope: According to your current role and job level as an educator you are being asked to participate in a research study for students who are diagnosed with disabilities and could be considered twice exceptional.

Risks: The risks involved with participation in this study are no more than one would experience in regular daily activities.

Benefits: The benefits include contributing to a growing body of educational research concerning important recommended referrals teachers make for students who are potentially twice exceptional. The results of this study will help inform educators and practitioners to assess appropriate training levels for educators and interventions for children.

Voluntary Nature of the Study: Your participation in this study is voluntary. This means that everyone will respect your decision of whether or not you want to be in the study. You will not be treated differently if you decide not to participate. If you decide to join

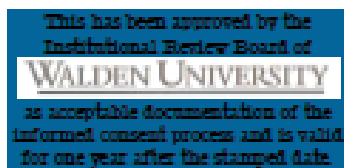
the study and later you make a choice to stop with the process (withdraw) or choose not to respond to further questions, please note, incomplete surveys will not be included in the data set. Should you feel stressed during the study, you may stop at any time. Please be aware, once the survey is submitted, a withdrawal option will not be available.

Compensation: There is no compensation for participating in this study.

Confidentiality: Any information you provide will be kept anonymous. Information on personal identity will not be collected and the results of this study will not reflect your individual responses. The researcher will not use your information for any purposes outside of this research study.

Contact Information: For related problems or questions as a participant, you can call the principal investigator, Robin A. Jones, at. Additionally, if you would like to talk about your rights as a participant, you may contact Dr. Leilani Endicott at:. Walden University's approval number for this study is **11-26-13-0154801** and it expires on **November 25, 2014**..

Statement of Consent: After you have read the above information and feel that you can comfortably participate in the study described, please begin by moving to the next page. If you choose not to move forward to the next page, you are making a choice to opt-out of the survey. By completing the survey, you are agreeing to participate in this research. Please feel free to print a copy of this form for your own records.



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Appendix D: Demographic Data Sheet

1. Gender: M _____ F _____
2. Age: 20-30 _____ 31-40 _____ 42-50 _____ 51-60 _____ 61 and older

3. Current teaching assignment (please circle) and specify if other:

Kindergarten 1st grade 2nd grade 3rd grade 4th grade 5th grade 6th grade Special
Ed

Other (specify) _____
4. Circle highest degree earned:

Bachelor' degree Master's degree Doctorate degree

Specialist (explain) _____
5. Current teaching certification (specify) _____
6. Number of years total teaching experience:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 or more

Appendix E: Vignette Stem

A.K, a fourth grade student, is currently attending your school.

A.K. has been described as intense, inquisitive, energetic and imaginative. A.K. is committed to completing tasks that are self-selected and self-directed. This student is an independent learner often preferring unstructured, independent tasks to teacher directed or cooperative group activities. A.K. prefers finding solutions to problems independently and in sometimes unconventional ways.

A.K. is extremely sensitive to criticism (self-imposed and by others). This student is very self critical and becomes easily frustrated and angry when mistakes are made or there is pressure for completing work within a deadline.

This student has many interests, particularly around themes of investigating UFOs and life on other planets. Given the opportunity, A.K. could spend hours investigating this line of interest.

Teachers have noted that A.K. dislikes and resists most routine practice tasks such as math drills, spelling tests, handwriting practices and any copy tasks.

Overall, A.K.'s language arts scores reflect above grade level achievement in reading and writing. A.K.'s reading skills are well above grade level. This student enjoys reading most anything on topics of interest including science and science fiction but dislikes and resists suggestions to expand reading to other areas.

While A.K. enjoys math and has a very good grasp of mathematical concepts, many careless computation errors are made especially when attempts are made at working too quickly. Recent scores on achievement tests reflect grade level achievement in mathematics, however classroom performance is lower than one would expect.

Socially, A.K. has a few close friends and is generally accepted by peers. A.K.'s friends enjoy hearing about the most recent UFO findings and are intrigued by this child's vivid imagination. Problems surface when A.K. dominates activities or becomes argumentative and spirited when challenged by peers or adults. While this problem has surfaced in the classroom and on the playground, it is most frequently observed during competitive activities (e.g. spelling bees, sports). This can sometimes be a problem for A.K., friends and teachers.

Appendix F: Survey Instrument

Based on the information (Vignette) you have just read concerning this hypothetical student, please read and answer each of the following questions by circling one of the four responses. For the purposes of this survey, please assume the recommended programs are available at your school.

- 1) I would recommend that this student join one of the after-school science clubs.
Strongly agree Agree Disagree Strongly disagree
- 2) I would recommend that this student participate in our school sports program.
Strongly agree Agree Disagree Strongly disagree
- 3) I would recommend that this student be referred for placement into our school's gifted program.
Strongly agree Agree Disagree Strongly disagree
- 4) I would recommend that this student be referred for counseling services provided at our school or by an outside agency.
Strongly agree Agree Disagree Strongly disagree
- 5) I would recommend that this student participate in social skills training.
Strongly agree Agree Disagree Strongly disagree
- 6) I would recommend that this student participate in our math-tutoring program.
Strongly agree Agree Disagree Strongly disagree

Explanation of training levels:

- a) No training – Includes teachers with no training delivers regular class-based curriculum without any interaction or experience working with referrals for 2E students will have a minimum of a bachelor's degree.
- b) Specialized seminar – Includes teachers who attended a workshop or seminar for working with students who are diagnosed with disabilities or special education or gifted will have a certificate of completion for the specialized seminar who delivers in-service training components such as screening and identification procedures, curriculum and recommended referrals for interventions of 2E students.
- c) Internship training – Includes teachers who were able to seek an internship at a school for gifted children, or children with disabilities, or children who were considered special education will select internship training delivers expertise in the role of teachers to assist

with practicum of understanding and categorization of the characteristics/ behaviors for referrals of 2E students.

- d) Certified training – Includes teachers who are certified to include strategies and accommodations that are considered “best” practices for referrals of 2E students who are gifted, or students with disabilities, or students who are considered special education.

Appendix G: Questionnaire on Referrals

Based on the Vignette and the Likert scale survey, please respond to the following questions.

1. What types of training have you received in regards to working with 2E children?
a) No training b) Specialized seminar c) Internship training d) Certified
2. What type(s) of training have you received in regards to working with gifted children?
a) No training b) Specialized seminar c) Internship training d) Certified
3. What type(s) of training have you received in regards to working with special education children?
a) No training b) Specialized seminar c) Internship training d) Certified
4. How many students did you refer to gifted programs during the past academic year?
_____ (Specify)
5. Which factors contributed to your decision for referral to the gifted program services? (check all factors that apply):
 - a) Demographic characteristics of the child (e.g., gender, age)*
 - b) Knowledge of a theory that explains 2E behaviors (e.g., role of stimulation)*
 - c) Behaviors of the child (e.g., disruptive behaviors, academic performance)*
 - d) Consultation (with parents, school psychologist, etc.)*
 - e) Other (specify) _____*

Appendix H: Request for Reuse of Instrument

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Home

Create Account

Help



Title: Twice-Exceptional Learners: Effects of Teacher Preparation and Disability Labels on Gifted Referrals

Author: Margarita Bianco, Nancy L. Leech

Publication: Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council

Publisher: Sage Publications

Date: 11/01/2010

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Password
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<input type="checkbox"/> Enable Auto Login
<input type="button" value="LOGIN"/>
Forgot Password/User ID?
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Appendix I: Reminder (Online Version)

Dear (participant)

This is a reminder notice regarding participation in a research study to examine important recommended referrals teachers make for students with disabilities, who may be considered gifted or better known as twice exceptional (2e). If you have decided to remove yourself from the research study and will not be participating, please disregard the reminder. Thank you for your time.

As a willing participant you are making a choice to participate in the study for students who are considered 2e. Please select the following URL: [Survey for 2e Student Referrals and Teacher Training](#) to begin your study. Please review the online consent form prior to making your selection to move forward with the Continue button. Print a copy of the online consent form for your records.

For related problems or questions as a participant, you can call the principal investigator, Robin A. Jones, at. Additionally, if you would like to talk about your rights as a participant, you may contact Dr. Leilani Endicott. Walden University's approval number for this study will be available.

Thank you for your time,
Robin A. Jones, Researcher
Doctoral Candidate, School of Psychology, General Psychology
College of Social and Behavioral Sciences
Walden University

Appendix J: Curriculum Vitae

ROBIN A. JONES, MSCIS, MCPM, Ph.D.***EDUCATION & PROFESSIONAL DEVELOPMENT***

Boston University □ Boston, MA	Master of Science □ Computer Information Systems, System Security and Forensics
Boston University □ Boston, MA	Master Certificate □ Program Management PMI □ PMP planned for December
IBM University: Project Management Certification IBM University: Master's Program in	Courses and Training, Project Management Institute – Boot-camp Certification Program Project Management, George Washington University George Washington University □ D.C.
Walden University: PhD Program General Psychology, Education	
Capital Law School: Arbitration, Mediation, Dispute, Resolution – accredited CEU	

ACADEMIC EXPERIENCE**(2008-current) University of California, Berkeley, Haas School of Business [F/T staff]**

(2010-current) University of Maryland [P/T] Adjunct Faculty

(2009-2010) Vallejo/John Swett Unified School District, [K-12] Math/ Science Teacher

(2000-2007) Columbus State Community College - Workforce Development Program

(1999-2006) Ohio State University – Mt. Vernon branch [P/T] Instructor

RELEVANT PROFESSIONAL EXPERIENCE

1999 – 2008: eTraining Technology Academy – VP of Education and Development

1998 – 1999: Black Data Processing Association [BDPA] – Executive Director

1982 – 1999: Capital Data Systems, IBM, State of Ohio, and US Dept of Defense

Earlier Engagements: Ashland Oil, General Electric, Big 5 Accounting Firms

GRANTS RECEIVED

2004 - 2010: PI; RA. Jones, Sponsor – Honda of America, \$12,000 annually (STEM)

2000 - 2003: PI; RA. Jones, Sponsor – Skillsoft, \$12M in-kind annually (Computer / Business Lit)

2000 - 2001: PI; RA. Jones, Sponsor – City of Columbus, \$500K one-time (Workforce Dev)

2000 - 2010: PI; RA. Jones, Sponsor – Microsoft, \$10,000 in-kind annually (STEM)

2005 - 2006: Grant Reviewer; RA. Jones, Gov Agency, US DOD – TOP grant

2004 - 2006: Grant Reviewer; RA. Jones, Non-Profit, Susan G. Komen Foundation – Breast Cancer

HONORS AND AWARDS

- Who's Who among *Executives and Professionals* – 2011
- National Business of the Year, Co-chair Bus. Advisory Council Medal of Distinction – 2008
- State of Ohio Board's and Commission's – appointed by Governor Taft; 1999 – 2007
- Small Business Women of the Year: Appointed by President G. Bush; 2005 and 2006
- Board member, Grant's committee – Susan G. Komen Foundation; 2003 – 2006
- Columbus Metropolitan Public Library – former Board member; 1992 – 2000
- Who's Who in *Executive Management* – 1999
- Minority Business Award 1993
- YWCA – former Board member; 1989 – 1992
- Small Business Achievement Award 1989
- Founding Member Columbus, Chapter of the BDPA National Organization – 1989 (Black Data Processing Association)
- Black Business Woman of the Year - 1989 Ohio Black Expo
- Outstanding Young Women of America 1986
- NACO [National Award of Counties] 1986 for Welfare Reform

PROFESSIONAL PRESENTATIONS AND PAPERS

- National spokesperson for Project Business Summit; Mitigating Risk by Leveraging Best Practices
- Art of Proposal Writing for United Way of Central Ohio, and Susan G. Komen
- Effective Project Management Skills for IBM and BDPA
- Article – Mainframe for Sale: from Data Center to Utility Computing
- Article – Forensics Computing: In the Face of Danger
- Article – Risk Management: Now About that Train Heading your Way: Leveraging Best Practices
- Dissertation – The Paradox of the twice exceptional (2E) student
- Children's books – Nickali's Journey – The Search of Life

PROFESSIONAL SUMMARY – Senior Director and Education Instructor

Senior Director and Education Instructor with dynamic and highly-accomplished business and technology leadership with an outstanding record of success providing C-level management requirements in the areas of Information Technology [IT], sales & marketing, legal/contract management, project management, business process, arbitration, mediation and dispute resolution. Demonstrates processes and builds requirements for state-of-the-art program resources whereby gaining increased revenues to deliver strategic business solutions that contribute to bottom-line company objectives from Fortune 50 companies, such as IBM and GE to Government sector projects with USDOD/DOC, NIST, to Non-Profit organizations to deliver a broad spectrum of industry-solutions worldwide. Expertise in developing and implementing long and short-term business and information technology plans, strategies and architecture that delivers on-time and on-budget, and according to specifications.

Effectively manages and motivates staff to a high-performance level of professionalism. Highly proficient and coordinates multi-million-dollar budgets while directing business operations. Delivers state of the art online instruction to higher education as an adjunct associate faculty to multi-learning environment

Employment Highlights

- **Education** – 1) Traditional Higher Ed: provided standup and online classes to Ohio State University and Ashford University to adults returning to college either through workforce development, or civilian duties as retirees from the military. 2) Online Higher Ed: provided teaching instructions to give online based curriculum and student support to assist with completing virtual assignments; while posting discussions; created tutorials and course videos on a weekly basis per quarter to give the students an opportunity to achieve their goals of graduating at a late age in life; 3) Traditional High School: recruited and mentored High School students to maintain a 90% retention and graduation rate that resulted in a 75% college graduation rate; developed curricula for computer literacy, technology training, network computing, computer building for technical training in the areas of Comptia, CISCO, Microsoft, JAVA and more.
- **Nonprofit** - chartered standards by ensuring that the policies, programs and business practices of the organization are in keeping with the spirit of the ministry, mission, purpose and trust of consumers, donors and funding sources; established practices and procedures for a consortium of chapter-based organizations to deliver more cohesive funding efforts and to strengthen partnerships.

- **Mentoring** – prepared after school curricula and mentoring programs for over 200 at-risk youth that have the potential of slipping away; developed ongoing educational data to assist with college preparedness and study skills, scholarship location assistance, and vocational training; implemented programs to spend just a few hours each week with protégé/ mentee for at least a year that includes playing games, seeing movies, watching ball games or just hanging out, all intended to increase the child's self-esteem and aid development into mature, responsible men and women.
- **Overall Youth Achievement** – Assisted with programs that reduce teen pregnancy, drug use, gang violence and school drop-out rates while develop tools for coping with low self-esteem and problems with school or peers; aided in the improvement of students decision-making skills, and form

trusting relationships with adults. Provided management of student conduct and ethical behavior

- **Strategic Relationships** – Improved the relationships between K-12 and Higher Ed aimed at high schools students who face barriers to pursuing higher education by 90%; developed one-on-one relationships with student and parents to better educate the family regarding education; demonstrated ability to work successfully and positively in a culturally and ethnically diverse community

- **Relevant Experience Education and Non Profit**

- Executive Director [contract position] reporting directly to the Board of Directors for the BDPA National foundation with oversight to more than 60 affiliate chapters nationwide by developing an infrastructure to receive manage and administer grant dollars and scholarships.
 - Contract Management
 - Entertained and met with many of the foundation directors of major companies such as Allstate, Nationwide, Dell, and Microsoft. Through this effort they developed, trained and tutored youth [ages 13-18] in after school programs, and maintained and established corporate relations for grant giving. Various workshops and seminars were given.
 - Project Management
 - Project Manager training for Black Data Processing Association [BDPA] providing PM processes and procedures that coincided with PMI methodologies, nine areas of practice management. Also, provided practice procedures to deliver projects according to the System Development Life Cycle.
- Managing Director [contract] of scholarship disbursements for at-risk, first generation college entrants providing up to \$8,500 scholarships per year upon program completion; servicing over 200 students and distributing almost \$500,000 in scholarship funds.
 - Fund Development
 - Oversaw fundraising and worked with the Board of Directors to development staff and secure funding sources, as well as establishing strategies to approach funders
 - Developed and implemented annual plan to strengthen the success of the business
 - Organizational Administration
 - Recruited, hired and supervised staff for effective programs with the organization's mission

- Ensured fiduciary responsibility and financial accountability including budget development and implementation and complied with all relevant laws
- Developed and lead a process for planning the organization
- Reported regularly to the Board regarding organizational objectives, financial status and other relevant issues
- Assisted the Board in their roles and responsibilities
- Community and public relations
 - Identified and developed community resources to support and achieve organizational goals
- Student Preparedness
 - Prepared reports and recruited students from 35 high schools in five California districts within a 200 mile radius of the Bay Area from Oakland, Pittsburg, Richmond, San Jose, and Vallejo, including Middle College, a prep school that allows junior and seniors to receive college course credits before college
 - Developed program materials to aid youth in time management, financial literacy, SAT study, college readiness, and computer training skilled through online classes with COMPTIA [A+, N+, Server+, and Network+] that included testing for certification and receiving certifications
 - Worked one-on-one to meet with families, and school counselors to assist with their future development that helped in the improvement of student attitudes and parents awareness of the program
- Training Management
 - Provided training and oversight for more than 3,000 courses to one of the largest online distance and self paced learning, web-based programs and Learning Management Systems in the U.S. Executed Management techniques for technical and business programs to direct and oversee program funding of grant dollars for multiple projects. Provided online training to adults in workforce development [un/underemployed, ex-offenders, single parents, etc.] and after school programs [tutoring, NCLB, SAT, etc.] to help strengthen the damaged worker and the at-risk youth toward becoming a more informed community for the 21st Century. Assisted and implemented multiple sites for distributed systems.
- Corporate Online Training
 - Established program development managing ten trainers and four volunteer staff; authored specific course curricula and syllabi for stand-up lecture and online web-based training systems that culminated into Corporate University training for Human Resource, New Employee and Employee remediation training.
- System Development

- Created eLearning design and evaluation of instructional strategies, methods, technologies such as CAMTASIA and Dokeos for e-learning business requirements, and proposals. Created and designed the management of an Intellectual Capital database for the development of a corporate university for administrative and field staff to access an online system with full implementation of a web-based learning system. Interviewed SMEs to author and maintain web-based training courses, curricula, training presentations, recorded training sessions, user guides, flash tutorials, quick reference materials, etc.
 - Designed and developed program content for internal staff of 50 and field staff of 200 for delivery in different learning modalities such as self-paced (WBT, CBT, PodCasts, IPODs, CAMTASIA, Dokeos, VISTA and Blackboard, eCollege, WebCT). Provided delivery for instructor-facilitated (live or virtual classroom, coaching, mentoring) or a blend for online.
 - Incorporated the data into self-paced WBT training program and stand-up instructional delivery, building a comprehensive LMS including online content and testing for bi-annual skills assessment.
- **Interim CIO** with responsibilities to assist the senior management team developing business requirements, and proposals.
- Strategic Development
 - Created and designed the management of an Intellectual Capital database for staff access to an online e-learning system with full implementation of the web-based product within two weeks, when all other prior attempts failed. Incorporated the data into a self-paced training program as well as stand-up instructional delivery.
 - Developed a Quality Control System as a Risk Manager for a major statewide system [Developmental Disabilities] to aid persons with disabilities
 - Developed business processes and regulations management documentation to comply with federal and state guidelines
- **Interim CIO** with responsibilities to manage a virtual client and oversee the global technology of a national nonprofit organization with 14 affiliate offices across the United States. Oversight and implementation provide strategic direction of the total operation.
- Program Management
 - Coordinated activities to manage a virtual client and oversee the global technology of a national nonprofit. Directly interacted and consulted with senior management, board members, and vendors to establish Executive Steering Committees and program implementation. Developed and upgraded the business infrastructure and transitioned the data center to a Utility Computing center, **annual 90% savings**. Traveled 100% and maintained a “roll-up-the-sleeves” attitude. Additional duties included vendor management, RFP and proposal development, contract negotiations,

engagement management, and consultative sales, ensuring high customer satisfaction.

□□ Strategic Planning

- Developed a long range strategic development plan for a national non-profit entity to include 14 affiliate offices.

➤ **V.P. of Technology and Administration** of technology for online telecom services, logistics and operation management; provided oversight for corporate client recruitment and ongoing sustainability, with a certification to deliver projects on time, and within budget with an average percentage of **50% closing** on all client calls.

- Sales Management
 - Primary areas of expertise were business process development of reengineering for Business Continuity and System Security; reported to the Executive VP of Operations.
- **V.P. of Education** of nonprofit, e-Training Technology Academy; provided training and oversight for more than 3,000 courses to one of the largest online distance and self paced learning, web-based programs and Learning Management Systems in the U.S., Skillsoft. Assisted with the review and scoring of proficiency exams as a national testing service through Houghlin testing.
- Types of Delivery
 - Online Delivery and Standup Lecture.
 - Course Development and Training Curriculum.
 - Educational and Technological Training Center - assisted with the initiation and development of a non-profit computer training center for distance and self paced learning techniques as well as computer based elearning

□ **Relevant Experience Corporate and Government**

➤ President and Founder of full-service consulting firm providing services to the private and public sector for systems development and implementation across multi-platforms. Start-up venture with \$500 and grew to \$25m and 30 plus employees and contractors.

□ Operations Management

- Operated CDS for over twelve years while managing a budget of annual gross revenue of \$2.5 to \$3M to over \$25M, with \$500 startup capital. Contracted with the State of Ohio and subcontracted with IBM and Big Four accounting firms [1990-1994, KPMG, Deloitte, E&Y, and P/W] providing IV&V services; received letters of recommendation from all client accounts, with a **95% return client base**.
- Sr. Vice President for budget deliveries up to and including \$500million for various private sector companies such as IBM and State of Ohio agencies; developed a comprehensive cost process for IBM to provide estimation and resource allocation for project deployment.

- As an AVP [contract with TRW], reported directly to VP Public Safety for Information Telecommunications. Responsible for Statewide training of the Integrated Logistics Support for an information telecommunications for emergency management, Ohio MARCS, which included an infrastructure designed to provide wireless communications to deliver a total engineering concept for disaster recovery. Process included financial tracking and planning for budgets exceeding \$500M, managed a staff of 35 and four subcontracting companies, i.e., Motorola and Printrak.
- As a CTO developed a city-wide network plan for the City of Richmond to include the School District, the City administration offices, as well as police and fire.
- Project Manager delivering the project turnaround for the Ohio Department of Job and Family Services for the integration of the multi systems associated with federal and state subsidies such as MMIS, Child Support [SETS], Adoption, etc.
- Senior Project Manager for a point-of-sale (POS) Customer Service retail-based operation Year 2000 project, responsibilities included over 3,000 locations in the United States and five locations in Europe totaling approximately 15,000 users using CRM system.
- Project Manager for the State of Ohio a proposed Library Management System, OhioLINK.
- Project Manager involved in design, development and implementation of the first Internet-based application for a Customer Service application for Cash Management products with one of the Nation's largest banks; reported to the COO. Provided national service across platforms. Involved reengineering a financial systems bank merger, combining seven regions nationwide and 10,000 users. Included managing and coordinating the requirements and test planning and procedures for strategic test development, with test cases and test scripts using KIOSK technology.
- Project Manager for the State of Ohio Human Services and Blue Cross/Blue Shield for the development of an integrated tape system for ICD9 codes
- As a Program Manager, developed and implemented 1) the Ohio Medicaid Industry Information System (MIIS) for the Ohio Dept of Human Services and Ohio Bureau of Workers' Compensation responsibilities included modification, conversion and installation. 2) Implemented a tracking system for disabled workers that received Medicare and Medicaid Management Information System (MMIS); received National award by the National Association of Counties [NACO] for cost savings and full implementation on time and under budget.

- Project Manager for one of the nation's largest banks; consisted of the initial departmental assessment, many one-on-one interviews, organization of data collection, regular meetings, and state, regional, national presentation to expand the system nationwide for all end-user locations; developed an online information inquiry for a networked environment in RoboHelp, an online help authoring tool, for context-sensitive and hypertext GUI; made recommendations for the network configuration of the hardware environment, software development tool, screen designs, and ongoing maintenance of the system.
- Project Manager, responsible for the design and development of a customized worldwide database for the United States Air Force; monitored and evaluated test data from aircraft engines, included naval and air force.
- Contract Management
 - Provided Quality Control processing as a Risk Manager for a Statewide system [Developmental Disabilities] delivering independent living for persons with disabilities
 - Developed business processes and requirements as well as regulations management documentation to comply with federal and state guidelines
 - Director [contract] of scholarship disbursements for at-risk, first generation college entrants providing up to \$8,500 scholarships per year upon program completion; servicing over 200 students and distributing almost \$500,000 in scholarship funds.
- Program Development
 - Developed program overseeing evening and after school programs for at-risk youth and workforce development participants. Delivered training to students in the areas of web-page design, PowerPoint, and database. Reviewed and scored proficiency tests for Houghlin testing.
- Human Resource Process
 - Maintained responsibilities for oversight of business development and startup. Management of Human Resource benefits and planning for payroll, insurance, employee benefits, performance reviews, staff perks, 401k plans, recruitment and retention, policies and procedures, employee manuals, arbitration, labor relations, and education programs.
- Project Management
 - Provided PMI practices to deliver real-time experiences through the development of Communications Plans, Quality Planning, Scope and Time Management, etc.; provided online e-learning course prep and oversight to laid-off workers seeking PM practices and learning standards. Monitored testing and review of PMI Project Manager course curriculum through Skillsoft. Program Executive [contract with IBM] for various Fortune 500 companies, such as Utilities, Insurance, Manufacturing, etc. That delivered

\$30M plus project[s], while managing multiple projects and human resources; average 30 per project. All responsibilities included *Project Management, adjusting methodologies, developing, maintaining and reviewing* all contracts, statements of work, and change authorizations, and *training [workshops and seminars]*. As a Program Mgr wrote Business Continuity Plans & Disaster Recovery Documentation; developed materials for Project Management Office (PMO) and best practices for protecting IBM's Intellectual Capital; detailed the areas of Change and Configuration Management. Set up PMO offices across projects for clients. Project Manager for IBM providing PM strategies and methodologies for managing scope creep, proposal development and risk mitigation. Also set up Project Management Offices from project to project at the client request to increase ROI and reduce repetitive procedures within the Project Portfolio.

□ Vendor Management

- Provided project oversight and vendor verification and validation to the State of Ohio projects for case management of various integrated systems within the Department of Human Services, such as TANF, CRIS, SETS, MMIS, and SACWIS while managing the integration with multiple agencies such as the Department of Health and local municipalities.

➤ Types of Delivery

- Project Management - budgeting and forecasting, project tracking, deliverable identification, client awareness, opportunity measures, proposal writing, team building, and interviewing techniques.
- System Documentation - preparing documentation.
- Tools – RoboHELP [web builder] Internet access, HTML, Windows, MSOffice, Lotus SmartSuite.
- Testing - test procedures, various testing tool packages. [Computer Associates [QA Suite]]